CPC-2024-2010-GPA-ZC-CU3-SPPC

Exhibit C: Environmental Clearance

C.1 – Environment Impact Report SCH 2015111038

VAPP Final EIR
Chapter 1 Introduction
Chapter 2 Response to Comments
Chapter 3 Modifications to Draft EIR
Appendix L: Public Hearing Transcript
Appendix M: Updated Geotechnical Report
Findings of Overriding Considerations
Mitigation Monitoring and Reporting Program

CPC-2024-2010-GPA-ZC-CU3-SPPC

Exhibit C: Environmental Clearance

C.2 – Addendum dated October 29, 2021

VENICE AUXILIARY PUMPING PLANT (VAPP)

(SCH #2015111038)

ADDENDUM TO THE ENVIRONMENTAL IMPACT REPORT

For the VAPP – 128 Hurricane St. Lot Oilwell Abandonment

v. October 29, 2021

City of Los Angeles
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ENGINEERING
CITY OF LOS ANGELES

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1.0 Introduction

Section 15160 of the CEQA Guidelines explains that there are a number of examples of variations in EIRs, because the documents are tailored to different situations and intended uses. The variations are not exclusive. Lead Agencies may use variations consistent with the guidelines to meet the needs of other circumstances. (State of California, 2020)

The CEQA process allows for an Addendum EIR when the lead agency finds and identifies information about additional impacts of a proposed project that was not included in the original Project EIR. Specifically, Section 15164 Addendum to an EIR of the CEQA Guidelines states (State of California, 2020):

> (a) The lead agency or responsible agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred.
>
> (b) An addendum to an adopted negative declaration may be prepared if only minor technical changes or additions are necessary or none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or negative declaration have occurred.
>
> (c) An addendum need not be circulated for public review but can be included in or attached to the final EIR or adopted negative declaration.
>
> (d) The decision-making body shall consider the addendum with the final EIR prior to making a decision on the project.
>
> (e) A brief explanation of the decision not to prepare a subsequent EIR pursuant to Section 15162 should be included in an addendum to an EIR, the lead agency's findings on the project, or elsewhere in the record. The explanation must be supported by substantial evidence.

Section 15162 of the CEQA Guidelines provides the criteria for preparing a Subsequent EIR or Negative Declaration. However, this project does not include substantial changes that involve any new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

No substantial changes occur with respect to the circumstances under which the project is undertaken that will require major revisions of the previously approved EIR due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects.

There is new information of substantial importance, which was not known and could not have been known with reasonable diligence at the time the previous EIR was certified; however, there are no additional severe significant effects, new mitigation measures, or new available but not adopted Alternatives. Here, the City has opted to prepare an Addendum to assess the minor modifications of the Project that have transpired since preparation of the EIR (State of California, 2020).

The CEQA process allows for an Addendum EIR when the lead agency finds and identifies information about additional impacts of a proposed project that were not included in the original Project EIR. The lead agency can prepare a Draft Addendum EIR to add these new environmental impacts of the Proposed Project.

The addition of the VAPP Project's oil well abandonment and remediation of the 128 Hurricane St. lot; and the new designation of the adjacent Venice Grand Canal and Ballona Lagoon waters as a U.S. Essential Fisheries Habitat area were not analyzed or included in the VAPP EIR. The VAPP EIR did not address Hazards or Hazardous Materials.

Therefore, the City of Los Angeles has decided to prepare a Draft Addendum EIR. to the previously certified EIR because some changes or additions are necessary, but none are any of the conditions described in CEQA Section 15162 calling for preparation of a subsequent EIR have occurred. The Addendum of the EIR need not be circulated for public review but can be included in or attached to the Final EIR. The decision making body shall consider the addendum with the Final EIR prior to making a decision on the project. A brief explanation of the decision not to prepare a subsequent EIR pursuant to CEQA § 15162 should be included in an addendum to an EIR, the lead agency's findings on the project, or elsewhere in the record. Also, the explanation must be supported by substantial evidence. (State of California, 2016)

2.0 Project Overview

The purpose of this Addendum EIR is to update the VAPP DRAFT EIR and FINAL EIR with new and additional information about the project site that do not cause new significant impacts.

This addendum includes: the new designation of the Venice Grand Canal and Ballona Lagoon as an U. S. National Marine Fisheries Service (NMFS) Essential Fisheries Habitat; the 128 Hurricane St lot oil well abandonment, including soil removal and soil remediation (See *Figure 4 - 128 Hurricane St. Lot Site Plan* and *Figure 5 - VAPP Site Plan)*.

Then the following 128 Hurricane St lot construction:

- Impervious area, including seven parking spaces and four bicycle spaces; and sidewalk, is approximately 3,031 square feet or 0.07 acres.
- Pervious area, including landscaped and open space area, is approximately 1,199 square feet or 0.03 acres.

Additionally, proposed improvements will include installation of a public art on the Site to comply with the City of LA Public Works Improvement Arts Program. The three-dimensional public art will be in the landscaped and open space on the south side of the Site. This area will be open to public access.

The Site will serve as the Laydown Area 1 for Stage 1 of the redevelopment. Access to the Site during construction will be from Hurricane Street.

3.0 Project Background

This Addendum to the previously certified Final Environmental Impact Report for the Venice Auxiliary Pumping Plant (State Clearinghouse #2015111038) has been prepared by the City of Los Angeles to evaluate the environmental effects of the new U.S. NOAA Essential Fish Habitat designation, the oil well abandonment, soil removal, soil remediation, and the construction of the 128 Hurricane St. lot of the Venice Auxiliary Pumping Plant Project.

The Proposed Project is located at 128 Hurricane St., Venice, CA 90292 (Proposed Project) as part of the Venice Auxiliary Pumping Plant (VAPP) Project. The 128 Hurricane St lot is one of three vacant lots that make up the VAPP Project. It is the westerly lot of the three.

The Site is approximately 4,230 square feet and is assigned to the Los Angeles County Assessor's Parcel Number 422-5010-016. The Site is bordered to the north and west by residences; to the east by the City of LA Department of Public Works Venice Pumping Plant, and to the south by a CA Coastal Access Trail and Ballona Lagoon Grand Canal *Figure 3-Prcject Location Map*. The site is currently a vacant pervious lot and was recently used for the storage of vehicles and other miscellaneous items during the various public construction projects (Ninyo & Moore, 2016)

3.1 Previous Environmental Document

The Draft EIR was circulated for review and comments from the public and other interested parties, agencies, and organizations for over 45 calendar days, beginning on October 27, 2016, and closing on December 15, 2016.

The Final Environmental Impact Report for the Venice Auxiliary Pumping Plant (hereinafter referenced as the VAPP Final EIR) was certified by the City of Los Angeles City Council on August 9, 2017. It evaluated the potential environmental impacts resulting from construction of the VAPP.

4.0 Purpose for Addendum

The purpose of this Addendum to the EIR is to add the new information and analysis contained in the new Essential Fish Habitat Assessment for the VAPP (Ninyo & Moore, 2016) (AECOM, 2019); the Phase II ESA, Phase II ESA amendment; and the Remediation Action Plan. The analysis contained in the VAPP EIR did not include the Phase II ESA, Phase II ESA amendment; the Remediation Action Plan; and the new U. S. National Marine Fisheries Service (NMFS) Essential Fish Habitat Assessment's designation.

This Addendum EIR includes additional information the following environmental impact areas:

- Biological Resources – Essential Fish Habitat Assessment
- Hazards and Hazardous Materials – Soil removal, soil remediation and transport, and oil well abandonment

It should be noted, however, that the additional required sections and analysis that were not in the approved VAPP EIR, per CEQA are included in this Addendum EIR.

The focus of this Addendum EIR is specifically for:

- The Phase II ESA + Amendment for a limited subsurface soil and groundwater sampling and analysis; the exact location and abandonment of the oil well
- The Remediation Action Plan for soil removal and remediation of the 128 Hurricane St. lot
- The new Essential Fish Habitat Assessment for the VAPP U. S. National Marine Fisheries Service waterway designation of the adjacent waters Grand Canal and Ballona Lagoon as US Fisheries areas.

5.0 Proposed Project Modifications

1. Designate the waterways adjacent to the Project Site a U. S. National Marine Fisheries Service Essential Fisheries Habitat;
2. Phase II ESA soil removal plan for the 128 Hurricane St. lot for lead and TPH-d-impacted soil where the concentrations exceed residential screening level;
3. Remediation Action Plan with soil removal and remediation plans for the 128 Hurricane St. lot for lead and TPH-d-impacted soil where the concentrations exceed residential screening level; this includes agency oversight;
4. Abandon oil production well based on current CalGEM requirements, using the new Remediation Action Plan (RAP) oil well abandonment plan

6.0 Environmental Impact Analysis

This addendum environmental impact analysis provides new evidence, as required in CEQA Section 15162(e) that supports the City's decision not to prepare a Subsequent EIR pursuant to CEQA Guidelines Section 15162.

6.1 Biological Resources

This section describes the affected environment and regulatory setting for the biological resources and jurisdictional areas of the Project Site and associated study area *(see Figure 2 – Study Area Map)*. It also describes the potential impacts that would result from implementation of the Venice Auxiliary Pumping Plant Project, including the 128 Hurricane St. lot on these resources and where necessary, to reduce or avoid such impacts.

Environmental Setting

The environmental setting information and analysis in this section is summarized from the *Biological Resources and Habitat Assessment* and *Jurisdictional Delineation Report* (ICF, 2016) (Appendix F).

Within this section, the term "study area" refers to the Project Site plus an additional 500-foot buffer area surrounding the Project Site. Special-status species referred to in this section include those plants and wildlife species listed as threatened or endangered under federal or state endangered species acts (California Department of Fish and Wildlife [CDFW] 2015a),

plant species designated by the California Native Plant Society (CNPS) with a California Rare Plant Rank (CRPR) or other plants of local concern (CNPS 2015), and wildlife that is designated as a California Species of Special Concern, as defined by CDFW (CDFW 2015a).

The biological resources and jurisdictional delineation were conducted to provide recommendations for design and construction of the VAPP at the Project Site. Thus, the recommendations presented address biological resources and jurisdictional issues, including the newly designated essential fish habitat, and jurisdictional areas, including waters of the United States and California and wetlands.

Ballona Lagoon and the Grand Canal lie within the neighborhood of Venice in Los Angeles, California, and are muted tidal, nearshore estuarine waters connected to Marina del Rey near its terminus in Santa Monica Bay *(Figure 1 – Prcject Vicinity Map)*. The community of Venice experiences a mean annual temperature of 63 degrees Fahrenheit (°F; 17.2 Celsius [°C]), with a mean annual precipitation of approximately 13 inches. (U.S. Climate Data, 2019). Elevations in the study area, where Ballona Lagoon, Grand Canal, and Hurricane Street approximately come together, ranges from just below sea level to 3-feet above sea level. Although surrounded by development, aquatic features and their margin in the study area are primarily preserved open space with minimal-impact infrastructure.

The Project is approximately 0.75 mile upstream (north-northwest) of the Marina del Rey Channel and is at Grand Canal, just beyond where Ballona Lagoon transitions into the canal *(Figure 3 – Prcject Location Map)*. Tidal exchange into Ballona Lagoon and Grand Canal occurs through three tide gates that pass underneath Via Marina and link the lagoon and the canal to the Pacific Ocean via the Marina Del Rey Channel. According to an older document from the State of California's Natural Resources Agency that is available online, one of the three gates is maintained in the open position, and the average tidal regime is restricted, and ranges from approximately -2 feet to+2.5 feet National Geodetic Vertical Datum (State of California, 2007). Debris racks with an approximately 2-inch grid on the inside and outside of the gate facility protect it from debris, effectively preventing larger fish from passing through. All of the fresh water entering Ballona Lagoon and Grand Canal is urban run-off; these features have been isolated from Ballona Creek.

The debris racks that control tidal flow to the Project Site were inspected on March 7, 2019, and found to have considerable potential to limit the movement of fishes. On the Marina Channel (Pacific Ocean) side of the gate facility, the debris rack spans all three tide gates. Two of the gates are slide gates, and one is a flap gate. On the Ballona Lagoon side of the facility, only the flap gate is protected by a debris rack, and the two bays leading to the slide gates are unprotected, open culverts. When the facility was observed, on an outgoing tide, substantial flow was traveling out of the lagoon through the flap gate, and there was a drop at the interior debris rack between the water surface in the lagoon and that in the Marina Channel. In addition to the 2-inch grid, depending on gate operation, fish movement through this facility could also be limited by water velocities, water surface drops (or jump heights), and passage through the flap gate, if that is the gate primarily used.

South of the Project, Ballona Lagoon ranges in width between 95 and 275-feet, and is about 4,000-feet in length, and includes approximately 14.5 acres of open water habitat and approximately 1.5 acre of intertidal habitat (State of California, 2007). Grand Canal, at the Project and to the north, is a narrower channel that, due to its uniform width and banks, appears

artificially excavated. It links the Venice Canals with the Pacific Ocean via Ballona Lagoon, and then the Marina del Rey Channel. The lagoon and canal floors are composed of soft mud and varying amounts of sand and gravel (Jones, 2012). In the Ballona Lagoon-Grand Canal transition, the waterway substrate is characterized by sandy silts mixed with clay (State of California, 2007). The Grand Canal channel itself is 48 feet (14.6 meters) in width at its floor, and between 0 and 3.5 feet (1.7 meters) in depth (Jones, 2012).

The Ballona Lagoon ecosystem supports narrow bands of coastal strand and coastal salt marsh vegetation communities and intertidal and subtidal soft-bottom communities. Residential development with heavy nearby commercial activity is the predominant land use type adjacent to the Grand Canal and Ballona Lagoon. The wetlands and tidal ecosystem of Ballona Lagoon is a valuable stopover for migratory birds, and possesses potential rearing grounds for smaller fish.

Regulatory Setting

Another review of the various federal, state, regional, and local government regulatory requirements was conducted to identify regulations that provide protection to essential fish habitats and their biological resources. This section summarizes the various regulatory requirements that are relevant to the Proposed VAPP Project, in including the 128 Hurricane St. lot.

Federal Laws

Endangered Species Act of 1973 (16 U.S.C. Sections 1531 to 1543)

The Endangered Species Act of *1973* (ESA) and subsequent amendments provide guidance for the conservation of federally listed species and the habitats upon which they depend.

Interagency Consultation and Biological Assessments (ESA Section 7)

ESA Section 7 provides a means for authorizing take of threatened or endangered species by federal agencies and applies to actions that are conducted, permitted, or funded by a federal agency. It requires federal agencies to consult with the U.S. Fish and Wildlife Service (USFWS) or National Marine Fisheries Service (NMFS), as appropriate, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of threatened or endangered species or result in the destruction or adverse modification of critical habitat for these species. If a Proposed Project "may affect" a listed species or destroy or modify critical habitat, the lead agency is required to prepare a biological assessment evaluating the nature and severity of the potential effect.

Section 404 of the Clean Water Act of 1977 (33 U.S.C. Sections 1251 to 1376)

The Clean Water Act of 1977 (CWA) serves as the primary federal law protecting the quality of the nation's surface waters, including wetlands. Under Section 404, the U.S. Army Corps of Engineers (USACE) and the U.S. Environmental Protection Agency (EPA) regulate the discharge of dredged and fill materials into the waters of the United States. These waters are

primarily defined as navigable waterways or water features (including wetlands) that have a significant nexus to navigable waters. Project sponsors must obtain authorization from USACE for all discharges of dredged or fill materials into waters of the United States before proceeding with a proposed activity. Individual Section 404 permits may only be issued for a least environmentally damaging practicable alternative. Compliance with CWA Section 404 requires compliance with several other environmental laws and regulations. The USACE cannot issue an individual permit or verify the use of a general permit until the requirements of National Environmental Policy Act of 1969 (NEPA), ESA, the Coastal Zone Management Act (CZMA) and the National Historic Preservation Act (NHPA) have been met. Additionally, no permit can be issued or verified until a water quality certification, or waiver of certification, has been issued pursuant to CWA Section 401.

State Laws

California Coastal Act (Public Resource Code Division 20, Section 30000 et seq.)

The California Coastal Act is the state's Coastal Zone Management Program, as referenced under the CZMA, above. The California Coastal Act defines the "coastal zone" of California as extending generally 1,000 feet (305 meters) inland from the coast and 3 miles (5 kilometers) seaward. In certain areas, the inland boundary can extend up to 5 miles (8 kilometers). The California Coastal Act requires a Coastal Development Permit (CDP) from either the Coastal Commission or the City Engineer, as a local permit issuing agency. For this project, the work within the Grand Canal will require a state CDP, while work outside of the canal will require both state and local CDPs.

Porter-Cologne Water Quality Control Act (California Water Code Division 7)

The Porter-Cologne Water Quality Control Act (Porter-Cologne) established nine Regional Water Quality Control Boards (RWQCBs). These boards oversee water quality on a day-to-day basis at the local and/or regional level, and prepare and update water quality control plans. The RWQCBs also issue Section 401 water quality certifications under the federal Clean Water Act. Porter-Cologne also grants ultimate authority to the State Water Resources Control Board (SWRCB) over state water rights and water quality policy.

Additional Biological Reports

Essential Fish Habitat Assessment

Essential fish habitat, also known as EFH, includes all types of aquatic habitat and, in practice, specifies where a certain fish species lives and reproduces. Congress established the EFH mandate in 1996 to improve the nation's main fisheries law—the Magnuson-Stevens Fishery Conservation and Management Act—highlighting the importance of healthy habitat for commercial and recreational fisheries.

Essential fish habitat covers federally managed fish and invertebrates, but it does not apply to strictly freshwater species. These areas provide the habitats that shelter and sustain marine fish. Depending on the fish species, EFH could include the deep sea, coral reefs, kelp forests,

bays, wetlands, and rivers that connect to the ocean. Essential fish habitat includes all types of aquatic habitat where fish spawn, breed, feed, or grow to maturity (NOAA Fisheries, 2019).

Ballona Lagoon and the Grand Canal has been newly considered an Essential Fish Habitat for *Pacific Coast Groundfish and Coastal Pelagic* Species (Appendix C).

The extent of EFH for these commercially important species is designated in the Pacific Coast Groundfish Fishery Management Plan (FMP) and the Coastal Pelagic Species FMP, and defined as follows:

1. The overall extent of Pacific Coast Groundfish EFH is identified as all waters and substrate within the following areas:
    a. Depths less than or equal to 1,914 fathoms (3,500 meters) to MHHW or the upriver extent of saltwater intrusion, defined as upstream and landward to where ocean-derived salts measure less than 0.5 part per thousand during the period of average annual low flow.
    b. Seamounts in depths greater than 3,500 meters as mapped in the EFH assessment GIS.

Areas designated as Habitat Areas of Particular Concern (HAPCs) not already identified by the above criteria.

2. The overall extent of Coastal Pelagic Species EFH is tied to sea surface water temperatures within the Economic Exclusion Zone (EEZ) of U.S. Waters. The east-west geographic boundary of EFH for each individual coastal pelagic finfish and market squid is defined to be all marine and estuarine waters from the shoreline along the coasts of California, Oregon, and Washington offshore to the limits of the EEZ, and above the thermocline where sea surface temperatures range between 50°F to 79°F (10°C to 26°C).

Potential EFH in the project study area is shown in *Figure 2 – Study Area Map*. The extent of the project study area was determined in part based on the linear distance over which in-water construction noise may propagate. Grand Canal and Ballona Lagoon are tidal, predominantly saline, and may be accessible to some life stages of species managed under the Pacific Coast Groundfish and Coastal Pelagic FMPs. The potential EFH in the project study area includes all areas below MHHW, and is characterized as having predominantly sandy and silty substrates, although in some areas hardened, manmade surfaces are present. Ballona Lagoon and Grand Canal do not have any substantial inputs from freshwater tributaries, except urban runoff during storms. Water in the system is predominantly marine in origin, which presumably maintains the salinity at an average level that is close to seawater.

During the site visit, there were abundant California horn snails (*Cerithidea californica*), diverse foraging shorebirds and ducks, and disturbances at the water surface likely to have been made by fishes, which may be indicators of productive benthic habitat in Ballona Lagoon and Grand Canal. We did not observe eelgrass or other submerged aquatic vegetation. These species may use the estuarine waters of the Action Area during at least one life stage; engaging in rearing, foraging, and growth in these tidal channels. Estuarine areas are also considered to be HAPCs, as identified in EFH for Pacific Coast Groundfish (Pacific Fishery Management Council, 2016).

Environmental Impacts

Methodology

Potential significant impacts associated with the Proposed Project were identified from the *Biological Resources and Habitat Assessment* and *Jurisdictional Delineation Report,* Appendix F. These reports presented findings, conclusions, and recommendations concerning development of the Project Site that were based on an analysis of the existing biological resources and jurisdictional areas contained within the study area and which could be affected by the Proposed Project during construction and operation. The VAPP Habitat Mitigation and Monitoring Plan (HMMP) was prepared in anticipation of permit requirements of the U.S. Army Corps of Engineers (USACE), Regional WaterQuality Control Board (RWQCB), and California Coastal Commission (CCC). Once permits have been issued, this HMMP will be updated in accordance with applicable permit conditions.

The biological resources and jurisdictional delineation were conducted to provide recommendations for design and construction of the VAPP at the Project Site. Thus, the recommendations are incorporated into project design and construction plans and specifications, and address biological resources and jurisdictional issues, including special-status plants and wildlife, threatened and endangered plants and wildlife, sensitive plant communities, essential fish habitat, non-listed special-status animals, nesting birds, raptor foraging, wildlife corridors, environmentally sensitive habitat areas, and jurisdictional areas, including waters of the United States and California and wetlands.

Direct impacts occur when sensitive biological resources are altered through project implementation, such as through vegetation removal, habitat modifications, and injury or death of wildlife species. Indirect impacts may occur from elevated levels of noise or lighting, changes in surface water hydrology, or increased erosion or sedimentation. These types of indirect impacts can affect vegetation communities or their potential use by sensitive wildlife species.

Checklist Questions:

The criteria used to determine the significance of an impact on biological resources are based on *L.A. CEQA Thresholds Guide*. A project would normally have a significant impact on biological resources if it could result in:

BIO-1 Would the project have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

BIO-2 Would the project have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Game or U.S. Fish and Wildlife Service?

BIO-3 Would the project 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?

Construction Impact Analysis

The analysis below describes the temporary and permanent short-term and long-term direct and indirect impacts on the newly designated essential fish habitat area as a result of the Proposed Project during construction.

BIO-1 Would the project result in the loss of individuals, or the reduction of existing habitat, of a state or federal listed endangered, threatened, rare, protected, or candidate species, or a Species of Special Concern or federally listed critical habitat?

BIO-2 Would the project result in the loss of individuals or the reduction of existing habitat of a locally designated species or a reduction in a locally designated natural habitat or plant community?

BIO-3 Interference with habitat such that normal species behaviors are disturbed (e.g., from the introduction of noise, light) to a degree that may diminish the chances for long-term survival of a sensitive species.

The analyses below address additional potential impacts that could occur to biological resources and the newly designated essential fish habitat during construction related to the loss or reduction of critical habitat, federally designated natural habitat, and sensitive species.

Potential Effects to Essential Fish Habitat

The Proposed Project, with respect to potential effects to EFH, can be described in four phases: in-water cofferdam installation; dewatering and excavation in the cofferdam; installation of below-grade structures; and cofferdam removal and site restoration. The VAPP Habitat Mitigation and Monitoring Plan (HMMP) will address any direct or indirect impacts to biological resources in the Ballona Lagoon and the Grand Canal. The purpose of the VAPP HMMP is to outline the implementation, maintenance, monitoring and management of waters and habitats provided as mitigation to offset temporary construction impacts associated with the project. Construction activities in upland areas would not have appreciable effects on EFH because implementation of the SWPPP would protect EFH from contaminated runoff or siltation.

Cofferdam Installation

Installation of the cofferdam would produce the majority of the Project effects on EFH, although said effects are mostly minimal and temporary. Activities expected to affect EFH during the cofferdam installation are pile driving of soldier piles and sheet piles into the substrate, and dewatering of the area in the cofferdam. The footprint of the cofferdam contains 0.92 acre of tidal waters and 0.012 acre of tidal wetland. Pile driving would disturb the sediment in Grand Canal, increase turbidity; and produce underwater noise, temporarily affecting EFH outside of the cofferdam area. These effects are expected to occur for less than 1 week. This area is approximately 3.8 acres in size.

Increased turbidity from pile placement may temporarily impact fish foraging and reduce algal photosynthesis, but suspended particulates would settle soon after completion of the cofferdam. Water quality monitoring would be conducted during construction to maintain turbidity within parameters established by the Regional Water Quality Control Board (RWQCB) in their Section 401 Certification. Localized turbidity may temporarily deter fish from foraging in the project study area *(Figure 2 –Study Area Map)* until the cessation of cofferdam construction.

Piles for cofferdam construction would be installed using a vibratory driver or hydraulic push methods. Hydraulic push methods do not generate intense underwater noise, vibratory drivers produce less intense underwater noise than impact drivers, and noise from vibratory drivers are not expected to cause barotrauma to fish (CALTRANS, 2015). However, underwater noise from pile driving may still cause temporary hearing shifts or behavioral changes in fish. During vibratory pile driving, the areas of Grand Canal and Ballona Lagoon that are exposed to pile driving noise may be used by fish at a lower rate, or abandoned altogether as fish move away from the noise source. When considering underwater noise impacts, the areas affected are typically limited to the areas where the sound can propagate in a straight line from the source. Because there is a corner in the waterway where the Grand Canal meets Ballona Lagoon, underwater noise would not effectively propagate much south of the pile-driving location. In Grand Canal, a series of slight bends would limit noise propagation to the area extending approximately 1,600 feet (500 meters) to the north. Following the completion of pile-driving activity, fish are expected to resume use of the area affected by pile-driving noise emissions.

Minor hydrological changes to the constricted channel outside of the cofferdam are expected. With the width of the Grand Canal reduced by the cofferdam, flow velocity in the remaining channel width is likely to increase. Should the velocity increase enough, the eastern bank may experience cutting and erosion, causing sediment deposition into the canal. However, the tide gate at the mouth of Ballona Lagoon restricts tidal flows through the Action Area; and based on observations made during the site visit, Grand Canal and Ballona Lagoon typically do not flow fast enough to re-suspend sediments, even with some constriction of the channel. Upstream and downstream flows in the Canal would pass through the half of the waterway's width not obstructed by the cofferdam, and therefore still allow the movement of fish, transport of nutrients, and persistence of hydrological parameters, such as temperature, salinity, and tidal flows.

Dewatering and Excavation

Following completion of the cofferdam, any impounded water would be pumped out, and the substrate in the cofferdam excavated. During this process, any fish or invertebrates in the cofferdam area would likely be rescued. Water pumped from the cofferdam impoundment would most likely be discharged into the sanitary sewer system as permitted though an industrial waste permit from the City. If there are any discharges to surface waters, they would occur in accordance with the requirements of RWQCB permitting, and therefore would not adversely affect EFH.

Dewatering and excavation would cause benthic macroinvertebrate losses in the cofferdam (0.092 acre of tidal waters and 0.012 acre of tidal wetland), but because the area is very small in relation to the overall tidal waters of Grand Canal and Ballona Lagoon (approximately 30 acres), this loss would not significantly affect forage for Pacific Coast

Groundfish or Coastal Pelagic Species. Excavation into the EFH substrate would further cause macroinvertebrate mortality; however, these impacts, like those of the dewatering, would be temporary.

Installation of Below Grade Structures

Once the excavated pit is dewatered, concrete grout may be jetted into the soil at the bottom of the pit to reduce groundwater percolation and to create a stable surface capable of supporting the new diversion structures, if needed. The new diversion structure would then be installed, along with the 66-inch connector, and the new diversion structure would be tied into the existing CIS. Because these concrete structures would be buried under 18 feet or more of sediment, they would have no direct interaction with the waters of Grand Canal or Ballona Lagoon, and would not affect water quality or EFH.

Cofferdam Removal and Site Restoration

Prior to removal of the cofferdam, stockpiled material would be returned to the excavation. During the removal of the cofferdam, during which the piles are expected to be direct-pulled with a crane from upland areas and surface flows restored to the dewatered area, some resuspension of sediment and temporary increases in turbidity may occur. The magnitude of these effects is expected to be no greater than those discussed for cofferdam installation, and would be more limited in duration, because removal of the cofferdam would only take 1 or 2 days.

Following removal of the cofferdam, the benthic macroinvertebrate community prey base would recolonize and stabilize in the affected area. Although this prey base would take time to recolonize, the area is very small, and prey base in the remainder of Grand Canal and Ballona Lagoon would continue to support EFH. Because the completed diversion structure would not protrude above the grade of the canal, and would be deep enough to avoid any long-term change to the substrate, there is no permanent alteration of EFH associated with the Proposed Project.

Restoration of the project study area would be supported by revegetation and re-contouring the grade of the western bank. Therefore, the Proposed Project's minimal lasting effects would be ameliorated by natural and facilitated restoration.

The project would not result in the loss of individuals, or the reduction of existing habitat, of a state or federal listed endangered, threatened, rare, protected, or candidate species, or a Species of Special Concern or federally listed critical habitat. Also, the project would not result in the loss of individuals or the reduction of existing habitat of a locally designated species or a reduction in a locally designated natural habitat or plant community. There will be no interference with essential fish habitat such that normal species behaviors are disturbed from the introduction of temporary construction noise and vibration to a degree that may diminish the chances for long-term survival of a sensitive species. Therefore, with the implementation of previously approved mitigation measures, including the Project's Habitat Management and Mitigation Plan (HMMP), impacts associated with biological resources and to jurisdictional areas during construction would be **less than significant.**

Operational Impacts

There are no operational effects to estuarine waters or EFH expected. The new wastewater facility is a closed system that would be better suited to handle increased wastewater surges than the current system. Therefore, its installation represents the most responsible measure to prevent future wastewater discharges into Grand Canal and Ballona Lagoon. Therefore; **no impacts** associated with biological resources would occur during operation; no mitigation is required.

6.2 Hazards and Hazardous Materials

This section describes the applicable laws and regulations for hazards and hazardous materials, and assesses how the construction and operation of the 128 Hurricane St. lot (the Hurricane St. lot) would alter them.

This chapter describes the environmental and regulatory setting for hazards and hazardous materials and characterizes new findings for the oil well abandonment implementation within the 128 Hurricane St. lot. *(see Figure 4 – 128 Hurricane St. Lot Site Plan)*

A hazardous material is any substance that, because of its quantity, concentration, or physical or chemical properties, may pose a hazard to human health and the environment. Under *California Code of Regulations* (CCR) Title 22, the term "hazardous substance" refers to both hazardous materials and hazardous wastes. Both of these are classified according to four properties: (1) toxicity, (2) ignitability, (3) corrosiveness, and (4) reactivity (CCR Title 22, Chapter 11). A hazardous material is defined in CCR Title 22 as:

> [a] substance or combination of substances which, because of its quantity, concentration, or physical, chemical or infectious characteristics, may either (1) cause, or significantly contribute to, an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness; or (2) pose a substantial present or potential hazard to human health or environment when improperly treated, stored, transported or disposed of or otherwise managed (CCR Title 22 Section 66260.10).

Hazardous materials in various forms can cause death, serious injury, long-lasting health effects, and damage to buildings, homes, and other property. Hazards to human health and the environment can occur during production, storage, transportation, use, or disposal of hazardous materials.

Hazardous materials information in this chapter is based in part on the *Preliminary Geologic Hazards Evaluation City of Los Angeles Los Angeles, California*, prepared by Ninyo & Moore in February of 2018.

Environmental Setting

The 128 Hurricane Street parcel is located on the alluvial plain of Ballona Creek, at the northwest edge of the Peninsular Ranges Geomorphic Province of California. The Hurricane St. lot has not been developed with structures from at least 1928. Surrounding the Hurricane Street. Lot, the area has been developed with various oil production facilities from at least 1938

through 1952, and with residential properties from at least 1963 onward. The adjacent, Venice Pumping Plant was constructed in 1963 (Ninyo & Moore, 2016)

The upper 2-feet of soil beneath the Hurricane St. lot appears to be fill material consisting of light brown silty and sand. Underlying the fill material, soil is predominantly brown to gray fine sand and silty sand from the surface to maximum depth explored, which was 20 feet below ground surface (bgs). A sandy clay layer was encountered in some borings, the variable depth between 3.5 and 4 feet bgs. Concrete debris was also encountered in some of the borings.

The Project Site is within the Santa Monica Sub-basin of the Coastal Plain of Los Angeles Groundwater Basin. Groundwater was encountered at approximately 5 feet bgs. Reportedly, groundwater is expected to flow toward the southwest, to the Pacific Ocean (McAlister GeoScience, 2016). The site lies to the west of the hydrologic barrier, the water is not considered potable.

A former oil production well on site is referred to as of the *McDonald 2* (API 03713842) well, according to the CalGEM/DOGGR well finder website. The exact location of the well was recently discerned on the northwest portion of the lot. It has a total depth of 5,860 feet bgs (*Figure 8 – Amended Proposed Excavation Area)*. The *McDonald 2* oil well was reported abandoned in 1932. A permit to re-abandon the well was issued in 2002 and renewed annually from 2004 to 2008.

The Project Site is located in a designated methane zone and is within the Playa del Rey Oilfield. (City of Los Angeles, 2020) The nearby area has had oil pipelines, storage tanks and vaults. According to the CalGEM/DOGGR well finder website, numerous other historical oil production wells are also located within the Site vicinity.

Regulatory Setting

Hazardous materials are substances that have the potential to cause a health hazard or harm to the environment with improper management or disposal. Hazardous substances are typically toxic, corrosive, ignitable, explosive, or chemically reactive, and may occur at a given location naturally, as a result of recent industrial or construction activities, or from historical uses.

Federal, state, and local laws regulate the use and management of hazardous or potentially hazardous or explosive substances. Hazardous substances are defined in the Federal Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 101(14), and also in the California Code of Regulations (CCR), Title 22, Chapter 11, Article 2, Section 66261. Hazardous waste is the by-product of processes and/or activities that can pose a substantial or potential hazard to human health or the environment from improper management or disposal.

For this analysis, soil that is excavated from a site containing hazardous materials would be considered a hazardous waste if it exceeded specific CCR Title 22 criteria. Remediation (cleanup and safe removal/disposal) of hazardous wastes found at a site is required if excavation of these materials is performed; it may also be required if certain other activities are proposed. Even if soil or groundwater at a contaminated site does not have the characteristics

required to be defined as hazardous wastes, remediation of the site is subject to jurisdictional authority. Cleanup requirements are determined on a case-by-case basis by the agency taking lead jurisdiction.

Federal

Federal Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of 1976

The Federal Toxic Substances Control Act (1976) and the Resource Conservation and Recovery Act of 1976 (RCRA) established a program administered by the U.S. Environmental Protection Agency (EPA) for the regulation of the generation, transportation, treatment, storage, and disposal of hazardous waste. Hazardous waste in California is regulated primarily under the authority of the RCRA (United States Code [USC] Title 42, Section 6901 et seq.). RCRA was amended in 1984 by the Hazardous and Solid Waste Act (HSWA), which affirmed and extended the "cradle to grave" system of regulating hazardous wastes. The use of certain techniques for the disposal of some hazardous wastes was specifically prohibited by HSWA.

Comprehensive Environmental Response, Compensation, and Liability Act

CERCLA, commonly known as Superfund, was enacted by Congress on December 11, 1980. This law provided broad federal authority to respond directly to releases or threatened releases of hazardous substances that may endanger public health or the environment. CERCLA established requirements concerning closed and abandoned hazardous waste sites, provided for liability of persons responsible for releases of hazardous waste at these sites, and established a trust fund to provide for cleanup when no responsible party could be identified. CERCLA also enabled the revision of the National Contingency Plan (NCP). The NCP provided the guidelines and procedures needed to respond to releases and threatened releases of hazardous substances, pollutants, or contaminants. The NCP also established the National Priorities List (NPL). CERCLA was amended by the Superfund Amendments and Reauthorization Act (SARA) on October 17, 1986.

The Emergency Planning and Community-Right-to-Know Act

The Emergency Planning and Community Right-to-Know Act (EPCRA) of 1986 was created to help communities plan for chemical emergencies and to respond to concerns regarding environmental and safety hazards resulting from the storage and handling of toxic chemicals. EPCRA requires the reporting of storage, use, and releases of hazardous substances to the federal, state, and local governments.

Department of Transportation Hazardous Materials Regulations (49 CFR 100–185)

U.S. Department of Transportation (DOT) Hazardous Materials Regulations cover all aspects of hazardous materials packaging, handling, and transportation such as Parts 107 (Hazard Materials Program), 130 (Oil Spill Prevention and Response), 172 (Emergency Response),

173 (Packaging Requirements), 177 (Highway Transportation), 178 (Packaging Specifications), and 180 (Packaging Maintenance). Enforcement of these DOT regulations is shared by administrations under delegations from the Secretary of the DOT including the Federal Highway Administration that enforces all regulations pertaining to motor carriers.

State

California Environmental Protection Agency

The California Environmental Protection Agency (CalEPA) was created in 1991. It unified California's environmental authority in a single cabinet-level agency and brought the California Air Resources Board, State Water Resources Control Board (SWRCB), RWQCB, CalRecycle, Department of Toxic Substances Control (DTSC), Office of Environmental Health Hazard Assessment, and Department of Pesticide Regulation under one agency. These agencies were placed under the CalEPA "umbrella" for the protection of human health and the environment to ensure the coordinated deployment of state resources. Their mission is to restore, protect, and enhance the environment and ensure public health, environmental quality, and economic vitality.

Department of Toxic Substances Control

DTSC, a department of CalEPA, is the primary agency in California for regulating hazardous waste, cleaning up existing contamination, and finding ways to reduce the amount of hazardous waste produced in California. DTSC regulates hazardous waste primarily under the authority of the federal RCRA and the California Health and Safety Code (primarily Division 20, Chapters 6.5 through 10.6, and CCR Title 22, Division 4.5). Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning. Title 22, Article 3 highlights the procedures of identifying hazardous waste into these 4 categories: ignitable, corrosive, reactive, and toxic. Article 5 categorizes hazardous waste into acutely hazardous waste, extremely hazardous waste, non-RCRA hazardous waste, RCRA hazardous waste, special waste, and universal waste. Title 22 of the CCR also underscores the guidelines for managing hazardous waste, which includes storing, housekeeping, record keeping, and inspecting waste (State of Calfornia, 2002)

The DTSC Environmental Health Standards for the Management of Hazardous Waste is included in CCR, Title 22, Division 4.5. All hazardous waste generators must comply with the guidelines, which are enforced by DTSC, for identifying, labeling, accumulating, preparing, and preventing outcomes related to hazardous waste.

Cortese List

Government Code 65962.5 requires CalEPA to develop a hazardous waste and substances site list (Cortese List), which includes: hazardous waste sites according to DTSC and the Health and Safety Code; contaminated public drinking water wells sites listed by the State Department of Health Services; Underground Storage Tank (UST) leaks, solid waste facilities, and hazardous waste sites listed by the SWRCB; and other sites as designated by various other state and local governments. Section 6592.5 requires that the Cortese list be at least annually updated. The Cortese List complies with the CEQA requirements in providing information about the location of hazardous materials release sites.

Porter-Cologne Water Quality Control Act

The Porter-Cologne Water Quality Control Act restricts disposal of wastes or any other activity that may degrade waters of the state. The Act requires cleanup of wastes that are below hazardous concentrations but could impact ground and surface water quality (Section 13002). The Act established nine Region and State Water Boards, which are primarily responsible for protecting water quality in California. The Regional Water Boards regulate discharges by issuing permits through NPDES for waste discharge requirements for non-point source discharges. Anyone discharging materials or proposing to discharge materials that could affect water quality must file a report of waste discharge, unless the discharge would be into a community sewer system (California Water Board, 2014).

California Hazardous Waste Control Law

The California Hazardous Waste Control Law (HWCL) is administered by the California Environmental Protection Agency (CAL/EPA) to regulate hazardous wastes. The HWCL lists 791 chemicals and about 300 common materials that may be hazardous.

The HWCL also:

- Establishes criteria for identifying, packaging and labeling hazardous wastes;
- Prescribes management controls;
- Establishes permit requirements for treatment, storage, disposal and transportation; and
- Identifies some wastes that cannot be disposed of in landfills.

Hazardous substances are defined by state and federal regulations to protect public health and the environment. Hazardous wastes are hazardous substances that no longer have a practical use. Hazardous materials have certain chemical, physical, or infectious properties that cause them to be considered hazardous. According to CCR, Title 22, Chapter 11, Article 3, substances having a characteristic of toxicity, ignitability, corrosivity, or reactivity are considered to be hazardous. Examples of hazardous wastes include material that has been abandoned, discarded, spilled, contaminated, or is being stored prior to proper disposal. (State of California, 2016)

Toxic substances may cause short-term or long-lasting health effects, ranging from temporary effects to permanent disability, or death. For example, toxic substances can cause eye or skin irritation, disorientation, headache, nausea, allergic reactions, acute poisoning, chronic illness, or other adverse health effects if human exposure exceeds certain levels (the level depends on the substance involved). Carcinogens (substances known to cause cancer) are a special class of toxic substance. Examples of toxic substances include most heavy metals, pesticides, and benzene (a carcinogenic component of gasoline). Ignitable substances are hazardous because of their flammable properties. Gasoline, hexane, and natural gas are examples of ignitable substances. Corrosive substances are chemically active and can damage other materials or cause severe burns upon contact. Examples of corrosive substances include strong acids and bases such as sulfuric (battery) acid or lye. Reactive substances may cause explosions or generate gases or fumes. Explosives, pressurized canisters, and pure sodium metal (reacts violently with water) are examples of reactive materials.

Other types of hazardous materials include radioactive and biohazardous materials. Radioactive materials and wastes contain radioisotopes, which are atoms with unstable nuclei that emit ionizing radiation to increase their stability. Radioactive waste mixed with chemical hazardous wastes is referred to as "mixed wastes." Biohazardous materials and wastes include anything derived from living organisms. They may be contaminated with disease-causing agents, such as bacteria or viruses.

Environmental Health Standards for the Management of Hazardous Waste (22 CCR Div. 4.5, Section 66001 et seq.)

These standards establish requirements for the management and disposal of hazardous waste in accordance with the provisions of the California Hazardous Waste Control Act and Federal RCRA.

Unified Hazardous Waste and Hazardous Materials Management Regulatory Program

Senate Bill 1082 (1993) established the Unified Hazardous Waste and Hazardous Materials Management Regulatory Program (Unified Program). The Unified Program consolidates, coordinates, and makes consistent the following hazardous materials and hazardous waste program elements:

- Hazardous Waste Generation, Including On-Site Treatment under Tiered Permitting – This program regulates businesses that generate any amount of a hazardous waste. Proper handling, recycling, treating, storing, and disposing of hazardous waste are key elements to this program. Tiered permitting regulates the onsite treatment of hazardous waste.
- Aboveground Petroleum Storage Tank (APST) Spill Prevention, Control, and Countermeasure Planning (SPCCP) – Facilities with a single tank or cumulative aboveground storage capacities of 1,320 gallons or greater of petroleum-based liquid product (gasoline, diesel, lubricants, etc.) must develop an SPCC plan. An SPCC plan must be prepared in accordance with the oil pollution prevention guidelines in 40 CFR 112. This plan must include procedures, methods, and equipment at the facility to prevent discharges of petroleum from reaching navigable waters. A Registered Professional Engineer must certify an SPCC plan, and a complete copy of the plan must be maintained on site.
- Underground Storage Tanks (USTs) – This program regulates the construction, operation, repair, and removal of UST systems used to store hazardous materials and/or waste.
- California Accidental Release Prevention Program (CalARP) – This program requires any business that handles more than threshold quantities of an extremely hazardous substance to develop a Risk Management Plan (RMP). The RMP is implemented by the business to prevent or mitigate releases of regulated substances that could have offsite consequences through hazard identification, planning, source reduction, maintenance, training, and engineering controls.
- Hazardous Material Release Response Plans and Inventories (Business Plans) – Hazardous Materials Business Plans HMBPs contain basic information on the location, type, quantity, and health risks of hazardous materials and/or waste. Each business must prepare

a HMBP if that business uses, handles, or stores a hazardous material and/or waste or an extremely hazardous material in quantities greater than or equal to the following:

- 55 gallons for a liquid,
- 500 pounds of a solid,
- 200 cubic feet for any compressed gas, and
- Threshold planning quantities of an extremely hazardous substance.

Uniform Fire Code Hazardous Materials Management Plans and Inventories

Hazardous Materials Management Plans/Hazardous Materials Inventory Statements HMMP/HMIS and the Business Plan provide vital facility chemical and emergency response information to regulators, first responders, and the public with respect to community-right-to-know laws and emergency response preparedness. A fire chief may also require submission of the HMMP/HMIS below the state Business Plan reporting threshold quantity amounts for building occupancy type and fire code permits.

A Certified Unified Program Agency (CUPA) is a county, city, or joint powers agency that is approved and designated by Cal-EPA to implement the Unified Program and responsible for all six program elements of the Unified Program within its jurisdiction. Los Angeles Fire Department is the CUPA for the City.

California Code of Regulations, Title 8—Industrial Relations

Occupational safety standards exist in federal and state laws to minimize worker safety risks from both physical and chemical hazards in the workplace.

The California Occupational Safety and Health Administration (Cal/OSHA) is the primary agency responsible for developing and enforcing standards for safe workplaces and work practices. They assume primary responsibility for worker safety in the handling and use of chemicals in the workplace, as delegated by the federal Occupational Safety and Health Act. Cal/OSHA standards are generally more stringent than federal regulations.

The employer is required to monitor worker exposure to listed hazardous substances and notify workers of exposure (State of California, 2016) The regulations specify requirements for employee training, availability of safety equipment, accident-prevention programs, and hazardous substance exposure warnings. These standards would apply to construction activities.

California Labor Code (Division 5, Parts 1, 6, 7, and 7.5)

The *California Labor Code* is a collection of regulations that include regulation of the workplace to ensure appropriate training on the use and handling of hazardous materials and operation of equipment and machines that use, store, transport, or dispose of hazardous materials. Division 5, Part 1, Chapter 2.5, ensures that employees who are in charge of handling hazardous materials are appropriately trained and informed with respect to the materials they handle.

Division 5, Part 7, ensures that employees who work with volatile flammable liquids are outfitted with appropriate safety gear and clothing.

Regional

SCAQMD Rule 1166, Volatile Organic Compound Emissions from Decontamination of Soil

Rule 1166 was adopted by the SCAQMD on August 5, 1988 and subsequently amended in 1995 and 2001. The rule sets requirements to control the emission of Volatile Organic Compounds (VOC) during the excavating, grading, handling, and/or treating of VOC-contaminated soil. Prior to these activities, an approved mitigation plan must be obtained from SCAQMD.

SCAQMD Rule 1403

The purpose of this rule is to specify work practice requirements to limit asbestos emissions from building demolition and renovation activities, including the removal and associated disturbance of asbestos-containing materials (ACM), such as underground utility pipes, which may be applicable in some instances on the Project site. The requirements for demolition and renovation activities include asbestos surveying, notification, ACM removal procedures and time schedules, ACM handling and clean-up procedures, and storage, disposal, and landfilling requirements for asbestos-containing waste materials (ACWM). All operators are required to maintain records, including waste shipment records, and are required to use appropriate warning labels, signs, and markings. Applicability of this rule, in whole or in part, is applicable to owners and operators of any demolition or renovation activity, and the associated disturbance of asbestos.

Local

City of Los Angeles

City of Los Angeles Fire Code

The Los Angeles City Fire Code prescribes laws for hazardous material storage and handling, and safeguarding of life and property from fire, explosion, panic, or other hazardous conditions may arise in the use of buildings, structures, or other premises. City of Los Angeles Municipal Code Chapter 5, Article 7, City of Los Angeles Fire Department Hazardous Materials Section. (City of Los Angeles, 2017)

The City of Los Angeles Fire Department Hazardous Materials Section is the administrative agent for the California Health and Safety Code, California Code of Regulations related to emergency planning and community right to know laws, and federal SARA Title III. There are three units within this department that process information related to hazardous materials. The Disclosure Unit is responsible for enforcing the disclosure law, which requires all establishments storing, producing, or utilizing hazardous substances to inventory on-site; this includes new businesses, as well as existing businesses. The Business Plan Unit ensures that businesses take the right measures to mitigate any dangers. The Risk Management and Prevention Program (RMPP) Unit is responsible for evaluating RMPP's that businesses have to submit. An

RMPP is intended to reduce risks associated with the handling of acutely hazardous materials and is required of businesses that handle 55 gallons, 500 pounds, or 200 cubic feet or more of such materials.

City of Los Angeles Fire Department Haz Mat Program

The City LAFD provides emergency response and guidance to hazardous materials incidents within the City. The City LAFD Haz Mat Program utilizes a unified approach with allied agencies (i.e. Los Angeles County Fire Department or County LAFD) and many stakeholders to provide preparedness, prevention, response, mitigation and resiliency to hazardous materials emergencies. The City LAFD is an all-hazards response organization, and the Haz Mat Program is designed to address the natural, technological, or purposeful response challenges, including chemical, biological, radiological, nuclear and explosive (CBRNE) threats to our community and national security.

In compliance with California state guidelines, each governmental agency designated by the State of California as a CUPA is authorized to apply statewide standards to each facility within its jurisdiction that treats hazardous waste on site or generates hazardous waste, USTs, or stores hazardous materials. In May of 2008, DTSC delegated corrective action oversight authority under Chapter 6.5 of Division 20 of California Health and Safety Code to implement corrective action under consent agreement at CUPA facilities within its jurisdiction. CUPA's are mandated by the State to establish a single billing statement process for the collection of the fees and surcharges associated with the practices of each of the regulated businesses. The City LAFD is concerned with public safety and the environment as it relates to the management of hazardous materials and hazardous waste.

City LAFD and the Police Department (LAPD) are first responders if a hazardous-materials or a hazardous-waste release incident is reported via 911. They work with many partnering and supportive agencies. A step by step notification, the *Hazardous Materials Incident Contingency Plan* protocol is published by the California Office of Emergency Services (OES). (State of California, 2020). The notification process begins with calling 911 whereby City LAFD is notified of all releases and includes other agency notifications, as necessary. Some of the key partnering and supportive agencies are described further below.

City Department of Public Works, Bureau of Sanitation (LASAN), Watershed Protection Division assists the City LAFD in ensuring that the quality of surface water and the watershed are protected during any hazardous materials incidents and response, including chemical and biological releases, such as biological waste from homeless occupancies.

Other partnering support comes from the County LAFD. In 1991, the responsibility for the Los Angeles County Hazardous Materials Control Program was transferred from the LA County Health Department to Deputy Health Officers at the County LAFD.1 The County LAFD Deputy Health Officers assist the City 1 Guidelines of Director of Health Services and Forester and Fire Warden in Performance of Hazardous Materials Control Program Activities, February 17, 1998, as supplied by Deputy Fire Chief Fernando Florez, County LAFD, Health & Hazardous Materials Division, Emergency Operations Unit, July 12, 2019.

LAFD in matters regarding public health and hazardous materials and waste release per a 1997 Memorandum of Understanding (MOU) between the City LAFD and the County LAFD. Various

CUPA responsibilities are outlined in this MOU; the County LAFD is identified as a CUPA Partnering Agency, in the areas of site mitigation, criminal investigations, and emergency response. (Florez, 2019) In addition, the LA County Public Health Department continues to provide the City with expertise in other areas of public health such as communicable diseases, pathogens, vector and rodent control, severe biological and toxicological threats (e.g., anthrax, etc. (Florez F. , 2019)). The LA County Public Health Department has been "Health Officer" for the City since 1964. In addition, the County LAFD, Health and Hazardous Materials Division provides Tier 2 hazardous waste assessment and mitigation services. (County of Los Angeles Fire Department, 2008)

City of Los Angeles General Plan Safety Element

Goal 1

A city where potential injury, loss of life, property damage and disruption of the social and economic life of the city due to fire, water related hazard, seismic event, geologic conditions or release of hazardous materials disasters is minimized.

Policy 1.1.4

Health/environmental protection. Protect the public and workers from the release of hazardous materials and protect City water supplies and resources from contamination resulting from accidental release or intrusion resulting from a disaster event, including protection of the environment and public from potential health and safety hazards associated with program implementation. (City of Los Angeles, 2020)

City of Los Angeles Emergency Operations Organization and Hazard Mitigation Plan

The Department of Emergency Operations Organization (EOO) within the City is responsible for the City's emergency preparations (planning, training and mitigation), response and recovery operations. The EOO is comprised of all agencies of the City's government and centralizes command and information coordination to enable its unified chain-of-command to operate efficiently and effectively in managing the City's resources.

The 2018 Hazard Mitigation Plan (HMP) is prepared to lessen the vulnerability to disasters and to reduce risks from natural hazards. An HMP serves as a guide for decision makers as they commit City resources to minimize the effects of natural hazards. The HMP integrates with existing planning mechanisms such as building and zoning regulations, long-range planning mechanisms, and environmental planning. The planning process includes conducting a thorough hazard vulnerability analysis, creating community disaster mitigation priorities, and developing subsequent mitigation strategies and projects. (City of Los Angeles, 2020)

Los Angeles City Building Code

Division 71 of the Los Angeles Building Code sets forth regulations for the control of methane intrusion emanating from geologic formations. The methane seepage regulations specify site

testing requirements and methane mitigation standards for all new buildings and paved areas (i.e., 5,000 square feet of paved area within 15 feet of an exterior wall of a commercial, industrial, institutional, or residential building) within designated methane zones or methane buffer zones. (City of Los Angeles, 2020)

Additional Geotechnical Studies

Phase II ESA

In August 2018, a Phase II ESA (Appendix A) which included a limited subsurface soil and groundwater sampling and analysis was conducted. The Phase II ESA report concluded:

- A buried flat concrete structure was observed and a nearby magnetic peak during the geophysical survey. The magnetic peak is believed to be the location of the former oil production well. The concrete feature may require removal and additional investigation and sampling.
- Soil samples exhibited lead and total petroleum hydrocarbons (TPH; primarily weathered diesel and oil fractions). The results indicated that past on-site activities related to oil production may have impacted the Site.
    1. Lead concentrations ranged from 3.4 milligrams per kilogram (mg/kg) (SB-4-5) to 160 mg/kg (SO-2-5).
    2. TPH as diesel (TPH-d) concentrations ranged from 6.4 mg/kg (SO-7-5) to 4,600 mg/kg (SO-9-2.5) TPH as oil (TPH-o) concentrations ranged from 5.0 mg/kg (SO-8-5) to 8,200 mg/kg (SO-9-2.5).
- Multiple shallow soil samples (2 and 4 feet bgs) exceeded commercial and/or residential screening levels for TPH-d and TPH as gasoline (TPH-g).
- Shallow soil samples (2 and 5 feet bgs) in the western portion of the Site exhibited elevated levels of lead that exceeded the commercial screening level, but not the residential screening level.
- Groundwater was encountered between 4 and 6 feet bgs. Groundwater quality is poor and not suited for beneficial uses. All groundwater concentrations were below non-drinking water screening levels.
- Methane was not detected from shallow gas probes,
- Site is classified as a Level I Site Design Level.
- No venting is required for hardscaping, but a passive ventilation system would be required for all future building construction.

Phase II ESA Amendment

In May 2019, an Amendment to Phase II ESA (Appendix B) updated the range of soil that could be tested onsite (AECOM 2018). The City of LA recently proposed the current development plan after the Phase II ESA had been submitted. The Phase II ESA was

amended according to the City of LA's current development plan and was submitted to the City on April 30, 2020. The following recommendations have been amended:

- The extent of the soil excavation and removal was determined by the amount of soil that exceeds residential screening levels due to proposed use as a parking lot and open space area.
- Total soil to be removed is 260 cubic yards (350 tons) as shown in *Table 1 - Excavation Areas and Total Soil Removal*.
- Three areas of excavation were identified and are estimated to produce approximately 160 cubic yards (215 tons) of impacted soil.
- Contingency soil removal due to confirmation sampling in the field is proposed to be 100 cubic yards (135 tons).
- Incomplete records of proper abandonment of the former production well necessitates uncovering the well casing and conducting a leak test under CalGEM supervision.
- Depending on leak testing results, CalGEM could require a complete re-abandonment of the production well or allow development over the well casing.
- A passive ventilation system will not be required due to the Site being developed as a hardscape parking lot less than 5,000 square feet and landscaped open space.

Remediation Action Plan

CalGEM requires the re-abandonment of the oil well, since it is deemed a Recognized Environmental Condition (REC), at the Project Site (Ninyo & Moore, 2016) A Remediation Action Plan (RAP) (Appendix B), dated July 2020, implements a course of action for the 128 Hurricane St. lot to abandon the active oil well, excavate and remove the soil that is contaminated around the oil well, backfill the site with new soil, and then design the proposed parking lot and open space project with Methane Building Standards.

The RAP considers the remediation threshold of this Site to be at the residential screening level. There are five locations that exceed residential screening levels. Soil excavation and removal are the best-selected remedies for remediation of TPH and Title 22 metals contamination considering the size, nature, and level of contamination at the site.

The volume of impacted soil to be removed is estimated to be 160 cubic yards or 215 tons. The total of impacted soil plus contingency to be removed is 260 cubic yard or 350 tons. Total volume and weight of excavated soil is summarized on *Table 1 - Excavation Areas and Total Soil Removal*.

This RAP was submitted to the oversight agencies, including the County of Los Angeles Fire Department-Health Hazardous Materials Division (LACFD-HHMD), The City of LA Fire Department, the California Department of Toxic Substances Control (DTSC), the Los Angeles Regional Water Quality Control Board (LARWQCB), and possibly the California Geologic Energy Management Division (CalGEM), for their review and approval to excavate and dispose of shallow residual hydrocarbon-impacted soil, provide a status update on a former on-site oil production well, and to address the methane issues in the soil vadose zone.

Agencies Notification Records

There are no records on GeoTracker or Envirostar for the Site and therefore there is no specific oversight agencies assigned. The City communicated with relevant regulatory agencies regarding voluntary oversight and additional requirements for the soil removal workplan. The City of LA and LACFD declined voluntary oversight and did not state additional requirements. (State of California, 2020) (State of California, 2020)

The DTSC and LARWQCB require an application for voluntary oversight to be submitted with the RAP. The application is included in Appendix E. Both agencies will review the application to determine which agency will be the lead regulator.

The South Coast Air Quality Management District (SCAQMD) requires implementing Rules 1166 and 1466 for air monitoring during soil removal, which includes site-specific plans, notification prior to field work, and dust control measures. The City of LA Department of Building Safety (LADBS) will not require methane mitigation or permitting for the soil removal work plan.

Oil Well Abandonment

There is an on-site abandoned former oil production well, as shown in *Figure 3 - Prcject Location Map and Figure 5 - VAPP Site Plan*. According to the CalGEM/DOGGR well finder website, a historical oil production well is present on the site (McDonald 2, API 03713842). According to CalGEM, this historical oil production well has a total depth of 5,860 feet bgs. The well went dry and was abandoned in May 1932. The bottom of the hole was plugged at 2,018 feet bgs. Various cement plugs were placed in the hole from 1,996 to 1,929 feet and 729 to 675 feet bgs. All other spaces were filled with heavy mud. The hole had been cemented at deeper depths prior to this final abandonment.

Based on a review of documents, a permit to re-abandon the well was issued in 2002 and renewed annually from 2004 to 2008. CalGEM requires the re-abandonment of the oil well at the Project Site in the Playa Del Rey oil field. (State of California, 2020)

Soil Removal Work Plan

Soil removal and remediation was chosen as the best cleanup alternatives due to the shallow depth and small volume of the lead and TPH-d-impacted residual soil.

The volume of impacted soil to be removed is estimated to be 160 cubic yards or 215 tons. The total of impacted soil plus contingency to be removed is 260 cubic yard or 350 tons. *(Figure 8 - Amended Proposed Excavation Area)* Total volume and weight of excavated soil is summarized on *Table 1 - Excavation Areas and Total Soil Removal*.

Pre-field Activities

Prior to conducting excavation of impacted soils, the following tasks will be completed:

- Schedule site access for required field activities.
- All proposed excavation areas will be clearly marked with white paint as required by Underground Service Alert (USA)
    - USA will be contacted at least 48 hours in advance to identify the location of on-site utilities.

- The location of the utilities from the previous Phase II ESA geophysical survey will be marked.

- Health and Safety Plan (HASP) - update with site-specific plan requirements prior to field activities.
- Los Angeles County Department of Public Works Building Safety Department - obtain a temporary grading permit
- The State of California, Division of Occupational Safety and Health – notify for the Annual T-1 Trench Permit requirement for the excavation/trenching activities
- A Waste Management Plan will be made with the qualified subcontractor to store, transport, and dispose of the hazardous and non-hazardous waste off site.
- SCAQMD – notify for Rule 1166 and 1466 requirement of site-specific plans to be submitted prior to field work implementation

Health and Safety Plan

A Site-specific and Project-specific HASP will be updated to cover field staff health and safety associated with the RAP implementation activities. All field personnel are required to implement the procedures presented in the HASP while conducting on-site field work.

Site Clearing and Debris Removal

Buried concrete and wood debris in excavation areas EA-1 and EA-2 should be broken up and removed using a drill attachment on an excavator. Construction debris will be stockpiled separately. Any vegetation will be cleared as necessary.

Soil Remediation Work Plan

Excavation Methodology

Soil will be excavated using a blade attachment on an excavator to prevent mixing of soils during excavation. Soil will be stockpiled in an area outside of the excavation areas. Each excavation area will have its own soil stockpile. If odor or staining is encountered, the soil will be segregated. During excavation, a Photoionization Detector (PID) will be used to monitor the presence and level of organic vapors from the excavation area.

Each excavation area will be excavated to the proposed extent and depth as summarized in the following sections.

Soil Excavation Work Plan

Each excavation area will be excavated to the proposed extent and depth as summarized in the following sections.

Soil Excavation Activities including Estimate Quantities

There are three proposed Excavation Areas (EA). See *Figure 8 - Amended Proposed Excavation Area* for Excavation Area Site Map. The volume of impacted soil to be removed is in five locations and is estimated to be 160 cubic yards or 215 tons:

Table 1 *Excavation Areas and Total Soil Removal*	
EA-1	60 cy/82 tons
EA-1-1	22 cy/30 tons
EA-2	15 cy/20 tons
EA-2-1	19 cy/25 tons
EA-3	43 cy/58 tons

The total of impacted soil plus contingency to be removed is 260 cubic yard or 350 tons. Total volume and weight of excavated soil is in *Table 1 - Excavation Areas and Total Soil Removal.* Provided below is a rationale for each EA and a proposed extent of excavation. The locations of the proposed excavation areas and historical sample locations are shown on *Figure 8 - Amended Proposed Excavation Area* and *Figure 9 - Proposed Excavation Area and Confirmation Sampling Locations.*

Excavation Area-1 (EA-1)

EA-1 is centered around the location of the abandoned oil production well as shown in *Figures 8 - Amended Proposed Excavation Area*. Part of the excavation may include buried concrete and debris removal. The excavation area was chosen due to the borings exceeding residential screening levels for lead and TPH-d. Approximately 60 cubic yards of soil (82 tons) are estimated to be removed and stockpiled from EA-1.

- Boring SO-2 concentrations exceeded the California residential screening level for lead of 80 mg/kg;
- Borings SO-2 and SO-13 concentrations exceeded California residential screening level of 230 mg/kg for TPH-d.

The depth of the proposed excavation is estimated to be 3.5 feet bgs, The lateral extent of the excavation area was chosen as approximately 5 feet in all directions based on the nearest sampling location. The excavation was extended to the northwestern and southwestern parcel boundaries of the Site to ensure removal of impacted soil. One boring (SO-2) within EA-1 will require greater depth for excavation.

Excavation Sub-Area-1-1 (EA-1-1)

EA-1-1 is a sub-area of EA-1, centered around the location of the abandoned oil production well as shown in *Figure 8 - Amended Proposed Excavation Area*. Part of the excavation may include buried concrete and debris removal. The excavation area was chosen due to the borings exceeding residential screening levels for lead and TPH-d. Approximately 22-cubic yards of soil (30 tons) are estimated to be removed and stockpiled from EA-1-1.

- Boring SO-2 lead concentration of 160 mg/kg at 5 feet bgs exceeds California residential screening level of 80 mg/kg

EA-1-1 requires deeper excavation to 1 foot below the impacted soil sample for a total of 6 feet bgs. Excavation extends to the western site boundary and approximately 5 feet to the northwest, northeast, and southeast.

Excavation Area-2 (EA-2)

EA-2 is centered around soil boring SB-4 and extends to boring SO-4 to connect with EA-1 (*Figure 8 - Amended Proposed Excavation Area*). The excavation area was chosen due to the borings exceeding residential screening levels for lead and TPH-d. Approximately 15 cubic yards of soil (20 tons) are estimated to be removed and stockpiled from EA-2. Part of the excavation may include buried concrete and debris removal.

- Boring SB-4 concentrations exceeding California residential screening level of 230 mg/kg for TPH-d (with a concentration of 670 mg/kg at 3.5 feet bgs).
- Boring SO-4, between SO-1 and SB-4, has detectable concentrations of TPH-d.

EA-2 requires that the depth of the proposed excavation is estimated to be 3.5 feet bgs. The lateral extent was chosen to connect EA-1 and EA-2, because boring SO-4, between SO-1 and SB-4, has detectable concentrations of TPH-d. One boring (SB-4) within EA-2 will require greater depth and is mentioned in the following subsection for Excavation Sub-Area-2-1 (EA-2-1).

Excavation Sub-Area-2-1 (EA-2-1)

EA-2-1 is a Subarea of EA-2. The excavation area was chosen due to the borings exceeding residential screening levels for lead and TPH-d. Approximately 19 cubic yards of soil (25 tons) are estimated to be removed and stockpiled from EA-2-1.

- Boring SB-4's TPH-d concentration of 670 mg/kg at 3.5 feet bgs exceeds the California residential screening level of 230 mg/kg

EA-2-1 requires deeper excavation to 1 foot below the impacted soil sample for a depth of 4.5 feet bgs. The excavation extends 5 feet on either side of the boring.

Excavation Area-3 (EA-3)

EA-3 bounds the southwestern Site boundary and goes just beyond SO-11 to the northwest. The excavation area was chosen due to the borings exceeding residential screening levels for lead and TPH-d. Approximately 43 cubic yards of soil (58 tons) are estimated to be removed and stockpiled from EA-3.

- Boring SO-9 concentration exceeding the California residential lead screening level of 80 mg/kg and
- Borings SB-6, SO-8, SO-9, and SO-11 concentrations exceeding California residential screening level of 230 mg/kg for TPH-d *(Figure 5 - Amended Proposed Excavation Area).*

EA-3 lateral extent is approximately 5 to 10 feet based on the nearest boring. The depth of the proposed excavation is estimated to be 3.5 feet bgs

Excavation Area Confirmation Sampling

Forty-six primary soil confirmation samples will be collected, prior to backfilling, to show that no lead or TPH-d impacted soils remain within the newly excavated areas. Five duplicates will be sampled for a total of 51 soil confirmation samples.

Samples Locations and Depth by Areas

Provided below is a proposed confirmation sampling plan for each excavation area and shown on *Figure 9 - Proposed Excavation Area and Confirmation Sampling Locations.* DTSC recommends sampling on every sidewall and every 50 square feet at the bottom of the excavation.

EA-1

In EA-1, soil samples were collected from all four sidewalls at a depth of approximately 0.5 feet bgs and 13 excavation floor samples per 7-foot by 7-foot grid at a depth of 3.5 feet. The total number of confirmation samples for EA-1 is 18 samples.

EA-1-1

In EA-1-1, soil samples were collected from all four sidewalls at a depth of approximately 0.5 feet bgs and two excavation floor samples per 7-foot by 7-foot grid at a depth of 6 feet. The total number of confirmation samples for EA-1-1 is seven samples.

EA-2

In EA-2, soil samples were collected from all four sidewalls at a depth of approximately 0.5 feet bgs and three excavation floor samples per 7-foot by 7-foot grid at a depth of 3.5 feet. The total number of confirmation samples for EA-2 is eight samples.

EA-2-1

In EA-2-1, soil samples were collected from all four sidewalls at a depth of approximately 0.5 feet bgs and two excavation floor samples per 7-foot by 7-foot grid at a depth of 5 feet. The total number of confirmation samples for EA-2-1 is seven samples.

EA-3

In excavation area EA-3, soil samples were collected from all four sidewalls at a depth of approximately 0.5 feet bgs and six excavation floor samples per -foot 7 by 7-foot grid at a depth of 3.5 feet. The total number of confirmation samples for EA-3 is 11 samples.

Soil Sample Sampling and Analysis

All soil samples will be collected in eight-ounce jars from the bucket of the excavator. Samples will be labeled, capped, and stored on ice and submitted to a California-certified laboratory. All samples will be analyzed for TPH-d by United States Environmental Protection Agency (EPA) Method 8015 (M) and total lead by EPA Method 6010B. The laboratory will hold all samples and analyze for Soluble Threshold Limit Concentration (STLC) if the total lead results exceed 10 times the STLC and for Toxicity Characteristic Leaching Procedure (TCLP) if the total lead results exceeds 20 times the STLC.

The excavated areas will be widened and/or deepened, if the soil confirmation sampling data results show elevated TPH-d and/or lead concentrations exceeding residential screening levels.

Contingency for Proposed Remedial Excavation

A contingency of 100-cubic yards (cy) requiring further excavation is included. This contingency would be approximately 100-cubic yards (135-tons) of additional soil for confirmation sampling and proposed remedial excavation areas. The volume of impacted soil to be removed is estimated to be 160-cubic yards or 215-tons. The total of impacted soil plus contingency to be removed is 260-cubic yard or 350-tons. Total volume and weight of excavated soil is summarized on *Table 1 - Excavation Areas and Total Soil Removal*.

Backfilling

Grading will consist of approved imported fill graded to previous levels according to LA County's temporary guidelines. There will be approximately up to 35 new, additional truck trips.

Soil Profiling and Disposal

All excavated soils will be stockpiled (each EA will have its own soil stockpile) and will be profiled by analyzing a composite sample prior to disposal. A composite waste sample will be analyzed for VOCs by EPA method 8260B, TPH-g, -d, and -o by modified EPA method 8015 (M), and Title 22 Metals by EPA method 6010. If a metal concentration exceeds 10 times the Total Threshold Limit Concentration (TTLC), STLC will be run on the sample. If metal concentrations exceed 20 times the TTLC, and/or STLC exceeds the TTLC, TCLP will be run on the sample. Soil will be segregated if it has an odor or stain.

Upon receiving soil profile analytical results for each stockpile, soil and construction debris will be loaded into trucks and transported and disposed of properly. Soil with acceptable concentrations will be classified and disposed as non-hazardous waste. Non-hazardous waste shall be transported by a licensed hauler to a permitted waste disposal facility. The hazardous waste shall be transported by a licensed hauler to a permitted hazardous waste disposal facility. Prior to leaving the Site, trucks will be inspected to ensure the load is properly covered and clean. A manifest or bill of lading will be prepared for each truck leaving the Site. Due to the small size of all the excavations and the vacancy of the lot, traffic control is not needed for this soil removal work plan.

Methane zone

The Site is in a designated methane zone and is within the Playa del Rey Oilfield. The nearby area has had oil pipelines, storage tanks and vaults. According to the CalGEM/DOGGR well finder website, numerous other historical oil production wells are located in the Hurricane St. lot

vicinity. (State of California, 2020). The project is subject to City of Los Angeles Department of Building and Safety Methane Ordinance. (City of Los Angeles, 2010-2020) Only Methane Building Standards are necessary for the development of the parking lot and landscaping due to the size of the lot (less than 5,000 square feet) and the non-detects of methane in soil vapor probe samples.

Sites with Hazardous Materials Identified in Environmental Databases

There are no records on GeoTracker or Envirostar for the 128 Hurricane St. lot and therefore there is no specific oversight agencies assigned. According to the CalGEM/DOGGR well finder website, the McDonald 2 well, API 03713842, the former oil production well on site, as shown on *Figure 8 – Amended Proposed Excavation Area*.

The McDonald 2 well has a total depth of 5,860 feet below ground surface (bgs) and was abandoned in 1932. A permit to re-abandon the well was issued in 2002 and renewed annually from 2004 to 2008. According to CalGEM/DOGGR, the well has not been re-abandoned, and the permit to re-abandon was cancelled. CalGEM requires the re-abandonment of the oil well, since it, is deemed a Recognized Environmental Condition (REC).

The 128 Hurricane St lot has not been developed with structures from at least 1928, up through the time of this report. The area surrounding the site was developed with oil production facilities from at least 1938 through 1952, and with residential properties from at least 1963 through the time of this report. The Venice Pumping Plant appeared east of the 128 Hurricane St. lot from at least 1963. (Ninyo & Moore, 2016)

Proximity to Schools and Childcare Facilities

The project is located .4 miles south of the closest school Anchorage Street School located on Pacific Ave. The Proposed Project is not within one-quarter mile of an existing or proposed school. Therefore, the project will have no impact to hazards pertaining to the proximity to schools and childcare facilities.

Proximity to Airports and Airstrips

The project is located 7 miles northwest of the Los Angeles International Airport. The project is not located within an airport land use plan or where such a plan has not been adopted, is not within the vicinity of a private airstrip, is not within two miles of a public airport or public use airport, and the project will not result in a safety hazard for people residing or working in the project area. Therefore, the project will have no impact to hazards pertaining to airports or private airstrips.

Emergency Response Plan

The City LAFD is responsible for emergency medical services and fire protection in Los Angeles. In the event of an emergency, the City LAFD along with other City agencies would implement all appropriate emergency procedures outlined in the Hazard Mitigation Plan (City of Los Angeles, 2020) The plan was implemented to reduce risks from disasters to the people, property, economy, and environment within the City.

Wildfire

There are no designated, potential wildfire areas near the Proposed Project site. Therefore, the Proposed Project will not expose people or structures to a significant risk of loss, injury or death involving wildland fires. Therefore, the project will have no impact to wildfire.

Environmental Impacts

Methodology

This section evaluates the potential hazards and hazardous materials impacts that would result from the implementation of the Proposed Project. The hazards and hazardous materials analysis is based on the review of additional technical reports and federal, state, and local agency documents including the City of Los Angeles General Plan Safety Element and the United States Geological Survey and State Department of Conservation seismic hazard zone and hazards reports and maps. (State of California, 2020) (City of Los Angeles, 2020)

Checklist Questions

The *L.A. CEQA Thresholds Guide* (2006) states that, the determination of significance of impacts with respect to hazards (risk of upset/emergency preparedness), health hazards, or hazardous materials, shall be made on a case-by-case basis, considering several factors as follows: In accordance with Appendix G of the CEQA Guidelines, the Proposed Project would have a significant effect on hazards and hazardous materials if it would:

HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

HAZ-2: 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?

HAZ-3: 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?

HAZ-4: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

The analyses below address additional potential impacts that could occur due to hazards and hazardous materials and the oil well abandonment during construction and operation.

Construction Impact Analysis

The construction impacts discussion below identifies and considers applicable regulations for the Proposed Project, thereby taking into account the regulatory framework factor in the analysis where appropriate.

HAZ-1: Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

HAZ-2: 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?

There will be a **less than significant construction impact** and **no impact during operations.**

Oil Well Abandonment

The scope consists the following:

1. Pre-field activities and preparation of site-specific HASP.
2. Obtain permit from CalGEM.
3. Excavate around the well and make it safe for the welder and backhoe to install the wellhead to the casing and install the cellar ring around the well.
4. Install wellhead and cellar ring.
5. Mobilize the rig and all drilling equipment.
6. Remedial Action Plan Including Soil Removal Workplan 128 Hurricane Street, Venice, California
7. Prepared for: City of Los Angeles Bureau of Engineering AECOM 11
8. Install blowout preventer equipment approved by CalGEM.
9. Drill out old cement and cleanout the well to a total re-abandon depth.
10. Cement and perforating well per CalGEM Permit to surface.
11. Demobilize rig and equipment.
12. Remove cellar ring, cut casing to a final depth.
13. Gas test install I.D. plate and backfill with compaction wheel.
14. Schedule all required CalGEM inspections.
15. Dispose of waste generated from wells re-abandonment.
16. Complete reporting.

It takes approximately **four to six months** to perform re-abandonment of an oil production well depending on CalGEM inspections and approval.

Routine Transport, Disposal, and Handling of Hazardous Materials

The Project construction activities would involve the transport, and disposal of hazardous materials that include contaminated soil and debris from an abandoned oil well that are typically used in oil well abandonment remediation projects.

The total of impacted soil plus contingency to be removed is 260 cubic yard or 350 tons. The haul trucks will be no larger than

Soil and construction debris will be loaded into trucks and transported and disposed of properly. Soil with acceptable concentrations will be classified and disposed as non-hazardous waste. Non-hazardous waste shall be transported by a licensed hauler to a permitted waste disposal facility.

The hazardous waste shall be transported by a licensed hauler to a permitted hazardous waste disposal facility. Prior to leaving the Site, trucks will be inspected to ensure the load is properly covered and clean. A manifest or bill of lading will be prepared for each truck leaving the Site.

Due to the small size of all the excavations and the vacancy of the lot, traffic control is not needed for this soil removal work plan.

Buried concrete and wood debris in excavation areas EA-1 and EA-2 will be broken up and removed using a drill attachment on an excavator. Construction debris will be stockpiled separately. Any vegetation will be cleared as necessary.

Such transport and disposal would be compliant with applicable regulations such as those under RCRA, OSHA, DOT, California Labor Code, and the CCR. Moreover, the hazardous materials in the soil and debris are in small amounts, and any spills that may occur would be contained and cleaned according to the Materials Safety Data Sheet in the appropriate manner. The City LAFD is the designated enforcement agency for the City that regulates hazardous materials identified by U.S. EPA and CalEPA. Any potential construction-related hazardous releases would be from contaminated soil and oil and would not include substances listed in 40 CFR 355 Appendix A: Extremely Hazardous Substances and Their Threshold Planning Quantities. Any such releases would be small and localized. Any spills that may occur would be contained and cleaned according to the Materials Safety Data Sheet (MSDS)/Globally Harmonized System (GHS) in the appropriate manner.

Other Releases of Hazardous Materials

During excavation related to the soil removal, soil remediation and oil well abandonment construction under the Project, contaminated soil may be encountered, which may involve a release of hazardous materials into the environment. There is a possibility that contingency soil amounts of up to 100 cubic yards could also be excavated and analyzed for contamination on site. The probability of encountering contamination during construction work is very low based on the prior soil sampling.

Groundwater was encountered at the site at approximately 5 feet bgs. EA-1-1 requires deeper excavation to 1 foot below the impacted soil sample for a total of 6 feet bgs. Excavation extends to the western site boundary and approximately 5 feet to the northwest, northeast, and southeast. If groundwater is encountered, its risk to the environment, including sensitive receptors, would be evaluated and applicable law and regulations would be implemented as required. Handling of hazardous materials and hazardous waste, in the City, for the Project, would follow all applicable federal, state and local regulations.

Specifically, if ground water is encountered as part of deep excavation and construction, then dewatering procedures and permit requirements of the National Pollutant Discharge Elimination System (NPDES) would be applicable. Discharges of treated or untreated groundwater generated from dewatering operations or other applicable wastewater discharges not specifically covered in other general or individual NPDES permits are currently regulated under a regional general permit, General Waste Discharge Requirements for Discharges of Groundwater from Construction and Project Dewatering to Surface Waters in Coastal Watersheds of Los Angeles and Ventura Counties.

Furthermore, in the event of storm water discharges during construction, it would be covered under Phase 1 Los Angeles County Municipal Stormwater NPDES Permit (MS4 Permit) for the City. Section 402 of the CWA establishes the NPDES permit, which is applicable to all discharges to waters of the United States, including stormwater associated with construction activities, industrial operations, municipal drainage systems, and point sources, to protect surface water quality. Under the current Phase 1 MS4 permit for Los Angeles County (Order No. R4-2012-175), MS4 Permit (State of California, 2012). MS4 permits require that cities and counties develop and implement programs and measures, including BMPs, control techniques, system design and engineering methods, and other measures, as appropriate, to reduce the discharge of pollutants in stormwater to the maximum extent practicable (MEP) and achieve water quality standards. The MS4 permit also includes construction requirements for implementation of minimum construction site BMPs, for erosion, sediment, non-stormwater management, and waste management on all construction sites that are less than 1 acre.

Contaminated soils are considered hazardous waste under the California Health and Safety Code. Therefore, BOE Standard Specifications Section 02310, Subsection 3.3, Contaminated Soil would be implemented for routine construction activities. This includes, and is not limited to, a site-specific Health and Safety Plan, OSHA Trainings, and soils testing per the SCAQMD Rule 1166 permit, and required procedures in the CCR, Title 22.

Actions and procedures for handling unknown substances as those required in CCR Title 8, Section 5192, Subsection G, enforced by the California Department of Industrial Relations specifies mandatory regulations to assist employees and employers in certain grave circumstances for the training and use of Level A and Level B of Personal Protective Equipment and gear for worker safety would be applicable.

The type and extent of the contamination will dictate the appropriate response and remediation appropriate for the site and the agencies to be notified. When the presence of VOCs from contaminated soil is suspected, which would generally be detected initially by strong odor per SCAQMD Rule 1166 for petroleum hydrocarbons, SCAQMD would be notified. Under Rule 1166 samples would be taken to measure the level of contamination in the soil before identifying the site as contaminated. If the VOC levels exceed 50 parts per million (ppm), a site mitigation plan, pursuant to Rule 1166, would be prepared, which may include use of soil vapor suppressants, covers over and below the soil, containerization, or removal of the contaminated material. Offsite disposal of hydrocarbon contaminated waste would be pursuant under EPA's Title 40, Environment and Title 49 Transportation Code of Federal Regulation Section 172.704 as enforced by the DOT.

Applicable Existing Law and Hazardous Material Releases

To further support the no impact determination for the Project, potential scenarios are outlined below. These scenarios demonstrate that adequate local response and regulations, understandings and practices are in place to avoid significant impact should a hazardous materials or hazardous waste release potentially occur or be discovered during the continuation of construction activities from the Project.

Scenario A: Immediate Threat to Public Safety and/or Public Health and the Environment **–** Generally, the City LAFD CUPA Section investigates spills of hazardous materials and enforces the cases through either an administrative penalty or through the Office of the City Attorney Environmental Justice Unit. The City LAFD and LAPD are first responders to any hazardous materials or hazardous waste releases that qualify as an immediate threat to public safety or the environment. As stated above, such a scenario that would constitute an immediate threat to public safety or the environment is not anticipated and would be rare, since applicable law and standard design features would address construction-related releases, and any construction-related releases are expected to be small and localized.

Regardless, State law requires spills of hazardous materials from construction-related activities as stated above to be reported to the City LAFD, CUPA, and OES. These first responders are trained to ensure public safety and the proper management of hazardous materials, hazardous waste, and emergency response within the City. In addition, the City's LASAN is an assisting agency, if there is an imminent threat to the watershed or surface water quality from sidewalks that might drain to street, from curb-side to curb side and storm drain runoff ways. Depending on the type of release, partnering responders may also include the County LAFD, U.S. Coast Guard, State Office of Emergency Services, National Response Center, Highway Patrol, etc.). The Deputy Health Officers of the County LAFD, Health and Hazardous Materials Division respond to incidents within the City and support the City LAFD, as a partnering CUPA agency, to fully evaluate imminent threats to public health, including those originating from biological and chemical releases, such as hazardous materials spills, release and abandonment. The notification protocol is detailed in Appendix E1, with a summary of associated scenarios, regulations, and participating response agencies.

Scenario B: Non-Immediate Threat and No Equipment Involved - This scenario can result in several different outcomes. The release case can be referred from the City LAFD, as CUPA lead, to any of the below agencies or directly reported to the below agencies from the responsible party.

- County LAFD, Health and Hazardous Materials Division, Site Mitigation Unit – A regulated business owner, public party or private party that would be responsible for release and/or cleanup, could request assistance. They are typically low to medium risk release, and the agreement for oversight of cleanup is voluntary and reimbursed to the County LAFD. In addition, the County LAFD is tasked with assessment and enforcement for Tier 2 hazardous waste facilities. Tier 2 infers Conditional Authorization for onsite treatment of most hazardous waste streams with only one hazardous characteristic and quantities.
- Los Angeles County Department of Public Health – Assists with pathogenic public health risks, communicable diseases, and/or terrorist public health risks such as anthrax

threats, etc. Other related long-term public health inspection and control programs are also operated by the County within the City.

- LARWQCB, Site Cleanup Unit – If no equipment leaks are associated with the release or the source is unknown under this scenario and there is a perceived threat to surface water or groundwater quality, the case may be referred to this unit of the LARWQCB for cleanup oversite.
- DTSC and U.S. EPA – See Scenario B.

Conclusion

The release, routine transport and disposal of hazardous materials from construction activities from the Project would involve small amounts and be addressed through applicable law. Releases from existing groundwater and soil contamination is not expected, but would be addressed through standard City BOE conditions and applicable law that address the proper handling and disposal of contaminated material. As a result, the Project would not create a significant hazard through the routine transport, use, or disposal of hazardous materials; therefore, there is a **less than significant impact, no further mitigation is required.**

Therefore, the project does not add any impacts.

HAZ-3: *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?*

There will be no impact.

According to the CalGEM/DOGGR well finder website, the *McDonald 2* well, API 03713842, the former oil production well on site, as shown on *Figure 8 - Amended Proposed Excavation Area,* is deemed a Recognized Environmental Condition (REC) (Ninyo & Moore, 2016) CalGEM requires the re-abandonment of the oil well.

The *McDonald 2* well has a total depth of 5,860 feet below ground surface (bgs) and was abandoned in 1932. A permit to re-abandon the well was issued in 2002 and renewed annually from 2004 to 2008. According to CalGEM/DOGGR, the well has not been re-abandoned, and the permit to re-abandon was cancelled.

This project will re-abandon the oil well, which includes the removal and remediation of the lead and TPH-d-impacted residual soil. All necessary Project design Standards and Specifications will be incorporated into project's construction drawings.

The volume of impacted soil to be removed is estimated to be approximately 160-cubic yards or 215 tons. The total of impacted soil plus contingency to be removed is approximately 260-cubic yards or 350 tons. The Project construction would add up to 35 more truck trips over an approximately six-month period. Mitigation measures that have been previously approved in the Draft EIR apply to these additional haul trips. This increase will not introduce any new transportation impacts. Total volume and weight of excavated soil is summarized on *Table 1 - Excavation Areas and Total Soil Removal*.

Conclusion
The Project would not create a significant hazard to the public or the environment because the oil well will be abandoned, and the contaminated soil will be removed and remediated, then replaced with new soil. The site will no longer be a REC.

Releases from existing groundwater and soil contamination is not expected, but would be addressed through standard City BOE conditions and applicable laws that address the proper handling and disposal of contaminated material. Also, the Project's additional haul truck trips, with the use and implementation of the previously approved Draft EIR Mitigation Measures, will not create new transportation impacts. As a result, the Project would not create a significant hazard through the routine transport, use, or disposal of hazardous materials; therefore there is **no impact.**

HAZ-4: Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

There will be no impact.

Project construction activity could occur near emergency service facilities (e.g., fire stations and hospital) and along roadways used by emergency service providers. Per standard procedures, adequate emergency access would be maintained during lane closures along secondary highways and collector streets. Where feasible, for construction staging, traffic control would be employed to reroute pedestrians around the sidewalk construction area and signage would be posted to direct pedestrians and drivers. Construction managers and personnel would follow Work Area Traffic Control Handbook (WATCH) and/or Manual on Uniform Traffic Control Devices (MUTCD) guidelines to ensure the safety of vehicle, pedestrian, and bicycle traffic during re-routing. Compliance with such existing standard industry practices such as traffic control and signage, and requirements such as with those in the WATCH manual and "most recent of edition of the SSPWC Greenbook adopted by the Bureau of Engineering" would provide adequate emergency access. Access roads would be available for emergency personnel as required in the most recent copy of the BOE Brownbook; and traffic control, signage, and coordination with Los Angeles Department of Transportation (as appropriate) would occur. (City of Los Angeles, 2012)

Furthermore, in the unforeseen event of any hazardous material emergencies, the California Hazardous Material Incident Contingency Plan (HMICP), developed by the State's Office of Emergency Services (OES), includes several different scenarios of emergency responses to reduce confusion, improve safety, organize and coordinate actions in case of major unforeseen circumstances. The HMICP would be utilized by local governments to clarify agency roles and relationships concerning hazardous material emergencies.

Conclusion

As a result, the Project would not hinder or impair an adopted emergency response or evacuation plan or route because of the standard procedures and compliance with standard industry practices and there is **no impact.**

Operational Impacts

There will be no operational impacts. The proposed uses of a parking lot, open space, and coastal access does not add any operational impacts to hazards and hazardous materials for the Project; therefore, there is **no impact.**

Therefore, with regard to the criteria set forth in CEQA Guidelines Section 15162(a), the changes proposed would not result in any new significant impact with respect to hazards and hazardous materials.

6.3 Cumulative Impacts

The VAPP project, either individually or cumulatively, will not result in significant impacts to biological resources in the newly designated Essential Fish Habitat in the Grand Canal and Ballona Lagoon. No significant effects would occur on biological resources and no other known projects in the vicinity of the Proposed Project that, when considered together, would result in significant adverse impacts to the wildlife and habitats in the vicinity of the Project Site. Therefore, cumulative impacts related to biological resources would be: **less than significant**.

As identified in the Draft EIR, cumulative noise and vibration impacts are significant and unavoidable. There are related projects proposed in relatively close proximity to the Project Site (within 0 to 0.5 miles). The following sections discuss the cumulative impacts that could occur if construction of these related projects occurs simultaneously with the 128 Hurricane St. lot Project. There are no additional construction or operation cumulative impacts from the Draft EIR.

Related projects, including some portions of the projects in Marina del Rey could still be occurring and overlap with the VAPP 128 Hurricane St. lot construction period. This would bring additional construction activity into the immediate vicinity of the Project Site.

Because the 128 Hurricane St. lot project construction noise and vibration impacts are predicted to have no additional impact to the VAPP Project, and no new mitigation measures required, the cumulative impact would also have no impact beyond what was already analyzed as **significant and unavoidable** in the Draft EIR.

Vibration from construction activities is assessed based on distinct single events using the instantaneous vibration (PPV) from a single piece of equipment. Therefore, the vibration levels experienced at any specific time at a given receptor are typically dominated by a single piece of construction equipment, and the cumulative increase due to additional pieces of equipment is minimal.

Because the 128 Hurricane St. lot project construction vibration impacts are predicted to have no additional impact to the VAPP Project, with no new mitigation measures required, the cumulative impact would also have no impact beyond what was already analyzed as **significant and unavoidable** in the Draft EIR.

7.0 Summary of Environmental Effects

Biology

Regarding the criteria set forth in CEQA Guidelines Section 15162(a), the changes proposed would not result in any new significant impact with respect to biological resources. The project would not result in the loss of individual resources or the permanent reduction of existing habitat, of a state or federal listed endangered, threatened, rare, protected, or candidate species, or a Species of Special Concern or federally listed critical habitat. Also, the project would not result in the loss of individuals or the reduction of existing habitat of a locally designated species or a reduction in a locally designated natural habitat or plant community. There will be no interference with essential fish habitat such that normal species behaviors are disturbed from the introduction of construction noise and vibration to a degree that may diminish the chances for long-term survival of a sensitive species; therefore; **less than significant impacts** would occur during construction and no mitigation is required. Therefore, with regard to the criteria set forth in CEQA Guidelines Section 15162(a), the changes proposed would not result in any new significant impact with respect to biological resources.

Hazards and Hazardous Materials

Regarding the criteria set forth in CEQA Guidelines Section 15162(a), the changes proposed would not result in any new significant impact with respect to hazards and hazardous materials. The Project would not create new significant hazard to the public or the environment because the oil well will be abandoned, and the contaminated soil will be removed and remediated, then replaced with new soil. Releases from existing groundwater and soil contamination is not expected, but would be addressed through standard City BOE conditions and applicable laws and regulations that address the proper handling and disposal of contaminated material. Upon remediation, the site will no longer be a REC. The Project would not create a significant hazard through the routine transport, use, or disposal of hazardous materials. Therefore, with regard to the criteria set forth in CEQA Guidelines Section 15162(a), the changes proposed would not result in any new significant impact with respect to hazards and hazardous materials.

Cumulative

Because the 128 Hurricane St. lot project construction noise and vibration impacts are predicted to have no additional impact to the VAPP Project, with no new mitigation measures required, the cumulative impact would also have no impact beyond what was already analyzed as **significant and unavoidable** in the Draft EIR. Therefore, with regard to the criteria set forth in CEQA Guidelines Section 15162(a), the changes proposed would not result in any new significant impact with respect to cumulative impacts.

8.0 Determination

The analysis of the Project modifications supports the determination that the proposed changes are relatively minor and would not involve new significant environmental effects, or result in a substantial increase in the severity of previously identified significant effects which would call

for, as provided in Section 15162(b) of the State CEQA Guidelines, the preparation of a Subsequent EIR or Negative Declaration. Therefore, the City has elected to prepare this variation of an Addendum to the approved EIR as the appropriate form of documentation to meet the statutory requirements of CEQA.

This Addendum to the EIR environmental analysis evaluates the potential impacts of the proposed modifications in relation to the current environmental conditions, and in consideration of the environmental findings for the Project. The analysis contained herein demonstrates that all of the impact issues previously examined in the approved EIR would remain unchanged with the proposed modifications.

9.0 Appendices

A. VAPP Phase II ESA

B. VAPP 128 Hurricane St. - Phase II ESA Amendment with Removal Action Workplan

C. Essential Fish Habitat Assessment

D. Habitat Management Mitigation Plan (HMMP)

E. VAPP 128 Hurricane St. Voluntary Oversight Application

F. Venice Wetlands Jurisdictional Delineation Report

G. Sea Level Rise Report

F. VAPP 128 Hurricane St. Site Plan

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Phase II Environmental Site Assessment

128 Hurricane Street
Los Angeles, California

Prepared for:
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Bureau of Engineering
Department of Public Works

Project number: 60553849

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Appendix F – Soil Gas Analytical Laboratory Reports and LADBS Form 1

1. INTRODUCTION AND BACKGROUND

This Phase II environmental site assessment (ESA) report, prepared by AECOM, provides a summary of the investigation that was conducted at the property located at 128 Hurricane Street in Los Angeles, California (the Site; see **Figure 1**). The investigation consisted of sampling and testing soil and groundwater for various potential chemical impacts. Soil gas samples were also collected and tested for methane due to the Site being categorized in the methane zone by the City of Los Angeles Department of Building and Safety (LADBS). All investigation activities were conducted in accordance with local, state, and federal regulatory requirements.

This section presents the objective of the investigation and summarizes the Site background information, including previous environmental investigations and chemicals of concern detected at the Site.

1.1 Investigation Objectives

The objective of this Phase II ESA was to evaluate the subsurface for the presence of hazardous materials associated with former oil production activities. This information will be used to support the City of Los Angeles Bureau of Engineering (City of LA BOE) with the proposed purchase and redevelopment of the subject property.

1.2 Site Location and Description

The Site is approximately 3,400 square feet and is assigned the Los Angeles County Assessor's Parcel Number (APN) 422-5010-016. The Site is bordered to the north and west by residences; to the east by the City of Los Angeles Department of Public Works Venice Pumping Plant, and to the south by a walking trail and Ballona Lagoon Grand Canal. The site is currently a vacant, dirt lot, and was recently used for storage of vehicles and miscellaneous items during the construction of various public construction projects (Ninyo&Moore, 2016). Final plans for future development are not currently available; however, a paved parking lot with hardscape is proposed.

According to the State of California, Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR) well finder website, a historical oil production well is present on the Site (McDonald 2, API 03713842), with a total depth of 5,860 feet below ground surface (bgs). The location of the former oil production well was discovered during the geophysical investigation and is shown on **Figure 2**. Reportedly, the "McDonald 2" well was abandoned in 1932. A permit to re-abandon the well was issued in 2002 and renewed annually from 2004 to 2008. According to DOGGR, the well has not been re-abandoned, and the permit to re-abandon was cancelled. The Phase I ESA indicated that DOGGR will require that the well be re-abandoned to present-day standards if the Site is to be used for purposes other than a laydown area (Ninyo&Moore, 2016).

The Site has not been developed with structures from at least 1928 through the time of this report. The area surrounding the Site was developed with oil production facilities from at least 1938 through 1952, and with residential properties from at least 1963 through the

time of this report. The Venice Pumping Plant appeared adjacent to the east of the site by at least 1963 (Ninyo&Moore, 2016). According to a survey of the Site provided by the property owner, two electrical cabinets/concrete vaults were present in the southern portion of the Site, which were later removed by the City of Los Angeles. The purpose of the electrical cabinets/concrete vaults was not stated. The approximate locations of the electrical cabinets/concrete vaults are shown on **Figure 2**.

The site is located in a Methane Zone, and is within the Playa del Rey Oilfield. The nearby area has had oil pipelines, storage tanks and vaults. According to the DOGGR well finder website, numerous other historical oil production wells are located in the Site vicinity.

1.3 Geological and Hydrogeological Summary

The Site is located at the northwest edge of the Peninsular Ranges Geomorphic Province of California. Landmarks in the vicinity of the Site include the Los Angeles Basin to the east, the Santa Monica Bay to the southwest, and the Santa Monica Mountains to the northwest.

The upper 2 feet of soil beneath the Site appears to be fill material consisting of light brown silt and sand. Underlying the fill material, soil is predominantly brown to gray fine sand and silty sand from the surface to maximum depth explored, which was 20 feet bgs. A sandy clay layer was encountered in some borings between 3.5 and 4 feet bgs. Concrete debris was also encountered in some borings.

The Ballona Lagoon lies south and adjacent to the site. The Pacific Ocean is approximately 0.22 miles south and west of the Site. The Site is within the Santa Monica Sub-basin of the Coastal Plain of Los Angeles Groundwater Basin. Groundwater was encountered at approximately 5 feet bgs during the Phase II ESA. Reportedly, groundwater is expected to flow to the southwest, toward the Pacific Ocean (McAlister GeoScience, 2016).

1.4 Summary of Previous Investigations

Reportedly, a geotechnical investigation was conducted by the City of LA BOE, Geotechnical Services Division (GSD), in 2006; the results of the investigation were documented in a report dated July 24, 2006. During the geotechnical investigation, two hand auger borings (B-1 and B-2) were advanced within the vicinity of the onsite electrical cabinets/concrete vaults to evaluate the condition of nearby soils. The borings encountered fill consisting of brown silty sand with some fragments of broken glass up to the maximum depth explored of 2 feet bgs. Soil samples were analyzed for petroleum hydrocarbons, polychlorinated biphenyls (PCBs), volatile organic compounds (VOCs), and Title 22 Metals. The sample from B-1 was found to contain concentrations of petroleum hydrocarbons at 6,500 parts per million (ppm), and the sample from B-2 was found to contain concentrations of petroleum hydrocarbons at 100 ppm (Ninyo&Moore, 2016). Records indicating that removal of the impacted soil were not found.

In 2016, Ninyo & Moore of Irvine, California, conducted a Phase I ESA on behalf of the City of LA BOE. Ninyo & Moore reported the following Recognized Environmental Conditions (RECs) in connection with the property:

- Abandoned former oil production well (McDonald 2, API 03713842) on the Site.

- Subject property is located within a methane zone.
- The results of geotechnical investigation in 2006 indicated high concentrations of petroleum hydrocarbons in soil on site.
- The results of the vapor encroachment screening (VES) indicated that a possible vapor encroachment concern (VEC) currently exists beneath the site.

Ninyo & Moore recommended a limited subsurface investigation to evaluate the RECs and VEC.

2. INVESTIGATION ACTIVITIES

This section presents a summary of the activities conducted during the Phase II ESA at the Site, including pre-field activities, drilling and sampling activities, soil gas probe construction, sample analysis, and management of investigation derived waste disposal. The soil boring locations are shown on **Figure 3**. A summary of the sample depths and analytical methods used during the Phase II ESA is provided in **Table 1**.

The investigation occurred in the following four phases.

- The initial investigation conducted on June 20, 2018 consisted of advancing and sampling six shallow soil borings (SB-1 through SB-6), setting a temporary well in soil boring SB-4 for groundwater sampling, and installing soil gas probes in soil borings SB-1 and SB-3 for methane testing.
- Test Pits 1 and 2 were excavated and sampled on June 21, 2018.
- Methane samples were collected and tested on June 26 and 27, 2018, in accordance with LADBS Site Testing Standards for Methane (LADBS standards).
- A step-out investigation was conducted on June 28, 2018, which included drilling and sampling of 13 soil borings SO-1 through SO-13 to further delineate impacted areas of the Site where initial concentrations of total petroleum hydrocarbons (TPH) and lead exceeded regulatory screening levels. Temporary wells were set in three soil borings (SO-3, SO-8, and SO-13) to further evaluate TPH impacts in groundwater.

All soil borings were hand augered to 5 feet bgs or to refusal. Soil gas probes were set approximately 12 inches above the water table. The temporary groundwater wells were set at approximately 10 feet bgs.

2.1 Prefield Activities

Prior to conducting the drilling and sampling field activities, the following pre-field activities were conducted:

- A Site-specific Health & Safety Plan (HASP) was prepared to cover field staff health and safety associated with the field activities. All field personnel were required to implement the procedures presented in the HASP while conducting onsite field work.
- Underground Service Alert (USA) of Southern California was notified of the intent to conduct subsurface investigations at least 48 hours in advance of drilling.
- A geophysical survey of the Site was conducted by Spectrum Geophysics (Spectrum) of Chatsworth, California, on June 13, 2018, to screen the entire Site for utilities and other metallic and non-metallic buried objects (oil wells, conduits, utilities, etc.). Geophysical techniques used during this investigation included various electromagnetic (EM) methods, magnetic methods, and ground penetrating radar (GPR). Before conducting the survey, a 5-foot by 5-foot survey grid was laid over the entire Site and marked with surveyors paint. The field equipment and procedures used to perform the survey and the interpretation of the results are described in detail in the Spectrum report included in **Appendix A**.

- Soil borings permits were obtained from the County of Los Angeles Environmental Health Division for both the initial and step-out phases of the Phase II ESA. Copies of the permits are presented in **Appendix B**.

2.2 Summary of Geophysical Investigation

Three primary subsurface anomalies were identified during the geophysical investigation, including a magnetic peak at one location, buried metal at six locations, and conduit at two locations, that required further investigation. The magnetic peak is believed to be location of the former oil production well. Further information of each anomaly is presented in **Appendix A**. The anomalies are also shown on **Figure 2**.

2.3 Soil and Groundwater Sampling Activities

A total of 19 borings were advanced at the Site during the Phase II ESA. The initial six soil borings (SB-1 through SB-6) primarily targeted the anomalies identified during the geophysical investigation. Thirteen step out soil borings (SO-1 through SO-13) were later advanced to further delineate soil and groundwater impacts identified from the initial investigation. The locations of the soil borings are presented on **Figure 3**. Soil sampling activities conducted during the Phase II ESA are described below.

2.3.1 Drilling Methods

The following drilling methods were utilized during the investigation:

Hand-Auger/Slide Hammer Sampler: The hand-auger method utilized for this investigation included a 3-inch diameter sand bucket attached to 4-foot long extensions with a T-bar or handle which is turned by hand. As the depth of the boring increased, additional hand auger extensions were attached, as applicable. For collection of soil samples, the auger was removed from the borehole and samples were placed into new re-sealable plastic bags and labeled. Following decontamination of the sampling equipment, the hand auger bucket was lowered back down the borehole and advanced via rotation to the target sampling depth. Soil samples were homogenized in the bag and subsampled into laboratory provided glass jars and labeled. Samples designated for VOCs analysis were collected using the downhole slide hammer, which collects a relatively undisturbed sample within a stainless steel sleeve. Soil samples tested for VOC analysis were subcored and collected using Terracore sampling kits provided by the analytical laboratory in accordance with United States Environmental Protection Agency (USEPA) Method 5035. Borings SB-1 through SB-6 and SO-1 through SO-13 were advanced and sampled using a hand auger/slide hammer sampler to depths up to 5 feet bgs. Some borings were then advanced to deeper depths using a direct push drilling rig or a hollow stem auger drilling rig, as described below.

Direct Push Drilling: A Geoprobe 6600 truck mounted direct push drilling rig was used to advance the dual tube sampling and core barrels. The dual tube system included a core barrel with a 1 ¾-inch diameter internal acetate sleeves (or similar). With the dual tube Geoprobe system, the inner rods and acetate sleeves are removed from the core barrel at the bottom of the borehole. Following retrieval, the section of the sleeve selected for laboratory analysis was cut away from the rest of the sleeve, and the exposed soil at each end was covered with Teflon sheeting and fitted with plastic end caps. Step-out borings

SO-3, SO-8, and SO-13 were advanced and sampled using a direct push drilling rig at depths between 5 feet bgs and 10 feet bgs.

Hollow Stem Auger Drilling: During hollow stem auger drilling activities, soil samples were collected at the designated intervals using a split spoon sampler. Upon reaching the desired sample depth, the modified split soon sampler was driven 18 inches into the center of the drill auger flight using a 140-pound hammer over a 30-inch drop. Hammer blow counts were recorded every six inches over the 18-inch sampling interval; blow counts give an indication of the density of the formation. Soil samples were collected using 2.5-inch diameter, 6-inch long stainless steel rings fitted inside the split-spoon sampler. Following retrieval, a sleeve was selected for laboratory analysis and the exposed soil at each end was covered with Teflon sheeting and fitted with plastic end caps. Soil samples tested for VOC analysis were subcored and collected using Terracore sampling kits provided by the analytical laboratory in accordance with USEPA Method 5035. Boring SB-4 was advanced and sampled using a hollow stem auger drilling rig at depths between 5 feet bgs and 20 feet bgs.

Worker breathing zones were routinely monitored with a photoionization detector (PID) and a four-gas meter as a health and safety measure.

2.3.2 Soil Lithology Logging Procedures

A qualified field geologist logged the lithologic descriptions of soil borings and samples in general accordance with the Unified Soil Classification System (USCS). Soil boring logs for borings SB-1 through SB-6 are included in **Appendix C**. The following sampling information was recorded on soil boring logs: date and time; sample depth, soil type, lithology description, color (using the Munsell soil color chart), and moisture content. Other relevant visible evidence of soil contamination or olfactory observations (i.e., staining, odor) was also documented on the boring logs.

Soil samples were field screened for organic compounds using a PID. Headspace analyses of the soils encountered were conducted by placing soil collected from each sampling depth into a re-sealable plastic bag. Soil within the sealed plastic bag was then shaken in the sealed bag to volatilize any VOCs that may be present. The probe of the PID was then inserted into the bag to measure detectable concentrations of total organic vapors. The PID was calibrated using a 100 parts per million (ppm) isobutylene gas standard at the beginning of each workday.

2.3.3 Soil Sample Collection and Analysis

A total of 63 primary soil samples were collected from the six initial and 13 step out soil borings. Soil samples were generally collected from each boring at depths of 0.5, 1, 2.5, 3.5, 5, 10, and 15 feet bgs, where applicable (see **Table 1**). Following collection, the samples were labeled and temporarily stored within an ice filled cooler prior to delivery to the analytical laboratory under chain-of-custody procedures. Duplicate samples were generally collected at a frequency of 10 percent to ensure the reliability and comparability of all data generated during the investigation.

TPH in the gasoline range (TPH-g), TPH in the diesel range (TPH-d), and TPH in the motor oil range (TPH-o) using USEPA Method 8015M was the most requested analysis (tested on 65 primary and six duplicate samples) in an effort to identify areas of elevated

TPH concentrations identified in the 2006 investigation and/or releases from the former oil production well or other historical site activities. Title 22 Metals using USEPA Method 6010B was the second most requested analysis, tested on 61 primary and four duplicate samples, followed by VOCs using USEPA Method 8260B, tested on 13 primary and two duplicate samples. Next, four primary samples were analyzed for organochlorine pesticides (OCPs) using USEPA Method 8081A. Finally, two primary samples were analyzed for semi-volatile organic compounds (SVOCs) using USEPA Method 8270C, herbicides using USEPA Method 8151A, and PCBs using USEPA Method 8082. Samples and analytical methods were selected based on Site history and expected chemical uses.

Laboratory analysis was completed by American Analytics, Inc. of Chatsworth, California, a state-certified fixed analytical laboratory (American Analytics). See **Table 1** for a summary of the analytical program.

2.3.4 Equipment Decontamination

Sampling equipment was washed in a non-phosphate cleaning solution and rinsed with tap water and final rinsed with deionized water. The investigation derived waste (IDW) rinseate generated during decontamination activities was placed in a Department of Transportation rated 55-gallon drum.

2.4 Test Pit Sampling Activities

Two test pits with the approximate dimensions of 3 feet × 3 feet × 3 feet were excavated using a mini-excavator on-Site. Test Pit 1 was located on the northern portion of the Site, south of the former oil well. Test Pit 1 was initially placed closer to the former oil well, but a flat, concrete pad was encountered at approximately 2 feet bgs. The test pit was relocated approximately 3 feet south, toward boring SB-4. The target depth of 3 feet bgs was reached at this location. Test Pit 2 was located on the southern portion of the Site, adjacent to the former electrical boxes/concrete vaults. The locations of the test pits are shown on **Figure 3**.

Excavated soil was placed next to each excavation on Visqueen or similar plastic barrier. A PID and four-gas meter were deployed during the excavation to monitor the breathing zone for organic vapor, methane, and hydrogen sulfide.

Soil from each test pit was logged for soil type, lithology description, color, and moisture content. Other relevant visible evidence of soil contamination or olfactory observations (i.e., staining, odor) was also documented in field notes. Based on field observations, two soil samples were collected from each test pit for analysis of TPH-g, TPH-d, and TPH-o by USEPA Method 8015M and Title 22 Metals by USEPA Method 6010B.

Following sample collection, the excavated soil was returned to a rough backfill at each excavation location.

2.5 Groundwater Sampling Activities

Grab groundwater samples were collected to evaluate the presence of contaminants in groundwater associated with former oil production activities at the Site. Grab groundwater samples were collected in borings shown on **Figure 3**. Sample locations were selected to assess conditions downgradient of the former oil production well (boring SB-4), beneath

areas with high TPH detected in soil (boring SO-8), and general site conditions (borings SO-3 and SO-13).

2.5.1 Groundwater Sample Collection

Boring SB-4 was advanced to 20 feet bgs using a combination of hand auger and hollow stem auger drilling equipment. A temporary PVC well with slotted screen covered with a filter sock was placed between 5 and 10 feet bgs. Solid casing was extended to approximately 1 foot above ground surface.

Borings SO-3, SO-8, and SO-13 were advanced to 10 feet bgs using a combination of hand auger and direct push drilling equipment. The Geoprobe milled slotted rod was placed inside the boring to a depth of 10 feet bgs, with the slotted screen present between 5 and 10 feet bgs.

Groundwater was collected from all temporary wells using standard grab techniques such as a bailer (boring SB-4) or tubing with a check valve attached (borings SO-3, SO-8, and SO-13). Sampled groundwater was transferred to sampling containers for analysis. The sampling containers were then labeled and temporarily stored within an ice filled cooler prior to delivery to the analytical laboratory under chain-of-custody procedures.

2.5.2 Groundwater Sample Analysis

Groundwater samples were selectively analyzed for general minerals using USEPA Method 300.0 and Standard Methods 2510B, 2240C, 4500H+, 2520, and 2540C; VOCs by USEPA Method 8260B; TPH-g, TPH-d, and TPH-o by USEPA Method 8015M; and Title 22 Metals by USEPA Method 6010B. Laboratory analysis was completed by American Analytics. See **Table 1** for a summary of the analytical program.

2.6 Methane Sampling Activities

The Site was previously identified as being in a methane zone. Therefore, a methane assessment was included in the Phase II ESA to evaluate potential methane concentrations for the future design and installation of a methane mitigation system. Methane testing was conducted at the site on June 26 and 27, 2018, in general accordance with LADBS standards for Sites where groundwater is encountered at 5 feet bgs.

2.6.1 Soil Gas Probe Construction

Groundwater was encountered at or above 5 feet bgs; therefore, the shallow soil gas test was completed in lieu of the gas probe set test, as specified by LADBS. After collecting the appropriate soil samples, soil gas probes were constructed in borings SB-1 and SB-3 at approximately 3.5 and 4 feet bgs, respectively, which are at least 12 inches above the groundwater table, in accordance with LADBS standards.

Each probe consisted of ⅜-inch diameter by 6-inch long stainless-steel mesh screen attached to ¼-inch diameter Teflon tubing which was inserted into the borehole and the annulus was backfilled with #3 Monterey sand approximately six inches above and below the mesh screen (a total sand pack thickness of 1 to 1.5 feet). Approximately 1 foot of dry granular bentonite was added to the top of the sand pack to prevent water infiltration

during seal construction. Granular bentonite was hydrated above the dry granular bentonite seal to the ground surface elevation. Sample valves were installed at the ends of the tubing, which were then allowed to equilibrate for at least 48 hours.

2.6.2 Soil Gas Sample Collection and Analysis

Soil gas samples were collected in accordance with LADBS standards. Two sequential sampling events were conducted, a minimum of 24 hours apart. Prior to sample collection, a static pressure reading from the probes was obtained and recorded. Atmospheric pressure was also recorded to verify that sample collection was not occurring during a pre-frontal weather condition. Soil gas was withdrawn from the soil gas wells using a vacuum pump and Teflon tubing. Soil gas samples were then collected into a Tedlar bag, which was labeled, and submitted to American Analytics under chain-of-custody procedures.

Soil vapor samples were analyzed for fixed gases, including methane, oxygen, and carbon dioxide, by ASTM Method D1946M.

2.7 Waste Disposal

Waste generated during sampling and drilling activities was collected, labeled, and stored in 55-gallon drums onsite. Two drums of waste soil were generated from drilling activities, and one drum of waste water was generated during decontamination activities. A composite waste sample was collected and analyzed for TPH by USEPA Method 8015M, Title 22 Metals by USEPA Method 6010B, and VOCs by USEPA Method 8260B. All waste was classified as non-hazardous waste and transported by Belshire of Foothill Ranch, California, to Soil Safe in Adelanto, California, on July 13, 2018.

Waste manifest documentation is provided in **Appendix D**.

3. INVESTIGATION RESULTS

The following section describes the Phase II ESA results, including the observed lithology and soil, groundwater, and soil gas analytical results. Where applicable, results were compared to residential and commercial screening levels accepted in California: 1) California Department of Toxic Substances Control (DTSC) Human and Ecological Risk Office (HERO) Human Health Risk Assessment (HHRA) Note Number 3 DTSC-modified Screening Levels (DTSC SLs; June 2018); 2) USEPA Regional Screening Levels (RSLs; May 2018); and 3) San Francisco Bay Regional Water Quality Control Board (SFBRWQCB) Environmental Screening Levels (ESLs; February 2016).

3.1 Subsurface Observations

The upper 2 feet of soil beneath the Site appears to be fill material consisting of light brown, moist, loose, silt and sand with abundant live organic material (i.e., root/rootlet mass). Underlying the fill material, soil is predominantly brown to gray fine sand and silty sand to maximum depth explored which was 20 feet bgs. Fine sand with little to no fine material dominated the soil column below the water table to a depth of approximately 16 feet bgs.

Refusal at 2.5 feet bgs was encountered during the environmental investigation at various locations in the northern portion of the site. A test pit excavation confirmed the presence of a buried feature that was solid, flat, and composed of resistant concrete. The buried concrete pad appeared to be surrounding the former oil well, and may have been used as a platform and buried in place at the time of well abandonment.

A sandy clay layer was encountered in some borings between 3.5 and 4 feet bgs. Concrete and wood debris was also encountered in some borings within the upper few feet. Hydrocarbon like odor and staining was observed in borings SB-4, SO-12, SO-9 at approximately 3.5, 3, and 2.5 feet bgs, respectively. Other observations include an odor of decay noted in soil below water table elevation, which is indicative and common for soils at intertidal depositional environments, including this Site. Groundwater was encountered between 4 and 6 feet bgs during the Phase II ESA.

Boring logs from borings SB-1 through SB-6 are provided in **Appendix B**.

3.2 Soil Analysis

The analytical results for the detected compounds in soil are summarized in **Table 2**. Applicable screening levels are also presented for comparison purposes. Copies of the laboratory analytical reports and chains of custody for soil samples are presented in **Appendix E**. A summary of the analytical results is provided below.

- TPH compounds are present in soil at varying concentrations, and predominantly consist of weathered diesel and oil fractions in the western portion of the site between 2.5 and 3.5 feet bgs. TPH-g was detected in two of the 65 primary samples submitted for TPH analysis. None of the detections was above the residential ESL for TPH-g of 740 milligrams per kilogram (mg/kg). TPH-d was detected in 23 of the 65 samples submitted for TPH analysis. Eight of the samples exceeded the residential ESL for TPH-d of 230 mg/kg; four samples exceeded the commercial ESL for TPH-d of 1,100 mg/kg. All exceedances occurred in samples collected from either 2.5 feet bgs or 3.5

feet bgs. TPH-o was detected in 54 of the 65 samples submitted for TPH analysis; none of the detections was above the residential ESL for TPH-o of 11,000 mg/kg.

Based on the screening level comparison, **Figures 4A through 4C** show the spatial distribution of TPH-d concentrations in soil at depths between 0 and 2 feet bgs, 2 and 4 feet bgs, and deeper than 4 feet bgs, respectively. The maximum TPH concentrations are reported between 2 and 4 feet bgs (see **Figure 4B**). Concentrations decreased with depth, and in many cases are not detected below 4 feet bgs (see **Figure 4C**).

- Arsenic, barium, chromium, cobalt copper, lead, mercury, nickel, vanadium and zinc were detected in the 61 primary samples submitted for metals analysis. None exceeded their respective screening levels and/or accepted background levels, except for lead. Three samples contained lead concentrations exceeding the residential screening level of 80 mg/kg. All three samples were collected between 2.5 and 5 feet bgs and were limited to the western portion of the Site. Deeper soil samples collected from four locations at 10 feet bgs did not contain lead above the reporting limit (see **Table 2**). None of the soil samples contained lead exceeding the commercial screening level of 320 mg/kg. Reported lead detections in soil are shown on **Figures 5A though 5C** at depths between 0 and 2 feet bgs, 2 and 5 feet bgs, and deeper than 5 feet bgs, respectively. Lead impacts appear to be limited in extent, both laterally and vertically.
- Acetone and carbon disulfide were the only VOCs detected in the 13 primary samples submitted for VOCs analysis. Acetone was detected only once at a trace concentration of 0.056 mg/kg at SB-4-3.5. Carbon disulfide was detected three times at trace concentrations ranging from 0.005 mg/kg to 0.01 mg/kg with the maximum concentration reported in sample SB-6-1. Neither acetone nor carbon disulfide were detected at levels exceeding either of their respective residential and commercial screening levels.
- Chlordane, dieldrin, endosulfan II, alpha-chlordane, 4,4-DDD, 4,4-DDE, and 4,4-DDT were detected in the four primary samples submitted for pesticide analysis, indicating the former use of pesticide chemicals at the Site. All samples were collected at the surface (i.e., depth of 0.5 feet bgs) in borings generally spaced evenly throughout the Site. None of the detected pesticide compounds exceeded their respective screening levels for residential or commercial soil.
- Two surficial soil samples (i.e., depth of 0.5 feet bgs) were submitted for herbicide analysis. No compounds were detected at or above laboratory reporting limits.
- Two surficial soil samples (i.e., depth of 0.5 feet bgs) were submitted for PCB analysis. No compounds were detected at or above laboratory reporting limits.

3.3 Groundwater Analysis

The analytical results for the detected compounds in groundwater are summarized in **Table 3**. Applicable screening levels are also presented for comparison purposes. Copies of the laboratory analytical reports and chains of custody for groundwater samples are presented in **Appendix E**. A summary of analytical results is provided below.

3.3.1 General Minerals

Groundwater was encountered at approximately 5 feet bgs. General water quality parameters were analyzed for groundwater samples collected from borings SO-3, SO-8,

and SO-13; the results are summarized in **Table 3** and below. General minerals concentrations were compared to maximum contaminant levels (MCLs).

- Chloride ranged from 1,300 m/L to 3,800 mg/L, which exceed the MCL of 500 milligrams per liter (mg/L).
- Total dissolved solids (TDS) ranged from 3,300 mg/L to 8,600 mg/L, which exceed the MCL of 1,000 mg/L.
- Specific Conductance ranged from 5,200 micromhos per centimeter (µmhos/cm) to 14,000 µmhos/cm, which exceed the MCL of 1,600 µmhos/cm.
- Sulfate ranged from 140 mg/L to 560 mg/L, which exceed the MCL of 500 mg/L.
- pH ranged from 6.5 to 7.0.

In general, the groundwater quality at the site is poor. General chemistry constituents that exceed drinking water MCLs include chloride, sulfate, specific conductance, and TDS.

Per the State Water Resources Control Board's (SWRCB's) Resolution No. 88-63, "Sources of Drinking Water Policy," all surface and groundwaters of the state are considered to be suitable, or potentially suitable, for municipal or domestic water supply and should be so designated by the Regional Water Quality Control Board (RWQCB) with several exceptions, including waters where TDS exceeds 3,000 mg/L and it is not reasonably expected by the RWQCB to supply a public water system.

Based on the general minerals data collected at the Site, shallow groundwater at the Site would not be designated as suitable or potentially suitable for municipal or domestic water supply because TDS concentrations exceeded 3,000 mg/L in all groundwater samples analyzed. The presence of salinity in groundwater samples indicates the Site may be brackish and impacted from saltwater intrusion. Additionally, it is highly unlikely that drinking water wells will be installed on-Site for future use because of the availability of municipal drinking water sources supplied to nearby buildings. Therefore it is not anticipated that the shallow groundwater directly beneath the Site would ever be used for drinking water.

3.3.2 Groundwater Chemical Results

Groundwater samples were analyzed for TPH, metals, and VOCs. Groundwater concentrations were compared to both MCLs, which are drinking water standards, and nondrinking water ESLs published by the SFBRWQCB. Based on the results of the general minerals analysis and the above discussion, the nondrinking water ESLs are more applicable to this Site; therefore, only comparisons to the nondrinking water ESLs are summarized here.

- TPH-d and TPH-o were detected at low concentrations in all four of the groundwater samples collected. Concentrations of TPH-d ranged from 190 micrograms per liter (µg/L) to 420 µg/L, which are well below the nondrinking water ESL of 2,500 µg/L. Concentrations of TPH-o ranged from 170 µg/L to 560 µg/L, which is also well below the nondrinking water ESL of 50,000 µg/L. In general, it appears that concentrations of TPH in shallow groundwater are relatively consistent across the Site. Because of the historical oil operations that were present in the surrounding Site vicinity, shallow groundwater may be regionally impacted.
- Arsenic, barium, total chromium, cobalt, copper, lead, molybdenum, nickel, vanadium, and zinc were detected in groundwater. All concentrations were well below their non-drinking water ESLs.

- No VOCs were detected in groundwater.

3.4 Soil Gas Analysis

Methane was not detected at or above the laboratory reporting limit of 0.10 percent in either of the two soil gas probes. Static pressure was measured at 0 inches of water in both probes at the start of both sampling events. Methane does not appear to be present in the subsurface at the Site. These results classify the Site as a Level I design level, according to LADBS. Soil gas laboratory analytical reports and LADBS Form 1 are presented in **Appendix F**.

4. ENGINEERING COST ESTIMATE

As requested by the City of Los Angeles BOE, this section presents an engineering cost estimate to support redevelopment of the property assuming a future residential land use scenario. Based on previous Site investigations, the Site is known to be impacted with petroleum hydrocarbons and lead in soil associated with historic Site operations. Site remediation will likely be required prior to the proposed redevelopment of the 3,400 square foot property. This cost estimate will be used by the City of Los Angeles BOE to develop a fair purchase price for the property.

This engineering cost estimate has been prepared based on readily available Site information, typical agency requirements and guidance documents, industry knowledge, and related project experience. Remedial technologies most likely required for this Site include leak testing of the former oil production well, soil excavation to remove the localized TPH and lead impacts, possible re-abandonment of the oil production well, and installation of a passive ventilation system below future construction.

The cost estimate described below consists of two options, which are contingent on the results of a DOGGR inspection of the former oil production well head and a leak test. If the DOGGR inspection and leak test results are determined to be inadequate, the former oil production well will need to be re-abandoned and a riser pipe will be attached to the remaining casing and vented above grade. If the inspection and leak test are determined to be adequate, then only a riser pipe will be attached to the existing casing and vented above grade. A description of each of these proposed technologies and associated costs for each option is presented below.

Remedial Option 1

This option assumes the results of the DOGGR leak test will be determined to be inadequate, and complete well re-abandonment will be required. Therefore, this option includes five primary tasks, including a DOGGR file review, coordination with DOGGR to complete a production well inspection and leak test, excavation of TPH and lead impacted soil, re-abandonment of the former production oil well and installation of a vent at grade, and installation of a passive venting system for future construction. Each task is further described below.

- DOGGR File Review: After an update to DOGGR regulations in 2016, the owners of many older oil production wells received letters in 2017 to re-abandon the wells on their properties. If the former oil production well present at the Site received a directive letter in response to the regulatory update, it would not have been discovered in the Phase I ESA, which was completed in 2016; therefore, this task includes conducting an extensive review of all DOGGR records associated with the former oil production well on the Site.
- Expose the Well and Conduct Leak Testing: Following the sale and purchase of the property, the City will be required to notify DOGGR that the property is under new ownership and being redeveloped. With any new construction, DOGGR requires submittal of a Construction Site Plan Review Packet. Next, it is likely that DOGGR will require the casing of the well be exposed and a leak test conducted, which will be overseen by DOGGR inspectors. This task includes coordination with DOGGR and on-site oversight activities.
- Excavation of TPH and Lead Impacted Soil: TPH and lead impacted soil identified during the Phase II ESA and encountered during the DOGGR leak test will be

excavated and hauled off-site for disposal as non-hazardous waste. This cost estimate assumes approximately 300 tons of impacted soil will be removed from the Site at the areas shown on **Figure 6**. Impacted soil would be excavated to 4 feet bgs in the western portion of the Site to residential standards, eliminating potential risks associated with direct exposure to soil. Site construction or excavation activities would be conducted in accordance with a soil management plan to prevent Site workers from coming in contact with chemical impacts in the soil. Following excavation, sampling activities, and collection of confirmation soil samples, clean fill would be imported from an off-site location and backfilled, compacted, and graded to meet the requirements of the City of Los Angeles. This task includes preparing a work plan, conducting soil removal, collecting soil confirmation samples, conducting air monitoring activities, profiling and disposing of impacted soil, and documenting field activities in a removal action completion report.

- Production Well Abandonment and Vent Installation: This option assumes that after the former oil production well is uncovered and inspected, DOGGR will require a complete re-abandonment. Re-abandonment requirements are well-specific and are specified in a directive letter from DOGGR. Following abandonment activities, the remaining well casing will be vented to grade surface. This task includes coordination with DOGGR and the City of LA BOE, work plan preparation, field work scheduling and oversight, and associated reporting.
- Passive Methane Ventilation System: LADBS standards state that properties less than 5,000 square feet do not require a venting system if the intended use remains a laydown area/parking lot. If the City of LA BOE proposes to develop the property with a structure in the future, the results of the methane investigation indicate that a passive ventilation system will be required, in accordance with LADBS standards. The cost for this task includes design plans, coordination with LADBS and the City of LA BOE, work plan preparation, system installation, inspections, and documentation.

The engineering cost estimates provided below includes a summary of the five remedial items including a range of +50% to -30% to account for potential design revisions, changes in site requirements based on future information, and market pricing. As shown below, the engineering cost estimate for Option 1 is $551,500 with a range of $386,100 to $827,300.

Item	Task	Engineering Cost Estimate – Remedial Option 1		
		Estimated Amount	50%	-30%
1	DOGGR File Review	$ 1,500.0	$ 2,300.0	$ 1,100.0
2	Expose Well and Conduct Leak Testing	$ 15,000.0	$ 22,500.0	$ 10,500.0
3	Shallow Soil Excavation Field Work and Reporting	$ 160,000.0	$ 240,000.0	$ 112,000.0
4	Well Abandonment and Venting	$ 350,000.0	$ 525,000.0	$ 245,000.0
5	Methane Passive Ventilation System	$ 25,000.0	$ 37,500.0	$ 17,500.0
Total Engineering Cost Estimate		***$ 551,500.0***	***$ 827,300.0***	***$ 386,100.0***

Remedial Option 2

This option assumes the results of the DOGGR leak test will be determined to be adequate and well re-abandonment will not be required. Therefore, this option includes the same five primary tasks listed above in Option 1, but only a well vent will need to be installed on the existing well casing rather than re-abandoning the well.

As shown below, the engineering cost estimate for Option 2 is $186,500 with a range of $279,800 to $130,600.

Item	Task	Engineering Cost Estimate – Remedial Option 2		
		Estimated Amount	50%	-30%
1	DOGGR File Review	$ 1,500.0	$ 2,300.0	$ 1,100.0
2	Expose Well and Conduct Leak Testing	$ 10,000.0	$ 15,000.0	$ 7,000.0
3	Shallow Soil Excavation Field Work and Reporting	$ 120,000.0	$ 180,000.0	$ 84,000.0
4	Well Venting	$ 30,000.0	$ 45,000.0	$ 21,000.0
5	Methane Passive Ventilation System	$ 25,000.0	$ 37,500.0	$ 17,500.0
Total Engineering Cost Estimate		***$ 186,500.0***	***$ 279,800.0***	***$ 130,600.0***

For the purposes of developing a fair purchase price for the property, Remedial Option 1 listed above should be used in the negotiations with the current property owner.

5. CONCLUSIONS AND RECOMMENDATIONS

Soil, groundwater, and soil gas conditions were evaluated during this Phase II ESA to support the City of LA BOE with the proposed purchase and redevelopment of the subject property.

The results of the Phase II ESA showed the following:

- During the field work, a flat concrete feature buried at a depth of approximately 2 feet bgs was observed. Other relevant features detected during the geophysical survey included a magnetic peak at one location, buried metal at six locations, and conduit at two locations. The magnetic peak is believed to be the location of the former oil production well (see **Figure 2**). The concrete feature may require removal prior to Site redevelopment when the oil well casing is exposed. Once the concrete feature is removed, additional investigation and/or excavation may be required.
- Chemical detections in soil and groundwater, including lead, TPH (primarily weathered diesel and oil fractions), and trace detections of other compounds, indicate that past on-site activities related to oil-production activities may have impacted the site subsurface.
- Elevated TPH concentrations were detected in the northwestern and southwestern portion of the Site, which coincide with the location of the former oil well, the subsurface conduits identified during the geophysical survey, and the location of the former electrical boxes/concrete vaults as identified by the property owner. Eight samples exceeded the residential TPH-d screening level, and four samples exceeded the commercial TPH-d screening level. The elevated TPH-d concentrations were limited in extent, and found between depths of 2 and 4 feet bgs. TPH concentrations in soil samples collected at 5 and 10 feet bgs were significantly less or non-detect, and did not exceed applicable screening levels.
- Elevated concentrations of lead appear to be localized and limited in the western portion of the Site between 2 and 5 feet bgs. The maximum lead concentration of 160 mg/kg exceeded the residential screening level of 80 mg/kg, but was well below the commercial screening level of 320 mg/kg.
- There were no screening level exceedances of any compounds on the eastern portion of the Site.
- Groundwater data suggest that the groundwater quality at the Site is poor and is not suited for beneficial uses; it is unlikely that shallow groundwater would be used as a drinking water source. All concentrations were below non-drinking water screening levels.
- The lack of methane in the samples collected from the shallow soil gas probes indicates that methane is not present in the subsurface at the site. Because the Site is located in a methane zone, the soil gas results indicated the Site would be classified at a Level I Site Design Level. According to LADBS standards, hardscape parking lots less than 5,000 square feet do not require venting; however, future building construction would require installation of a passive ventilation system.

Based on the information obtained during the Phase II ESA and the results of the DOGGR administered leak test for the former oil production well, two remedial cost options were presented. The cost estimate ranges between $551,500 (including complete well re-abandonment) to $186,500 (without complete well re-abandonment). For the purposes of

developing a fair purchase price for the property, Remedial Option No. 1 should be used in the negotiations with the current property owner.

6. REFERENCES

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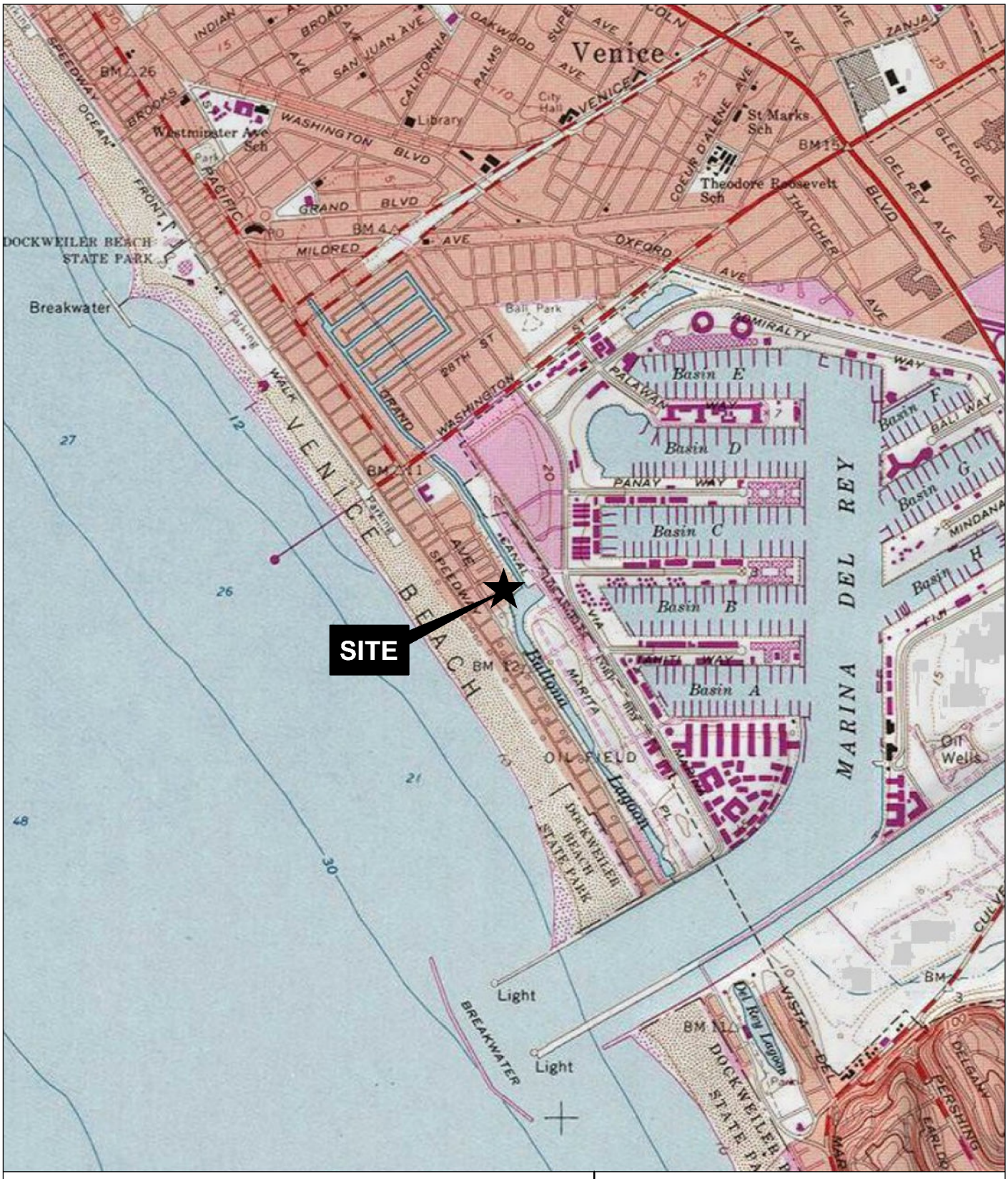
Figures



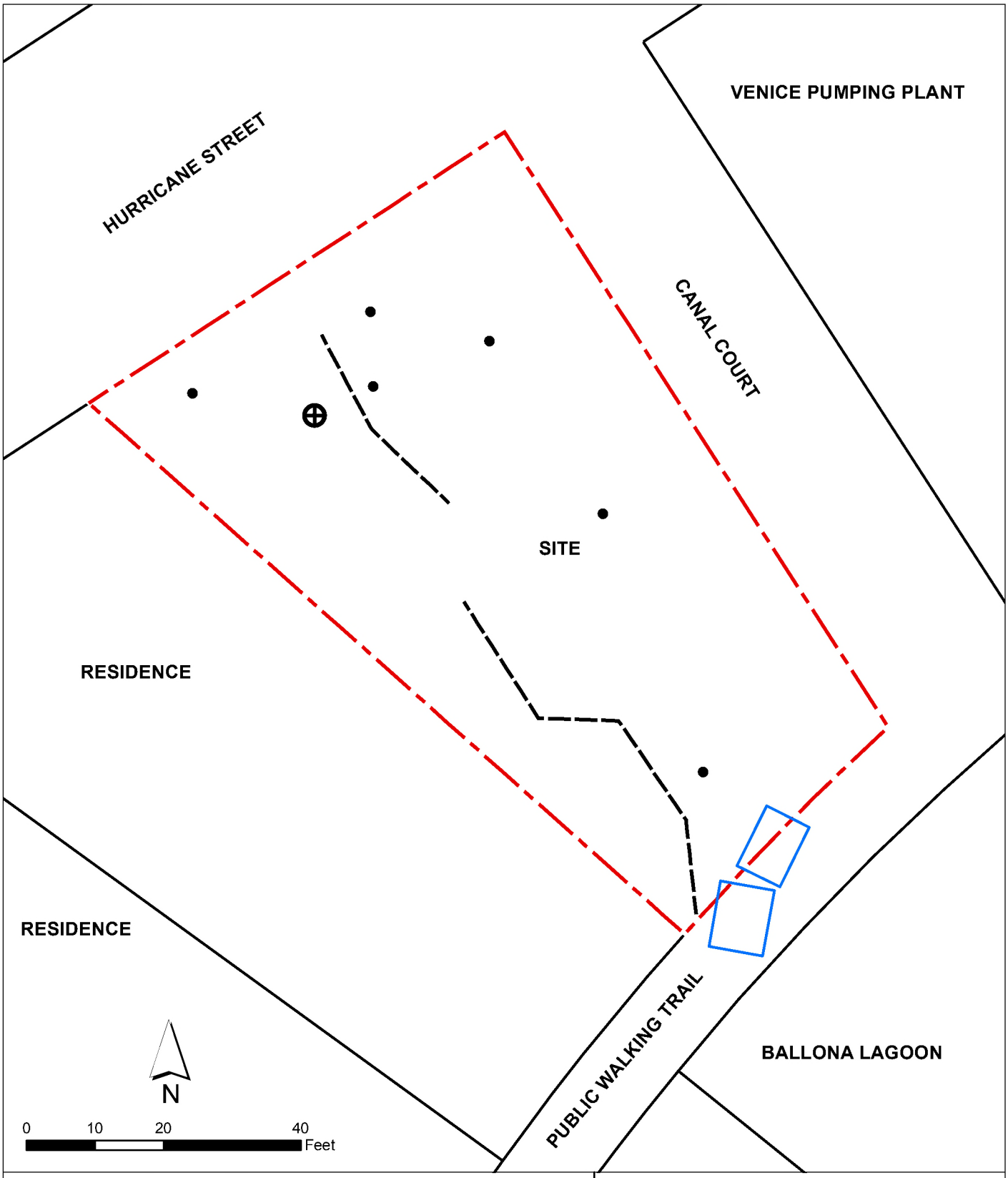
Reference: Topo 2013 National Geographic USGS Map

AECOM

SITE LOCATION MAP

Site:	Figure:
128 Hurricane St. Los Angeles, CA	1
Project: 60553849	Date: 8/6/2018

Path: R:\Projects\ENV\City of LA BOE\60553849_TO5SewerEn\900-CAD-GIS\920-GIS or Graphics\Figure 1 - Site Vicinity.mxd



Legend

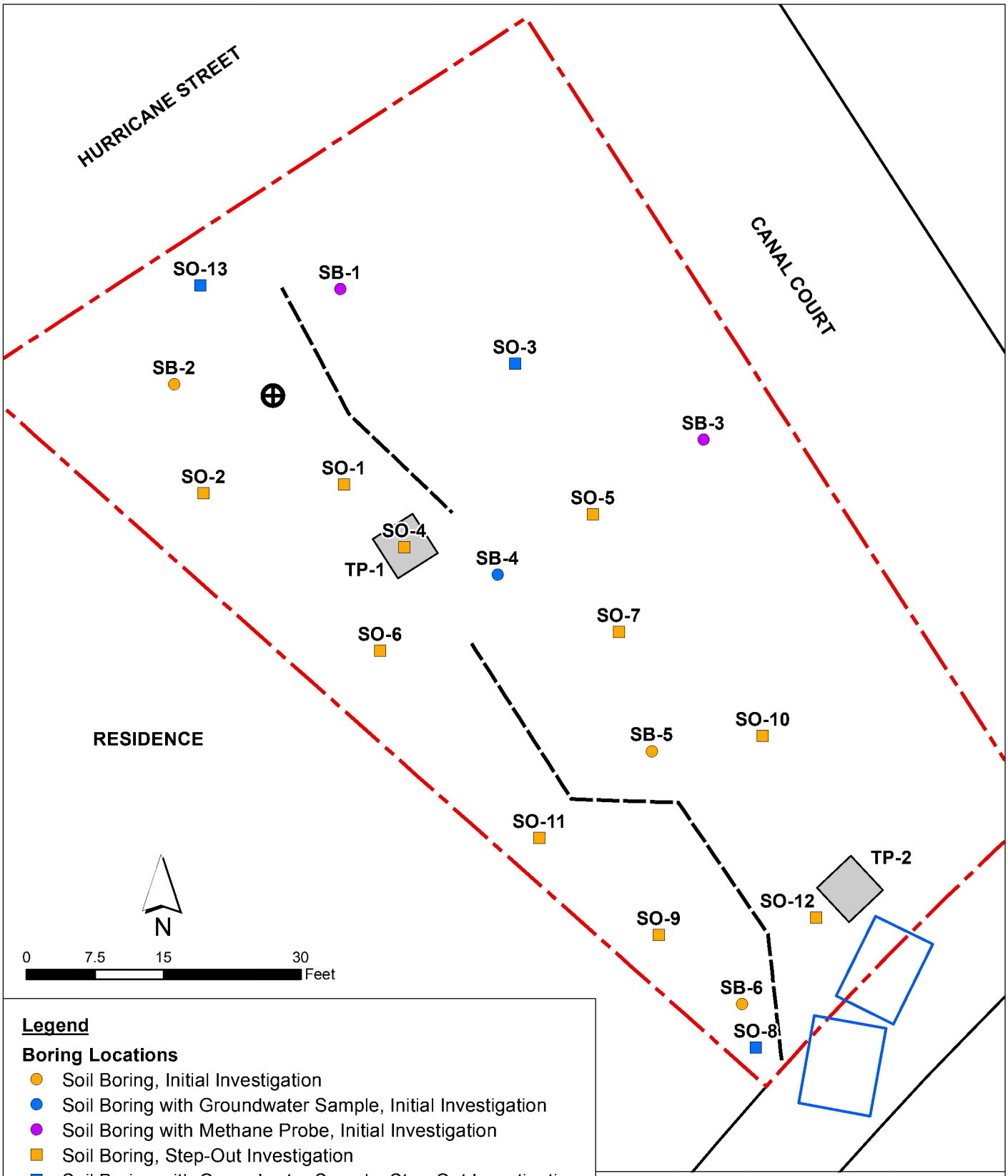
- Former Oil Well/Magnetic Peak (Approximate)
- Buried Metal (Approximate)
- Former Electrical Cabinets/Concrete Vaults (Approximate)
- Subsurface Conduits (Approximate)
- Site Boundary
- County Parcels

AECOM

SITE FEATURES

Site:	Figure:
128 Hurricane St. Los Angeles, CA	2
Project: 60553849	Date: 8/29/2018

Path: \\172.28.218.25\LosAngeles\Projects\ENV\City of LA BOE\60553849_TO5SewerEn\900-CAD-GIS\920-GIS or Graphics\Figure 2 - Site Features.mxd



Legend

Boring Locations

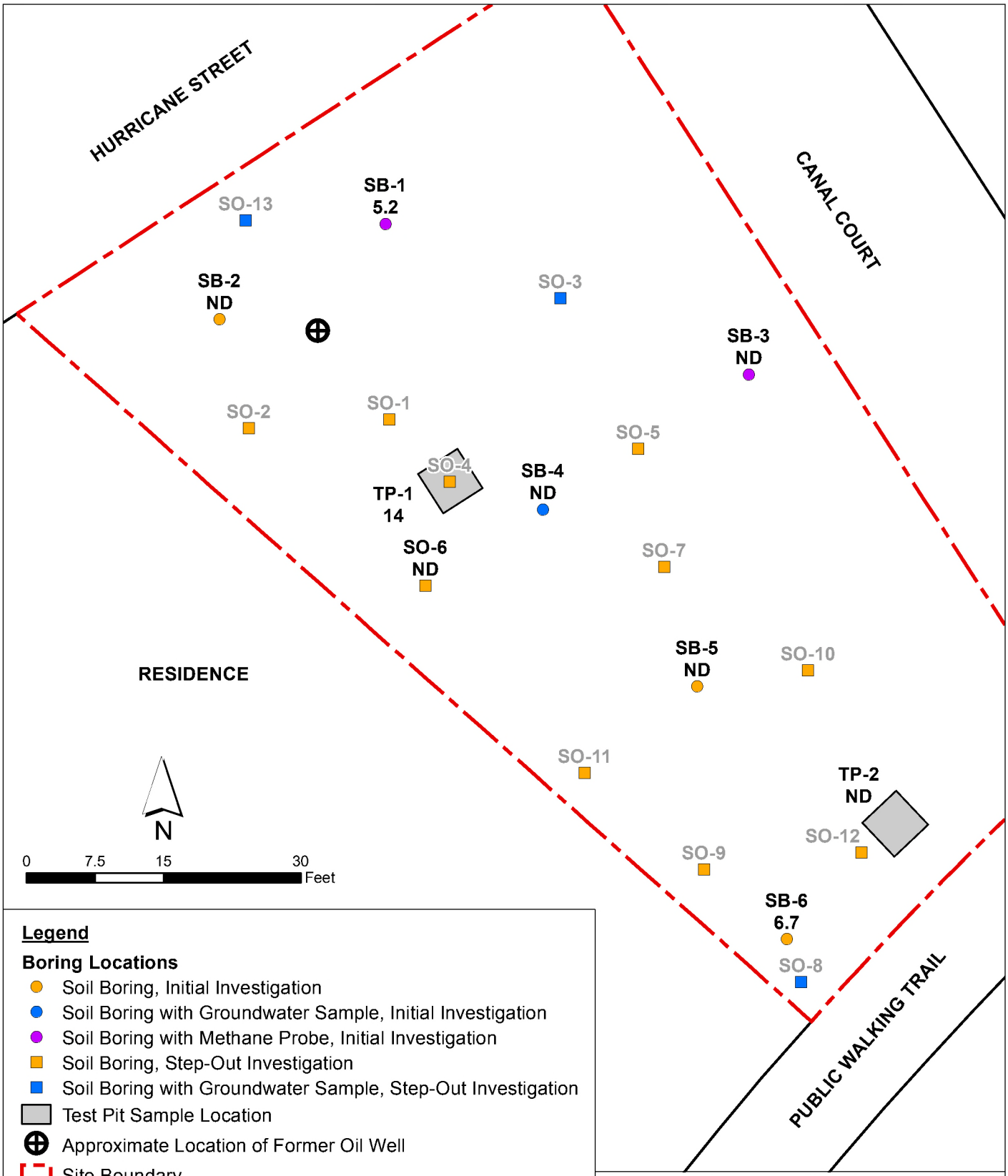
- Soil Boring, Initial Investigation
- Soil Boring with Groundwater Sample, Initial Investigation
- Soil Boring with Methane Probe, Initial Investigation
- Soil Boring, Step-Out Investigation
- Soil Boring with Groundwater Sample, Step-Out Investigation
- Test Pit Sample Location
- Former Oil Well (Approximate)
- Former Electrical Cabinets/Concrete Vaults (Approximate)
- Subsurface Conduits (Approximate)
- Site Boundary
- County Parcels

AECOM

SAMPLE LOCATIONS

Site: 128 Hurricane St. Los Angeles, CA	Figure: 3
Project: 60553849	Date: 8/31/2018

Path: \\172.28.218.25\LosAngeles\Projects\ENV\City of LA BOE\60553849_TO5SewerEn\900-CAD-GIS\920-GIS or Graphics\Figure 3 - Sample Locations.mxd



Legend

Boring Locations

- Soil Boring, Initial Investigation
- Soil Boring with Groundwater Sample, Initial Investigation
- Soil Boring with Methane Probe, Initial Investigation
- Soil Boring, Step-Out Investigation
- Soil Boring with Groundwater Sample, Step-Out Investigation
- Test Pit Sample Location
- Approximate Location of Former Oil Well
- Site Boundary

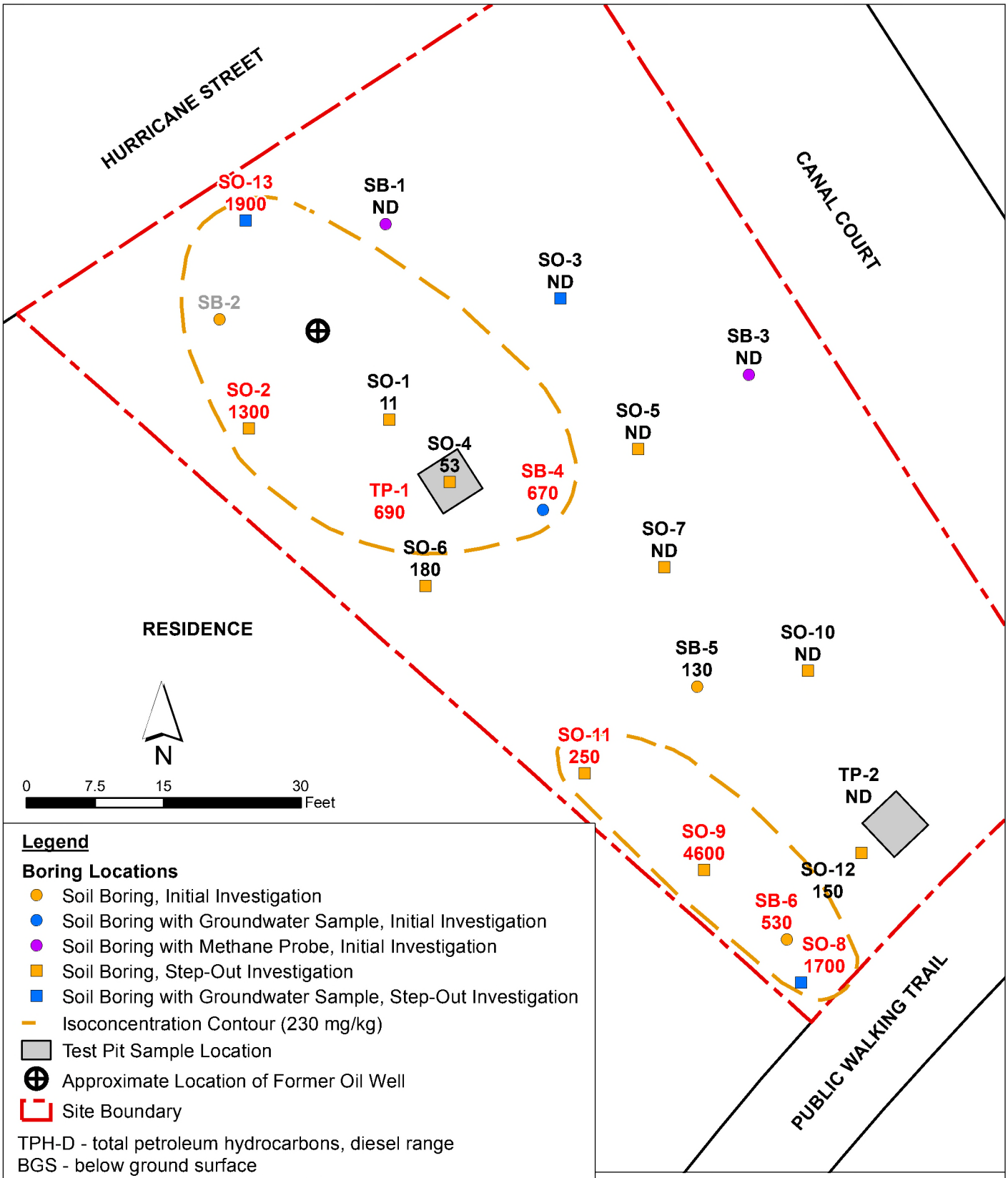
TPH-D - total petroleum hydrocarbons, diesel range
BGS - below ground surface
ND - not detected above the reporting limit
Concentrations shown in milligrams per kilogram (mg/kg)
Gray labels indicate TPH-D was not sampled at this depth interval at that location
If more than one sample was collected within the selected depth interval, the maximum concentration between the samples is shown

AECOM

TPH-D IN SOIL, 0-2 FEET BGS

Site: 128 Hurricane St. Los Angeles, CA	Figure: 4A
Project: 60553849	Date: 8/28/2018

Path: \\172.28.218.25\LosAngeles\Projects\ENV\City of LA BOE\60553849_TO5SewerEn\900-CAD-GIS\920-GIS or Graphics\Figure 4A - TPHd 0-2 ft.mxd



Legend

Boring Locations

- Soil Boring, Initial Investigation
- Soil Boring with Groundwater Sample, Initial Investigation
- Soil Boring with Methane Probe, Initial Investigation
- Soil Boring, Step-Out Investigation
- Soil Boring with Groundwater Sample, Step-Out Investigation
- Isoconcentration Contour (230 mg/kg)
- Test Pit Sample Location
- Approximate Location of Former Oil Well
- Site Boundary

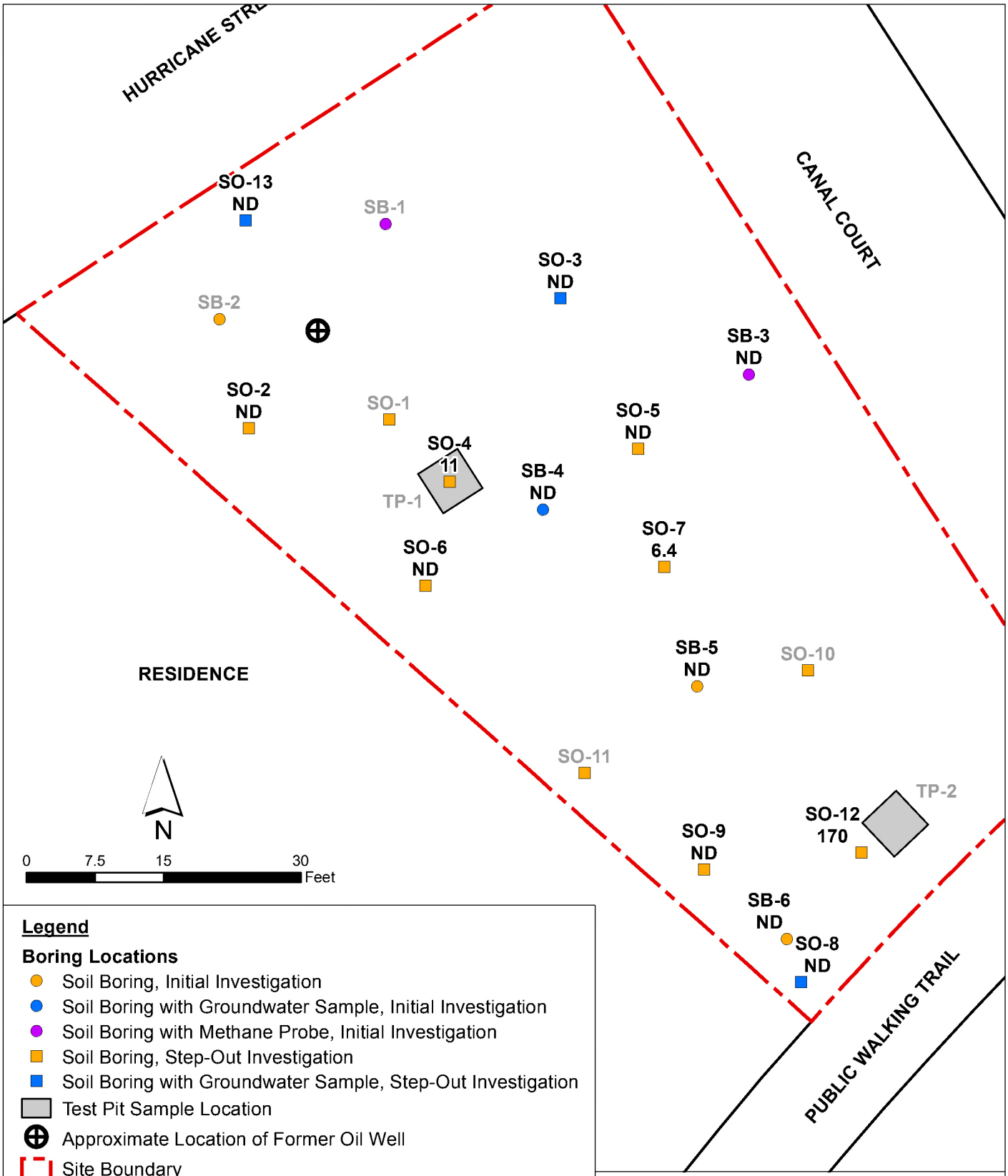
TPH-D - total petroleum hydrocarbons, diesel range
BGS - below ground surface
ND - not detected above the reporting limit
Concentrations shown in milligrams per kilogram (mg/kg)
Gray labels indicate TPH-D was not sampled at this depth interval at that location
Red labels indicate exceedance of residential screening level (230 mg/kg)
If more than one sample was collected within the selected depth interval, the maximum concentration between the samples is shown
Borings SO-1 and SO-4 were not included in the contour

AECOM

TPH-D IN SOIL, 2-4 FEET BGS

Site:	Figure:
128 Hurricane St. Los Angeles, CA	4B
Project: 60553849	Date: 8/28/2018

Path: \\172.28.218.25\LosAngeles\Projects\ENV\City of LA BOE\60553849_TO5SewerEn\900-CAD-GIS\920-GIS or Graphics\Figure 4B - TPHd 2-4 ft.mxd



Legend

Boring Locations

- Soil Boring, Initial Investigation
- Soil Boring with Groundwater Sample, Initial Investigation
- Soil Boring with Methane Probe, Initial Investigation
- Soil Boring, Step-Out Investigation
- Soil Boring with Groundwater Sample, Step-Out Investigation
- Test Pit Sample Location
- Approximate Location of Former Oil Well
- Site Boundary

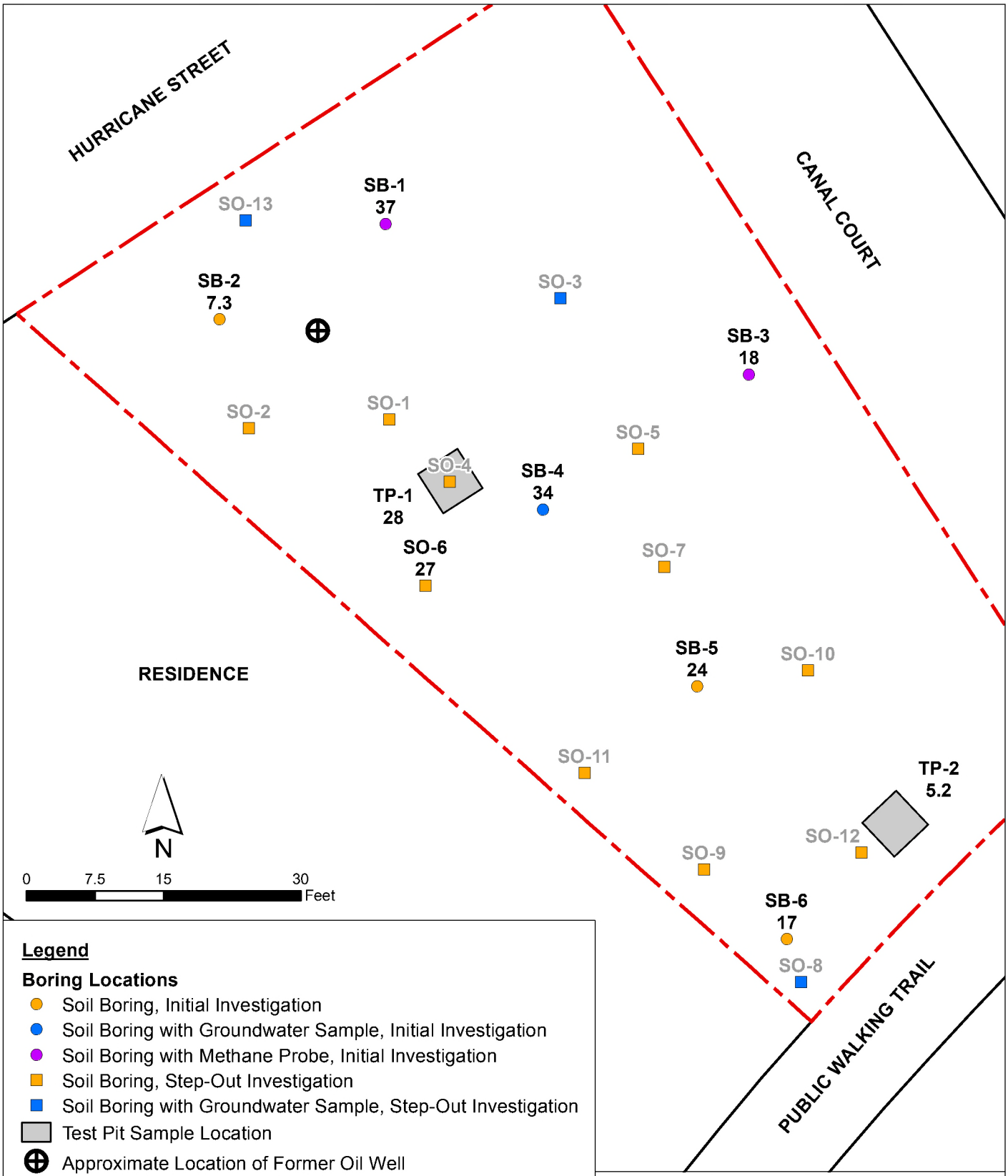
TPH-D - total petroleum hydrocarbons, diesel range
BGS - below ground surface
ND - not detected above the reporting limit
Concentrations shown in milligrams per kilogram (mg/kg)
Gray labels indicate TPH-D was not sampled at this depth interval at that location
If more than one sample was collected within the selected depth interval, the maximum concentration between the samples is shown

AECOM

TPH-D IN SOIL, >4 FEET BGS

Site: 128 Hurricane St. Los Angeles, CA	Figure: 4C
Project: 60553849	Date: 8/28/2018

Path: \\172.28.218.25\LosAngeles\Projects\ENV\City of LA BOE\60553849_TO5SewerEn\900-CAD-GIS\920-GIS or Graphics\Figure 4C - TPHd 4 ft.mxd



Legend

Boring Locations

- Soil Boring, Initial Investigation
- Soil Boring with Groundwater Sample, Initial Investigation
- Soil Boring with Methane Probe, Initial Investigation
- Soil Boring, Step-Out Investigation
- Soil Boring with Groundwater Sample, Step-Out Investigation
- Test Pit Sample Location
- Approximate Location of Former Oil Well
- Site Boundary

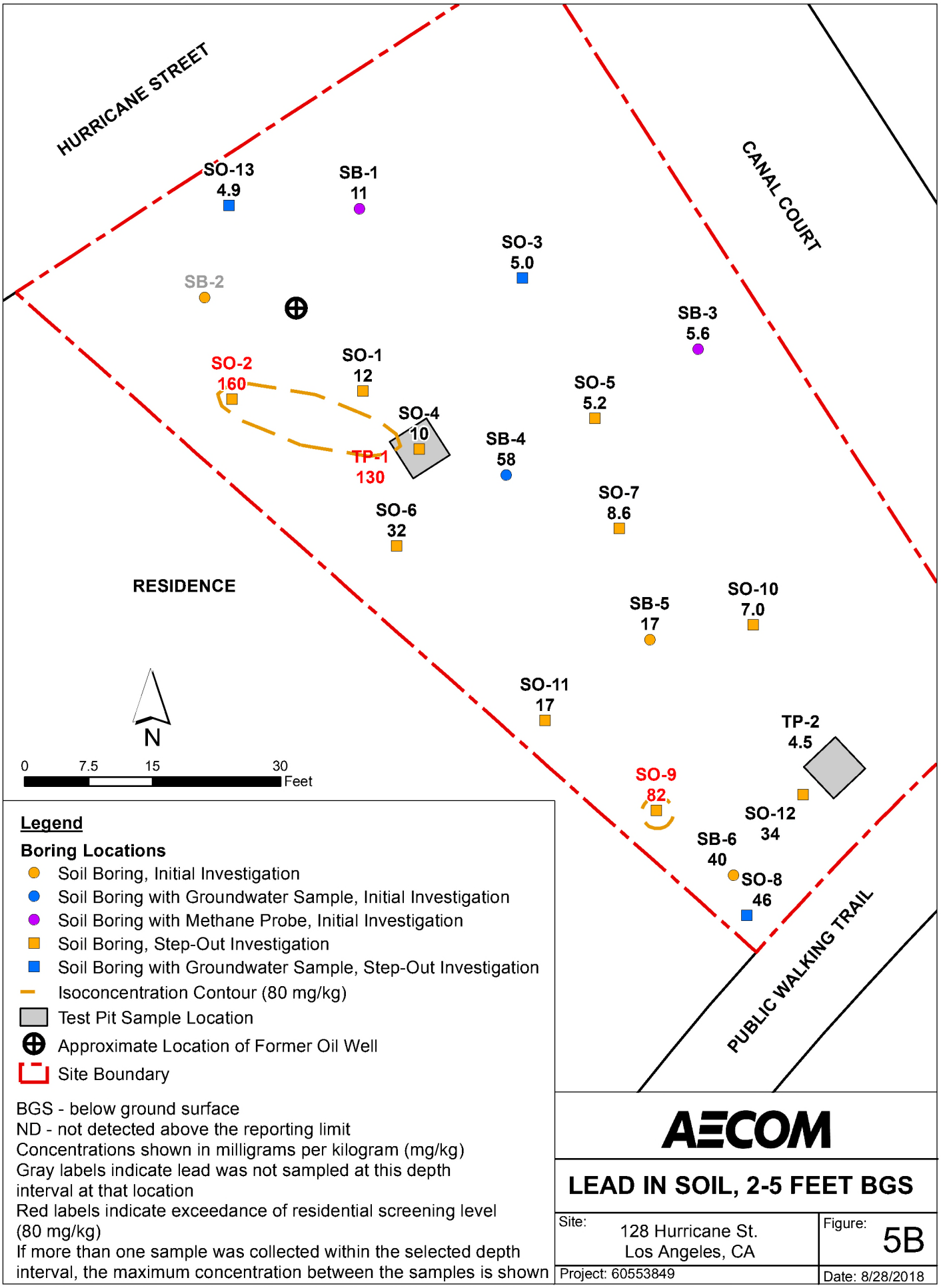
BGS - below ground surface
ND - not detected above the reporting limit
Concentrations shown in milligrams per kilogram (mg/kg)
Gray labels indicate lead was not sampled at this depth interval at that location
If more than one sample was collected within the selected depth interval, the maximum concentration between the samples is shown

AECOM

LEAD IN SOIL, 0-2 FEET BGS

Site: 128 Hurricane St. Los Angeles, CA	Figure: 5A
Project: 60553849	Date: 8/28/2018

Path: \\172.28.218.25\LosAngeles\Projects\ENV\City of LA BOE\60553849_TO5SewerEn\900-CAD-GIS\920-GIS or Graphics\Figure 5A - Lead 0-2 ft.mxd



Legend

Boring Locations

- Soil Boring, Initial Investigation
- Soil Boring with Groundwater Sample, Initial Investigation
- Soil Boring with Methane Probe, Initial Investigation
- Soil Boring, Step-Out Investigation
- Soil Boring with Groundwater Sample, Step-Out Investigation
- Isoconcentration Contour (80 mg/kg)
- Test Pit Sample Location
- Approximate Location of Former Oil Well
- Site Boundary

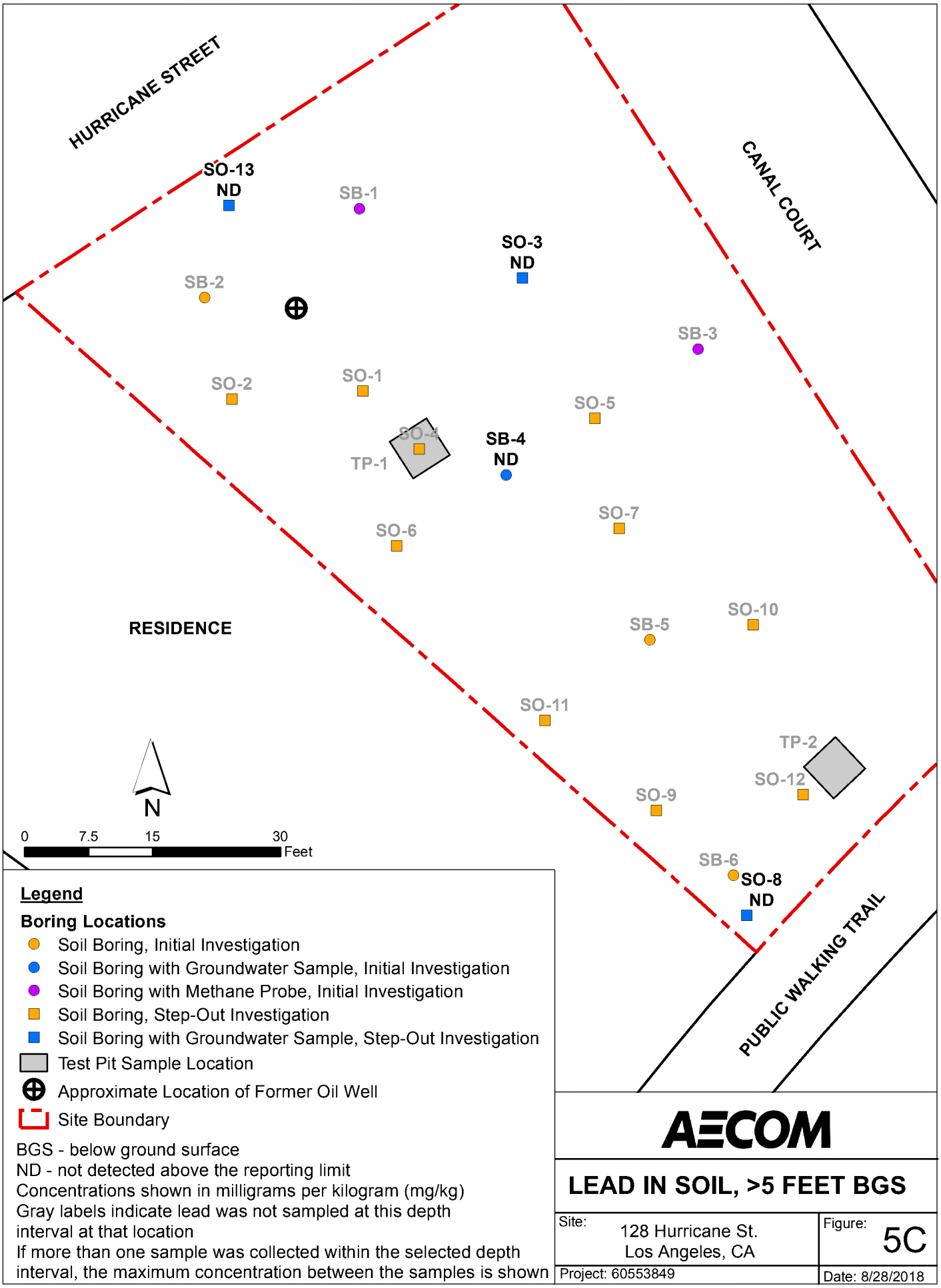
BGS - below ground surface
ND - not detected above the reporting limit
Concentrations shown in milligrams per kilogram (mg/kg)
Gray labels indicate lead was not sampled at this depth interval at that location
Red labels indicate exceedance of residential screening level (80 mg/kg)
If more than one sample was collected within the selected depth interval, the maximum concentration between the samples is shown

AECOM

LEAD IN SOIL, 2-5 FEET BGS

Site: 128 Hurricane St. Los Angeles, CA	Figure: 5B
Project: 60553849	Date: 8/28/2018

Path: \\172.28.218.25\LosAngeles\Projects\ENV\City of LA BOE\60553849_TO5SewerEn\900-CAD-GIS\920-GIS or Graphics\Figure 5B - Lead 2-5 ft.mxd



Legend

Boring Locations

- Soil Boring, Initial Investigation
- Soil Boring with Groundwater Sample, Initial Investigation
- Soil Boring with Methane Probe, Initial Investigation
- Soil Boring, Step-Out Investigation
- Soil Boring with Groundwater Sample, Step-Out Investigation
- Test Pit Sample Location
- Approximate Location of Former Oil Well
- Site Boundary

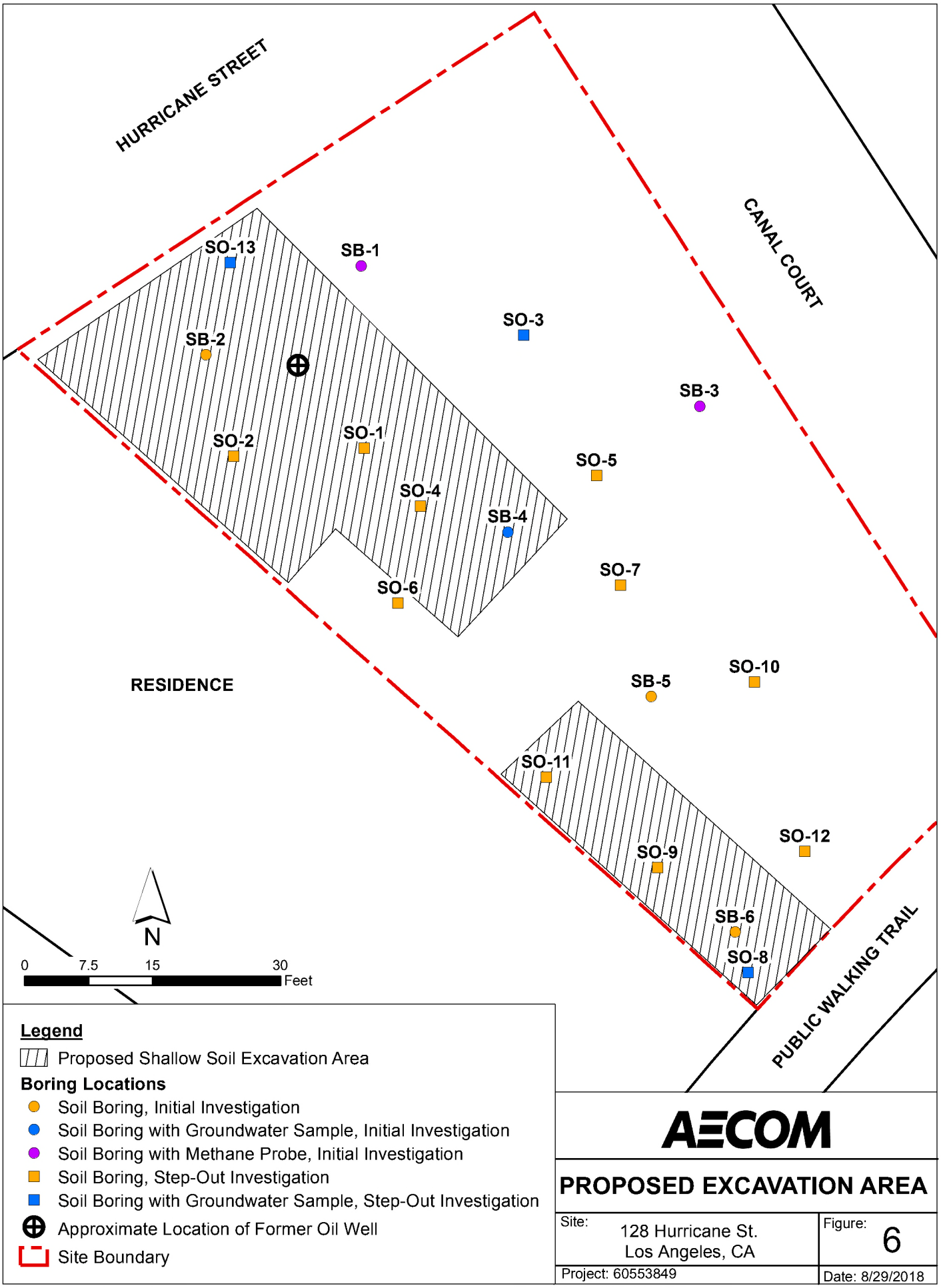
BGS - below ground surface
ND - not detected above the reporting limit
Concentrations shown in milligrams per kilogram (mg/kg)
Gray labels indicate lead was not sampled at this depth interval at that location
If more than one sample was collected within the selected depth interval, the maximum concentration between the samples is shown

AECOM

LEAD IN SOIL, >5 FEET BGS

Site: 128 Hurricane St. Los Angeles, CA	Figure: 5C
Project: 60553849	Date: 8/28/2018

Path: \\172.28.218.25\LosAngeles\Projects\ENV\City of LA BOE\60553849_TO5SewerEn\900-CAD-GIS\920-GIS or Graphics\Figure 5C - Lead 5 ft.mxd



Legend

- Proposed Shallow Soil Excavation Area

Boring Locations

- Soil Boring, Initial Investigation
- Soil Boring with Groundwater Sample, Initial Investigation
- Soil Boring with Methane Probe, Initial Investigation
- Soil Boring, Step-Out Investigation
- Soil Boring with Groundwater Sample, Step-Out Investigation
- Approximate Location of Former Oil Well
- Site Boundary

AECOM

PROPOSED EXCAVATION AREA

Site:	Figure:
128 Hurricane St. Los Angeles, CA	6
Project: 60553849	Date: 8/29/2018

Path: \\172.28.218.25\LosAngeles\Projects\ENV\City of LA BOE\60553849_TO5SewerEn\900-CAD-GIS\920-GIS or Graphics\Figure 6 - Proposed Excavation.mxd

Tables

TABLE 1
INVESTIGATION SUMMARY
128 Hurricane Street
Los Angeles, California

Boring ID	Total Depth	Boring Refusal	Encountered Groundwater	Methane Probe	Sample Depths	Analytical Methods
SB-1	4.5	4.5 feet - Gravel and concrete debris	No	Yes; probe set at 4 feet bgs	0.5	TPH, Pesticides, PCBs, Metals, Herbicides
					1	VOCs, TPH
					2.5	TPH, Metals
SB-2	2.5	2.5 feet - hard surface	No	No	0.5	TPH, Metals
					1	VOCs, TPH
SB-3	6	6 feet - heaving sands	Yes; Encountered at 6 feet bgs; static groundwater at 4 feet bgs	Yes; probe set at 3.5 feet bgs	0.5	Pesticides, Metals
					1	VOCs, TPH
					2.5	TPH, Metals
					5	VOCs, TPH, Metals
SB-4	20	No	Yes; Encountered at 5 feet bgs; static at 5.5 feet bgs	No	0.5	TPH, Pesticides, Metals
					1	VOCs, TPH, Metals
					2.5	TPH, Metals
					3.5	VOCs, TPH, SVOC, Metals
					5	VOCs, TPH, SVOC, Metals
					10	VOCs, TPH, Metals
					15	VOCs, TPH
					GW	VOCs, TPH, Metals
SB-5	5	5 feet - heaving sands	Yes, Encountered at 5 feet bgs	No	0.5	Metals
					1	VOCs, TPH, Metals
					2.5	TPH, Metals
					5	VOCs, TPH
SB-6	5	5 feet - heaving sands	Yes, Encountered at 4 feet bgs	No	0.5	TPH, Pesticides, PCBs, Metals, Herbicides
					1	VOCs, TPH
					2.5	TPH, Metals
					5	VOCs, TPH, Metals
SO-1	3	3 feet - hard, flat surface	No	No	2.5	TPH, Lead
SO-2	5	No	No	No	2.5	TPH, Lead
					3.5	TPH, Lead
					5	TPH, Lead
SO-3	10	No	Yes, Encountered at 6 feet bgs	No	2.5	TPH, Lead
					3.5	TPH, Lead
					5	TPH, Lead
					10	TPH, Lead
					GW	TPH, General Minerals
SO-4	5.5	No	No	No	2.5	TPH, Lead
					3.5	TPH, Lead
					5	TPH, Lead
SO-5	5	No	Yes, Encountered at 5 feet bgs	No	2.5	TPH, Lead
					3.5	TPH, Lead
					5	TPH, Lead
SO-6	5	No	No	No	0.5	TPH, Lead
					2.5	TPH, Lead
					3.5	TPH, Lead
					5	TPH, Lead

TABLE 1
INVESTIGATION SUMMARY
128 Hurricane Street
Los Angeles, California

Boring ID	Total Depth	Boring Refusal	Encountered Groundwater	Methane Probe	Sample Depths	Analytical Methods
SO-7	5	No	No	No	2.5	TPH, Lead
					3.5	TPH, Lead
					5	TPH, Lead
SO-8	10	No	Yes, Encountered at 5 feet bgs	No	2.5	TPH, Lead
					3.5	TPH, Lead
					5	TPH, Lead
					10	TPH, Lead
					GW	TPH, General Minerals
SO-9	5	No	No	No	2.5	TPH, Lead
					3.5	TPH, Lead
					5	TPH, Lead
SO-10	3.5	No	No	No	2.5	TPH, Lead
					3.5	TPH, Lead
SO-11	3.5	No	No	No	2.5	TPH, Lead
					3.5	TPH, Lead
SO-12	5	No	No	No	2.5	TPH, Lead
					3.5	TPH, Lead
					5	TPH, Lead
SO-13	10	No	Yes, Encountered at 5.5 feet bgs	No	2.5	TPH, Lead
					3.5	TPH, Lead
					5	TPH, Lead
					10	TPH, Lead
					GW	TPH, General Minerals
TP-1	3	No	No	No	1.5	TPH, Lead
					2.5	TPH, Lead
TP-2	3	No	No	No	0.5	TPH, Lead
					2.5	TPH, Lead

Notes
bgs - below ground surface
Total petroleum hydrocarbons (TPH) were analyzed using USEPA Method 8015M
Pesticides were analyzed using USEPA Method 8081A
Polychlorinated biphenyls (PCBS) were analyzed using USEPA Method 8082
Metals were analyzed using USEPA Method 6010B
Herbicides were analyzed using USEPA Method 8151A
Volatile organic compounds (VOCs) were analyzed using USEPA Method 8260B/5035
General Minerals were analyzed using
Semivolatile organic compounds (SVOCs) were analyzed using USEPA 8270C

TABLE 2
SOIL ANALYTICAL RESULTS
128 Hurricane Street
Los Angeles, California

Detected Analytes	California Screening Level Residential	California Screening Level Commercial	Boring ID:	TP-01	TP-01	TP-02	TP-02	TP-02	SB-01	SB-01	SB-01	SB-02	SB-02	SB-02	SB-03	SB-03	SB-03	SB-03	SB-03
			Sample ID:	TP-1-1.5	TP-1-2.5	TP-2-0.5	TP-2-2.5	TP-2-2.5 DUP	SB-1-0.5	SB-1-1	SB-1-2.5	SB-2-0.5	SB-2-1	SB-2-1 DUP	SB-3-0.5	SB-3-1	SB-3-2.5	SB-3-5	SB-3-5 DUP
			Sample Date:	06/21/18	06/21/18	06/21/18	06/21/18	06/21/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18
			Sample Depth:	1.5	2.5	0.5	2.5	2.5	0.5	1.0	2.5	0.5	1.0	1.0	0.5	1.0	2.5	5.0	5.0
Metals																			
Arsenic	12*	12*	mg/kg	**2.8**	**4.3**	**4.3**	**2.4**	**2.2**	**2.2**	-	**2.8**	**2.7**	-	-	**2.4**	-	**2.2**	-	-
Barium	15000	220000	mg/kg	**42**	**81**	**57**	**35**	**51**	**50**	-	**39**	**39**	-	-	**69**	-	**83**	-	-
Chromium	36000	170000	mg/kg	**12**	**15**	**12**	**11**	**16**	**13**	-	**14**	**11**	-	-	**17**	-	**13**	-	-
Cobalt	23	350	mg/kg	**3.6**	**5.4**	**3.8**	ND (<3.0)	**4.4**	**3.3**	-	**3.5**	**3.3**	-	-	**5.3**	-	**3.8**	-	-
Copper	3100	47000	mg/kg	**3.1**	**11**	**3.8**	ND (<3.0)	**3.4**	**6.1**	-	ND (<3.0)	ND (<3.0)	-	-	**3.6**	-	ND (<3.0)	-	-
Lead	80	320	mg/kg	**28**	**130**	**5.2**	**4.5**	ND (<3.0)	**37**	-	**11**	**7.3**	-	-	**18**	-	**5.6**	**3.8**	-
Mercury	1	4.4	mg/kg	**0.079**	**0.078**	**0.36**	**0.027**	**0.022**	**0.13**	-	**0.068**	**0.080**	-	-	**0.066**	-	**0.63**	-	-
Nickel	490	3100	mg/kg	**10**	**26**	**8.5**	**8.8**	**13**	**10**	-	**10**	**9.4**	-	-	**10**	-	**8.9**	-	-
Vanadium	390	1000	mg/kg	**26**	**51**	**25**	**21**	**30**	**28**	-	**26**	**23**	-	-	**36**	-	**24**	-	-
Zinc	23000	350000	mg/kg	**57**	**160**	**20**	**18**	**23**	**73**	-	**38**	**23**	-	-	**42**	-	**22**	-	-
Organochlorine Pesticides																			
alpha-Chlordane*	0.44	1.5	mg/kg	-	-	-	-	-	**0.0069**	-	-	-	-	-	ND (<0.004)	-	-	-	-
Chlordane	0.44	1.5	mg/kg	-	-	-	-	-	**0.035**	-	-	-	-	-	ND (<0.02)	-	-	-	-
4,4´-DDD	1.9	9.6	mg/kg	-	-	-	-	-	**0.004**	-	-	-	-	-	ND (<0.004)	-	-	-	-
4,4´-DDE	2	9.3	mg/kg	-	-	-	-	-	ND (<0.004)	-	-	-	-	-	ND (<0.004)	-	-	-	-
4,4´-DDT	1.9	8.5	mg/kg	-	-	-	-	-	ND (<0.004)	-	-	-	-	-	ND (<0.004)	-	-	-	-
Dieldrin	0.034	0.14	mg/kg	-	-	-	-	-	**0.0062**	-	-	-	-	-	**0.0055**	-	-	-	-
Endosulfan II**	470	7000	mg/kg	-	-	-	-	-	ND (<0.004)	-	-	-	-	-	ND (<0.004)	-	-	-	-
gamma-Chlordane**	0.44	1.5	mg/kg	-	-	-	-	-	ND (<0.004)	-	-	-	-	-	ND (<0.004)	-	-	-	-
Total Petroleum Hydrocarbons																			
Gasoline Range Organics (C6-C10)	740	3900	mg/kg	ND (<5.0)	ND (<50)	ND (<25)	ND (<25)	ND (<25)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	-	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)
Diesel Range Organics (C10-C23)	230	1100	mg/kg	**14**	**690**	ND (<25)	ND (<25)	ND (<25)	**5.2**	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	-	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)
Oil Range Organics (C23-C44)	11000	140000	mg/kg	**220**	**4300**	ND (<25)	ND (<25)	ND (<25)	**58**	**100**	**63**	**21**	**23**	**23**	-	**20**	**33**	**12**	**8.7**
Volatile Organic Compounds																			
Acetone	61000	670000	mg/kg	-	-	-	-	-	-	ND (<0.05)	-	-	ND (<0.05)	ND (<0.05)	-	ND (<0.05)	-	ND (<0.05)	ND (<0.05)
Carbon Disulfide	770	3500	mg/kg	-	-	-	-	-	-	ND (<0.005)	-	-	**0.005**	ND (<0.005)	-	ND (<0.005)	-	ND (<0.005)	ND (<0.005)

Notes

Hierarchy of sources for California screening levels:

1. Department of Toxic Substances Control, Human and Ecological Risk Office, Human Health Risk Assessment Note 3, June 2018
2. United States Environmental Protection Agency Regional Screening Level, May 2018
3. Direct exposure human health environmental screening levels, San Francisco Bay Regional Water Quality Control Board, 2016

* Background concentration for arsenic in Southern California shown for comparison

** Endosulfan and chlordane screening levels used as surrogates for endosulfan II and gamma-chlordane, respectively

Exceeds residential screening level

Exceeds commercial screening level

mg/kg - milligrams per kilogram

ND - not detected

- Not Analyzed

Sample depth in feet below ground surface

TABLE 2
SOIL ANALYTICAL RESULTS
128 Hurricane Street
Los Angeles, California

Detected Analytes	California Screening Level Residential	California Screening Level Commercial	Boring ID:	SB-04	SB-04	SB-04	SB-04	SB-04	SB-04	SB-04	SB-05	SB-05	SB-05	SB-05	SB-06	SB-06	SB-06	SB-06	SO-01
			Sample ID:	SB-4-0.5	SB-4-1	SB-4-2.5	SB-4-3.5	SB-4-5	SB-4-10	SB-4-15	SB-5-0.5	SB-5-1	SB-5-2.5	SB-5-5	SB-6-0.5	SB-6-1	SB-6-2.5	SB-6-5	SO-1-2.5
			Sample Date:	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/28/18
			Sample Depth:	0.5	1.0	2.5	3.5	5.0	10.0	15.0	0.5	1.0	2.5	5.0	0.5	1.0	2.5	5.0	2.5
Metals																			
Arsenic	12*	12*	mg/kg	**3**	-	-	**3.5**	**2**	**4.1**	-	**2.8**	**3.3**	**4.3**	-	**2.7**	-	**2.9**	-	-
Barium	15000	220000	mg/kg	**54**	-	-	**62**	**10**	**21**	-	**54**	**56**	**92**	-	**60**	-	**81**	-	-
Chromium	36000	170000	mg/kg	**13**	-	-	**13**	**11**	**10**	-	**10**	**11**	**15**	-	**13**	-	**12**	-	-
Cobalt	23	350	mg/kg	**3.2**	-	-	**4.0**	ND (<3.0)	ND (<3.0)	-	**3.1**	**3.3**	**3.4**	-	**3.8**	-	**4.0**	-	-
Copper	3100	47000	mg/kg	**10**	-	-	**15**	ND (<3.0)	ND (<3.0)	-	**7.2**	**16**	**5.4**	-	**5.4**	-	**14**	-	-
Lead	80	320	mg/kg	**34**	**6.7**	**6.8**	**58**	**3.4**	ND (<3.0)	-	**12**	**24**	**17**	-	**17**	-	**40**	**5.1**	**12**
Mercury	1	4.4	mg/kg	**0.25**	-	-	**0.090**	**0.030**	ND (<0.020)	-	**0.42**	**2.4**	**0.038**	-	**0.19**	-	**0.084**	-	-
Nickel	490	3100	mg/kg	**9.2**	-	-	**14**	**7.2**	**6.8**	-	**7.5**	**8.9**	**13**	-	**10**	-	**13**	-	-
Vanadium	390	1000	mg/kg	**25**	-	-	**30**	**25**	**23**	-	**22**	**27**	**29**	-	**27**	-	**34**	-	-
Zinc	23000	350000	mg/kg	**74**	-	-	**99**	**7.2**	**8.4**	-	**30**	**51**	**100**	-	**62**	-	**120**	-	-
Organochlorine Pesticides																			
alpha-Chlordane*	0.44	1.5	mg/kg	**0.018**	-	-	-	-	-	-	-	-	-	-	**0.012**	-	-	-	-
Chlordane	0.44	1.5	mg/kg	**0.078**	-	-	-	-	-	-	-	-	-	-	**0.086**	-	-	-	-
4,4′-DDD	1.9	9.6	mg/kg	ND (<0.004)	-	-	-	-	-	-	-	-	-	-	ND (<0.004)	-	-	-	-
4,4′-DDE	2	9.3	mg/kg	ND (<0.004)	-	-	-	-	-	-	-	-	-	-	**0.022**	-	-	-	-
4,4′-DDT	1.9	8.5	mg/kg	**0.0043**	-	-	-	-	-	-	-	-	-	-	**0.018**	-	-	-	-
Dieldrin	0.034	0.14	mg/kg	**0.031**	-	-	-	-	-	-	-	-	-	-	ND (<0.002)	-	-	-	-
Endosulfan II**	470	7000	mg/kg	ND (<0.004)	-	-	-	-	-	-	-	-	-	-	**0.0063**	-	-	-	-
gamma-Chlordane**	0.44	1.5	mg/kg	**0.0092**	-	-	-	-	-	-	-	-	-	-	**0.0058**	-	-	-	-
Total Petroleum Hydrocarbons																			
Gasoline Range Organics (C6-C10)	740	3900	mg/kg	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<25)	ND (<5.0)	ND (<5.0)	ND (<5.0)	-	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<25)	ND (<5.0)	ND (<5.0)
Diesel Range Organics (C10-C23)	230	1100	mg/kg	ND (<5.0)	ND (<5.0)	ND (<5.0)	**670**	ND (<5.0)	ND (<5.0)	ND (<5.0)	-	ND (<5.0)	**130**	ND (<5.0)	ND (<5.0)	**6.7**	**530**	ND (<5.0)	**11**
Oil Range Organics (C23-C44)	11000	140000	mg/kg	**98**	**28**	**47**	**2000**	**40**	**11**	**11**	-	**80**	**840**	**30**	**61**	**86**	**2600**	**82**	**150**
Volatile Organic Compounds																			
Acetone	61000	670000	mg/kg	-	ND (<0.05)	-	**0.056**	ND (<0.05)	ND (<0.05)	ND (<0.05)	-	ND (<0.05)	-	ND (<0.05)	-	ND (<0.05)	-	ND (<0.05)	-
Carbon Disulfide	770	3500	mg/kg	-	**0.0062**	-	ND (<0.005)	ND (<0.005)	ND (<0.005)	ND (<0.005)	-	ND (<0.005)	-	ND (<0.005)	-	**0.01**	-	ND (<0.005)	-

Notes

Hierarchy of sources for California screening levels:

1. Department of Toxic Substances Control, Human and Ecological Risk Office, Human Health Risk Assessment Note 3, June 2018
2. United States Environmental Protection Agency Regional Screening Level, May 2018
3. Direct exposure human health environmental screening levels, San Francisco Bay Regional Water Quality Control Board, 2016

* Background concentration for arsenic in Southern California shown for comparison

** Endosulfan and chlordane screening levels used as surrogates for endosulfan II and gamma-chlordane, respectively

Exceeds residential screening level

Exceeds commercial screening level

mg/kg - milligrams per kilogram

ND - not detected

- Not Analyzed

Sample depth in feet below ground surface

TABLE 2
SOIL ANALYTICAL RESULTS
128 Hurricane Street
Los Angeles, California
Page 3 of 5

Detected Analytes	California Screening Level Residential	California Screening Level Commercial		Boring ID:	SO-02	SO-02	SO-02	SO-03	SO-03	SO-03	SO-03	SO-04	SO-04	SO-04	SO-04	SO-05	SO-05	SO-05	SO-06	SO-06	SO-06	SO-06
				Sample ID:	SO-2-2.5	SO-2-3.5	SO-2-5	SO-3-2.5	SO-3-3.5	SO-3-5	SO-3-10	SO-4-2.5	SO-4-3.5	SO-4-5	SO-4-5DUP	SO-5-2.5	SO-5-3.5	SO-5-5	SO-6-0.5	SO-6-2.5	SO-6-3.5	SO-6-5
				Sample Date:	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18
				Sample Depth:	2.5	3.5	5.0	2.5	3.5	5.0	10.0	2.5	3.5	5.0	5.0	2.5	3.5	5.0	0.5	2.5	3.5	5.0
Metals																						
Arsenic	12*	12*	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	15000	220000	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	36000	170000	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	23	350	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	3100	47000	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	80	320	mg/kg	**29**	ND (<3.0)	**160**	**5.0**	ND (<3.0)	**3.6**	ND (<3.0)	ND (<3.0)	ND (<3.0)	**10**	**7.1**	**5.2**	**3.5**	**3.5**	**27**	**32**	**8.0**	ND (<3.0)
Mercury	1	4.4	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	490	3100	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	390	1000	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	23000	350000	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Organochlorine Pesticides																						
alpha-Chlordane*	0.44	1.5	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlordane	0.44	1.5	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,4´-DDD	1.9	9.6	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,4´-DDE	2	9.3	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,4´-DDT	1.9	8.5	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dieldrin	0.034	0.14	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Endosulfan II**	470	7000	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
gamma-Chlordane**	0.44	1.5	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Petroleum Hydrocarbons																						
Gasoline Range Organics (C6-C10)	740	3900	mg/kg	ND (<50)	ND (<50)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<50)	ND (<5.0)	ND (<5.0)
Diesel Range Organics (C10-C23)	230	1100	mg/kg	**99**	**1300**	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	**53**	ND (<5.0)	**11**	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	**180**	ND (<5.0)	ND (<5.0)
Oil Range Organics (C23-C44)	11000	140000	mg/kg	**1300**	**1900**	**6.6**	**20**	ND (<5.0)	ND (<5.0)	ND (<5.0)	**370**	ND (<5.0)	**330**	**7.5**	ND (<5.0)	ND (<5.0)	ND (<5.0)	**78**	**1100**	ND (<5.0)	ND (<5.0)
Volatile Organic Compounds																						
Acetone	61000	670000	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon Disulfide	770	3500	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes
Hierarchy of sources for California screening levels:
1. Department of Toxic Substances Control, Human and Ecological Risk Office, Human Health Risk Assessment Note 3, June 2018
2. United States Environmental Protection Agency Regional Screening Level, May 2018
3. Direct exposure human health environmental screening levels, San Francisco Bay Regional Water Quality Control Board, 2016

* Background concentration for arsenic in Southern California shown for comparison
** Endosulfan and chlordane screening levels used as surrogates for endosulfan II and gamma-chlordane, respectively
Exceeds residential screening level
Exceeds commercial screening level
mg/kg - milligrams per kilogram
ND - not detected
- Not Analyzed
Sample depth in feet below ground surface

TABLE 2
SOIL ANALYTICAL RESULTS
128 Hurricane Street
Los Angeles, California
Page 4 of 5

Detected Analytes	California Screening Level Residential	California Screening Level Commercial																			
			Boring ID:	**SO-07**	**SO-07**	**SO-07**	**SO-07**	**SO-08**	**SO-08**	**SO-08**	**SO-08**	**SO-09**	**SO-09**	**SO-09**	**SO-10**	**SO-10**	**SO-11**	**SO-11**	**SO-12**	**SO-12**	**SO-12**
			Sample ID:	**SO-7-2.5**	**SO-7-3.5**	**SO-7-5**	**SO-7-5DUP**	**SO-8-2.5**	**SO-8-3.5**	**SO-8-5**	**SO-8-10**	**SO-9-2.5**	**SO-9-3.5**	**SO-9-5**	**SO-10-2.5**	**SO-10-3.5**	**SO-11-2.5**	**SO-11-3.5**	**SO-12-2.5**	**SO-12-3.5**	**SO-12-5**
			Sample Date:	**06/28/18**	**06/28/18**	**06/28/18**	**06/28/18**	**06/28/18**	**06/28/18**	**06/28/18**	**06/28/18**	**06/28/18**	**06/28/18**	**06/28/18**	**06/28/18**	**06/28/18**	**06/28/18**	**06/28/18**	**06/28/18**	**06/28/18**	**06/28/18**
			Sample Depth:	**2.5**	**3.5**	**5.0**	**5.0**	**2.5**	**3.5**	**5.0**	**10.0**	**2.5**	**3.5**	**5.0**	**2.5**	**3.5**	**2.5**	**3.5**	**2.5**	**3.5**	**5.0**
Metals																					
Arsenic	12*	12*	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	15000	220000	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	36000	170000	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	23	350	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	3100	47000	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	80	320	mg/kg	**7.0**	**7.8**	**6.7**	**8.6**	**46**	ND (<3.0)	ND (<3.0)	ND (<3.0)	**82**	ND (<3.0)	ND (<3.0)	**6.2**	**7.0**	**17**	**8.6**	**5.9**	**9.2**	**34**
Mercury	1	4.4	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	490	3100	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	390	1000	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	23000	350000	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Organochlorine Pesticides																					
alpha-Chlordane*	0.44	1.5	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlordane	0.44	1.5	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,4´-DDD	1.9	9.6	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,4´-DDE	2	9.3	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,4´-DDT	1.9	8.5	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dieldrin	0.034	0.14	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Endosulfan II**	470	7000	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
gamma-Chlordane**	0.44	1.5	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Petroleum Hydrocarbons																					
Gasoline Range Organics (C6-C10)	740	3900	mg/kg	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<50)	ND (<5.0)	ND (<5.0)	ND (<5.0)	**58**	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<50)	ND (<5.0)	ND (<5.0)	**7.4**	ND (<5.0)
Diesel Range Organics (C10-C23)	230	1100	mg/kg	ND (<5.0)	ND (<5.0)	**6.4**	ND (<5.0)	**1700**	ND (<5.0)	ND (<5.0)	ND (<5.0)	**4600**	**61**	ND (<5.0)	ND (<5.0)	ND (<5.0)	**250**	**7.0**	**33**	**150**	**170**
Oil Range Organics (C23-C44)	11000	140000	mg/kg	**6.5**	**9.0**	**39**	**24**	**5100**	**19**	**5.0**	ND (<5.0)	**8200**	**240**	**8.2**	**32**	**7.5**	**1300**	**120**	**890**	**420**	**1600**
Volatile Organic Compounds																					
Acetone	61000	670000	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon Disulfide	770	3500	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes
Hierarchy of sources for California screening levels:
1. Department of Toxic Substances Control, Human and Ecological Risk Office, Human Health Risk Assessment Note 3, June 2018
2. United States Environmental Protection Agency Regional Screening Level, May 2018
3. Direct exposure human health environmental screening levels, San Francisco Bay Regional Water Quality Control Board, 2016

* Background concentration for arsenic in Southern California shown for comparison
** Endosulfan and chlordane screening levels used as surrogates for endosulfan II and gamma-chlordane, respectively
Exceeds residential screening level
Exceeds commercial screening level
mg/kg - milligrams per kilogram
ND - not detected
- Not Analyzed
Sample depth in feet below ground surface

TABLE 2
SOIL ANALYTICAL RESULTS
128 Hurricane Street
Los Angeles, California

Detected Analytes	California Screening Level Residential	California Screening Level Commercial	Boring ID:	SO-13	SO-13	SO-13	SO-13	SO-13
			Sample ID:	SO-13-2.5	SO-13-3.5	SO-13-5	SO-13-5DUP	SO-13-10
			Sample Date:	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18
			Sample Depth:	2.5	3.5	5.0	5.0	10.0
Metals								
Arsenic	12*	12*	mg/kg	-	-	-	-	-
Barium	15000	220000	mg/kg	-	-	-	-	-
Chromium	36000	170000	mg/kg	-	-	-	-	-
Cobalt	23	350	mg/kg	-	-	-	-	-
Copper	3100	47000	mg/kg	-	-	-	-	-
Lead	80	320	mg/kg	**4.9**	ND (<3.0)	ND (<3.0)	ND (<3.0)	ND (<3.0)
Mercury	1	4.4	mg/kg	-	-	-	-	-
Nickel	490	3100	mg/kg	-	-	-	-	-
Vanadium	390	1000	mg/kg	-	-	-	-	-
Zinc	23000	350000	mg/kg	-	-	-	-	-
Organochlorine Pesticides								
alpha-Chlordane*	0.44	1.5	mg/kg	-	-	-	-	-
Chlordane	0.44	1.5	mg/kg	-	-	-	-	-
4,4´-DDD	1.9	9.6	mg/kg	-	-	-	-	-
4,4´-DDE	2	9.3	mg/kg	-	-	-	-	-
4,4´-DDT	1.9	8.5	mg/kg	-	-	-	-	-
Dieldrin	0.034	0.14	mg/kg	-	-	-	-	-
Endosulfan II**	470	7000	mg/kg	-	-	-	-	-
gamma-Chlordane**	0.44	1.5	mg/kg	-	-	-	-	-
Total Petroleum Hydrocarbons								
Gasoline Range Organics (C6-C10)	740	3900	mg/kg	ND (<50)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)
Diesel Range Organics (C10-C23)	230	1100	mg/kg	**1900**	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)
Oil Range Organics (C23-C44)	11000	140000	mg/kg	**3700**	**9.7**	**6.6**	ND (<5.0)	ND (<5.0)
Volatile Organic Compounds								
Acetone	61000	670000	mg/kg	-	-	-	-	-
Carbon Disulfide	770	3500	mg/kg	-	-	-	-	-

Notes

Hierarchy of sources for California screening levels:

1. Department of Toxic Substances Control, Human and Ecological Risk Office, Human Health Risk Assessment Note 3, June 2018
2. United States Environmental Protection Agency Regional Screening Level, May 2018
3. Direct exposure human health environmental screening levels, San Francisco Bay Regional Water Quality Control Board, 2016

* Background concentration for arsenic in Southern California shown for comparison

** Endosulfan and chlordane screening levels used as surrogates for endosulfan II and gamma-chlordane, respectively

Exceeds residential screening level

Exceeds commercial screening level

mg/kg - milligrams per kilogram

ND - not detected

- Not Analyzed

Sample depth in feet below ground surface

TABLE 3
GROUNDWATER ANALYTICAL RESULTS
128 Hurricane Street
Los Angeles, California
Page 1 of 1

Detected Analytes	MCL	Gross Contamination ESL	Boring ID:	SB-04	SO-03	SO-08	SO-13
			Sample ID:	SB-4	SO-3	SO-8	SO-13
			Sample Date:	06/20/18	06/28/18	06/28/18	06/28/18
General Minerals							
Chloride	250	NA	mg/l	-	**1300**	**3800**	**1400**
Hardness	NA	NA	mg/l	-	**680**	**1600**	**730**
Nitrate as N	10	NA	mg/l	-	**0.56**	**0.60**	**0.37**
pH	NA	NA	ph units	-	**6.5**	**6.5**	**7.0**
Salinity	NA	NA	salinity u	-	**2.8**	**8.1**	**2.8**
Specific Conductance (EC)	900	NA	umhos/cm	-	**5200**	**14000**	**5200**
Sulfate	250	NA	mg/l	-	**140**	**560**	**160**
Total Dissolved Solids	500	NA	mg/l	-	**3300**	**8600**	**3300**
Metals							
Arsenic	0.01	50	mg/l	**0.1**	-	-	-
Barium	1	50	mg/l	**0.3**	-	-	-
Chromium	0.05	50	mg/l	**0.026**	-	-	-
Cobalt	NA	50	mg/l	**0.006**	-	-	-
Copper	1	50	mg/l	**0.017**	-	-	-
Lead	0.015	50	mg/l	**0.011**	-	-	-
Molybdenum	NA	50	mg/l	**0.06**	-	-	-
Nickel	0.1	50	mg/l	**0.049**	-	-	-
Vanadium	NA	50	mg/l	**0.035**	-	-	-
Zinc	5	50	mg/l	**0.046**	-	-	-
Total Petroleum Hydrocarbons							
Diesel Range Organics (C10-C23)	NA	2500	ug/l	**190**	**420**	**420**	**250**
Oil Range Organics (C23-C44)	NA	50000	ug/l	**170**	**560**	**230**	**340**

Notes
MCL - Maximum Contaminant Level (primary or secondary)
Gross contamination environmental screening level (ESL), San Francisco Bay Regional Water Quality Control Board, 2016
NA - Not published
- Not analyzed
mg/l - milligrams per liter
ug/l - micrograms per liter
umhos/cm - micromhos per centimeter
Exceeds MCL

Appendix A – Spectrum Geophysical Report

Geophysical Investigation

AECOM

Vacant Lot
128 Hurricane Street
Marina Del Rey, California
Project #1806131C

spectrum geophysics
REVEALING THE SUBSURFACE
20434 Corisco Street
Chatsworth, California 91311
1-877-565-3595

Geophysical Investigation
Vacant Lot
128 Hurricane Street
Marina Del Rey, California

Prepared For:
AECOM
300 South Grand Avenue, 8th Floor
Los Angeles, CA 90071

Prepared By:
Spectrum Geophysics
20434 Corisco Street
Chatsworth, CA 91311

June 28, 2018



Charles Carter
California Professional Geophysicist, P.Gp. 1051

spectrum geophysics
Revealing the Subsurface

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4	Contour Map of GPR Signal Intensity (12-25ns)



1.0 INTRODUCTION

Spectrum Geophysics conducted a geophysical investigation on June 13, 2018 at the vacant lot located at 128 Hurricane Street in Marina Del Rey, California. The purpose of the investigation was to delineate the surface trace of detectable buried structures such as abandonded oil wells , steel underground storage tanks (USTs), drums or vaults. The area of investigation, as designated by the Kaleena Johnson of AECOM, was a soil covered lot with approximate dimensions of 45 feet by 85 feet.

The expected surficial geology in the upper 10 feet of the survey area (maximum depth of geophysical investigation) was Quaternary beach deposits consisting of unconsolidated, well-sorted fine- and medium-grained sand. There may also be artificial fill overlaying the Quaternary sediments within the survey area. The depth to the water table may be below the maximum depth of investigation, but moisture in the upper five feet of soil can contribute to corrosion of metallic survey targets and signal attenuation in ground penetrating radar data. Site interferences included the construction fence surrounding the survey area as well as the building and parked cars outside the fence.
Based on information provided by DOGGR, an oil well with API number 03713842 may be located within the survey area.

2.0 EQUIPMENT

The equipment used during this investigation consisted of a Geometrics G-858 cesium-vapor magnetometer (G-858), a CST Magna-Trak 100 fluxgate magnetic gradiometer, a Geonics EM-61 high-sensitivity metal detector (EM-61) linked to a Juniper Systems Allegro CX field computer (Allegro), a Sensors & Software “Noggin Smart Cart” ground penetrating radar (GPR) unit coupled to a 250 MHz antenna, a Fisher TW-6 M-Scope shallow-focus metal detector (M-Scope) and the RadioDetection RD4000 electromagnetic utility locator (RD4000).

3.0 METHODS AND FIELD PROCEDURES

Prior to data acquisition the geophysics grew established a grid with 5-foot stations on 10-foot survey lines parallel and perpendicular Hurricane Street. A survey chain with 5-foot markers was used to establish the survey lines and stations. Survey paint was used to mark the locations of each survey station on the ground.
Before the EM-61 survey begun the following instrument checks were performed. While the EM-61 was warming up, the battery level was checked and found to be greater than 12.5 volts. The EM-61 was then nulled at a base station with more than four meters of separation between the coils and any known metallic objects. A cable-shake test was performed to assure the cables were in good working condition and the connectors were fastened properly. Finally, a static test was run in which the instrument response to the soil and a metal bolt was monitored for amplitude and consistency of the readings. The EM-61 used in this survey was found to be working as expected.
Before acquiring any magnetics data, the G-858 was allowed to warm up for approximately five minutes while a system test was run and the sensor gained sufficient signal strength. The

battery level and memory space were also checked and found to be within acceptable levels. Significant anomalies identified in the contoured data were relocated with the G-858 in search mode and the fluxgate magnetometer to confirm the locations.

3.1 EM-61 High Sensitivity Metal Detector

The EM-61 high-sensitivity metal detector was used in an effort to delineate areas where metallic objects (such as steel underground storage tanks) may be buried. The EM-61 transmitter generates short pulses of a primary magnetic field that induces electromagnetic currents in nearby metallic objects. Between pulses, the two receiver coils measure the decay of these electromagnetic currents in millivolts (mV). The measured values are proportional to the metal content (ferrous and non-ferrous) of the nearby objects.



EM-61 data static test

During this investigation, EM-61 readings were collected along parallel northwest-southeast lines spaced 5 feet apart within the area of the investigation. EM-61 measurements were recorded every 2.5 feet along survey lines and stored in the Allegro field computer. It should be noted that the EM-61 data were collected within the blue dashed boundary identified in Figure 1. Top or bottom coil data can be useful for identifying buried metallic objects; although, the top coil generally has a greater response than the bottom coil to deeply buried objects. The differential data (top coil data minus the bottom coil data) were used during this survey to distinguish deeper targets such as metallic USTs or metallic piping from shallow ones such as scrap metal. Utilization of the differential data allows for the suppression of some near surface targets that could mask the response from deeper targets of interest. Data from the bottom coil were processed to locate shallow targets such as metallic pipes that could get filtered out in the differential data.

3.2 Total Field Magnetics

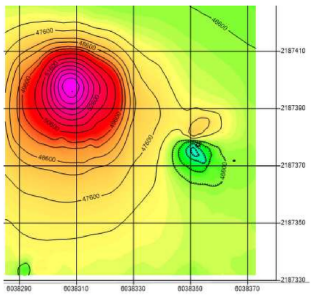


G-858 Magnetometer

A Geometrics G-858 Cesium-vapor magnetometer was used in an effort to identify significant magnetic anomalies that might be associated with massive buried ferromagnetic features, such as the steel casing from an abandoned oil well. The magnetometer used in this survey measures the earth's total magnetic field intensity in nanoteslas (nT). A very gradual change in the natural magnetic field is usually observed over small areas (a few acres) unless there are massive ferrous objects present. The shape and amplitude of a magnetic anomaly from a ferromagnetic object is dependent upon the geometry, mass, magnetic susceptibility of the object, depth to the object and the inclination of the earth's magnetic field in the survey area. Most magnetic anomalies from buried ferrous infrastructure like underground

storage tanks (USTs) or pipes are dipolar with the positive portion of the dipole centered over the southern extent of the ferrous metal and the negative portion located to the north of the object. Buried vertical structures like metallic well casing generally produce broad positive monopolar anomalies.

During this investigation, readings of the earth's total magnetic field were collected and stored in the G-858 console at 0.3-second intervals along the same northwest-southeast survey lines used for the EM-61 survey. The magnetic survey lines were spaced 5 feet apart within the grid. A marker button was pressed when the sensor passed each 5-foot grid point and the data were interpolated between these points. This resulted in a 1-foot station spacing on average. These data were processed in the field and used to generate contour maps to assist in identifying anomalies that may be caused by buried ferromagnetic features of interest.



Typical anomaly associated with a steel-cased well.

A magnetic anomaly, typical of a steel cased well, is characterized by a broad monopolar magnetic high with a magnitude ranging from 100's to 1000's of nanoteslas above the background magnetic field. These circular monopoles can have a radius of 10 feet or more depending on several factors like total mass of the casing and depth to the well head.

3.3 Ground Penetrating Radar

GPR was used to investigate anomalies detected with the EM-61. Because there were several EM-61 anomalies, GPR survey lines were tied to the established grid and covered the entire survey area. The GPR survey lines were spaced 5 feet apart. During the GPR survey, an antenna containing both a transmitter and a receiver was pushed along the ground surface. The transmitter emitted short pulses of high-frequency electromagnetic energy into the ground (with a center frequency of 250 MHz for this survey). When GPR waves encounter an interface of two materials having different electrical conduction properties, a portion of the energy is reflected back to the surface and received at the antenna at a time (in nanoseconds) that is related to the depth of the reflecting interface, where later times generally represent greater depths of investigation. A large contrast in GPR wave velocity between two mediums (soil and air for example) typically corresponds to a high amplitude reflection. A small contrast in GPR wave velocity between two mediums (concrete and sand for example) usually results in a low amplitude reflection which may not be detectable.



GPR Data Collection

The reflected signals were received at the antenna, transmitted to a control unit (the Smart Cart) and displayed on the computer screen as the data were being acquired. The data may be stored electronically, and subsequently processed with various software packages.

GPR data collected during this investigation were processed using GPR-Slice™ V7.0 by Dean Goodman. GPR-Slice™ allows the user to combine 2D radargrams to generate a 3D volume or a series of map view time slices. A series of 13 nanosecond time slices were generated and contoured based on GPR signal strength (absolute amplitude of reflected GPR scans). A total of 4 time slices were generated from the 2D radargrams acquired within the survey area. Each 13 nanosecond time slice represents approximately 1.5 vertical feet. The contour maps were used to identify GPR anomalies with lateral extents similar to a UST or backfilled UST pit. GPR profiles were reviewed in order to distinguish between horizontal GPR reflectors which may be the result of a utility or conductive soil layer, broad parabolic reflectors that may be the result of a UST or dipping GPR reflectors which may be the result of a sloped edge of a backfilled excavation. All GPR profiles and time slices were reviewed, and Figure 4 is presented as a representative time slice.

3.4 Electromagnetic Utility Location

During this investigation, both passive and active electromagnetic (EM) utility-locating methods were used in order to identify possible sources of EM-61 anomalies and to delineate the surface trace of detectable underground utilities.

Passive locating was used to find electrically conductive conduits energized by ambient radio frequencies (RF) produced by 50/60 cycle electrical, radio, audio, television, and communication transmissions. A receiver tuned to these frequencies was used to locate the re-radiated signal emitted by the conductor (i.e., conduit).

Active locating was initiated by conducting an EM signal at a known frequency (8 and 33 kHz for this site) on a conduit exposed at the surface. A receiver, tuned to these frequencies, was then used to locate the signal maxima (or surface trace) of the applied signal.

The Fisher M-Scope metal detector was used to relocate shallow buried metallic features identified in the EM-61 data. The M-Scope has a transmitter and a receiver at the ends of a short boom. The transmitter emits a radio-frequency source signal that induces a secondary magnetic field in metallic material in its immediate vicinity. The receiver measures the signal strength of this secondary magnetic field and emits an audible response, the volume and pitch of which increase in the presence of metallic material. The sensitivity of the M-Scope allows the operator to locate the lateral boundaries of a metallic object.

4.0 RESULTS

A geophysical interpretation map is presented in Figure 1, a contour map of the total magnetic field intensity is presented in Figure 2, a contour map of EM-61 differential data is presented in Figure 3 and contour map showing lateral changes in the GPR signal intensity is presented in Figure 4.

4.1 Total Field Magnetics

The colors in the contour map represent changes in the measured values of the total magnetic field. Green to deep blue colors on the color scale represent magnetic readings below background for this site. Background is set to yellow and light green colors (background at this site is approximately 47,000 nT which is common for this part of California). Orange to pink colors represent measured values that are increasingly above background. Surface metal, especially objects that extend beyond the height of the magnetometer sensor, generally produce moderate to high-amplitude "negative" magnetic anomalies with readings below background.

There are several moderate-amplitude negative anomalies in the magnetic data around the perimeter of the survey area at this site. These magnetic lows are the result of surface metal like the fence surrounding the site as well as the vehicles and apartment building located adjacent to the fence. There is one high-amplitude monopole with a radius of over 20 feet and a peak reading of over 90,000 nanoteslas. This is a common magnetic response to an abandoned oil well with 100's to 1000's of feet of steel casing. The magnetic peak was relocated with the cesium-vapor magnetometer in search mode and the fluxgate magnetometer and found to be located at 13E, 72N. A vertically oriented ferromagnetic object is expected to be buried at this location. It is very likely that the top of this object is less than 5 feet below the ground surface, especially considering that an EM-61 anomaly was also located at this approximate location. Considering DOGGR has a record of an abandoned oil well within the survey area it is very likely that an abandoned oil well is the source of the magnetic anomaly.

4.2 EM-61

The color scale in the contour map of the EM-61 differential data shows the magnitudes of the measured EM-61 values where yellow colors represent background readings, deep green to blue colors represent measured values below background (indicative of surface metal), while orange to pink represent increasing values above background. Due to the sensitivity of the EM-61, anomalies are usually exaggerated compared to the actual dimensions of the source metal. It is common for a sheared fence post to produce a 7-foot by 7-foot EM-61 anomaly while a 1000-gallon UST buried 4 feet below ground surface can produce an EM-61 anomaly with dimensions of 15 feet by 15 feet. The findings of the survey are discussed below.

There are several moderate-amplitude linear EM-61 anomalies along the perimeter of the survey area. These anomalies are the result of surface metal such as the fence. No anomalies with dimensions expected for a UST were located in the EM-61 data.

4.3 GPR

Several shallow high-amplitude GPR reflectors were imaged at this site, however no clear examples of an excavation or UST were identified in the GPR data. The changes in GPR reflector amplitudes may be from changes in the fill, animal burrows or small pieces of buried debris.

5.0 LIMITATIONS

The detection of subsurface objects and utilities is dependent upon acquiring reliable data with geophysical instruments above ground. These data may be interpreted as representative of subsurface objects. The EM waves or fields being measured, however, may be attenuated and/or distorted by a number of factors including soil moisture, corrosion, and proximity to other surface and subsurface structures. A discussion of the limitations of each method follows.

5.1 Total Field Magnetics

Metallic survey targets that are severely corroded may not be detectable with the magnetic method especially near massive objects like buildings or vehicles. When oil wells are the targets of a magnetics survey the casing may not be detectable if the distance between top of casing and the magnetometer sensor is too great, but 1000's of feet of casing can be detected with magnetics even if the well head is 25 feet below grade provided that there is not too much interference from surface metal. Total field magnetics surveys are subject to interference by induced magnetic fields associated with surface and subsurface cultural features that contain ferrous materials.

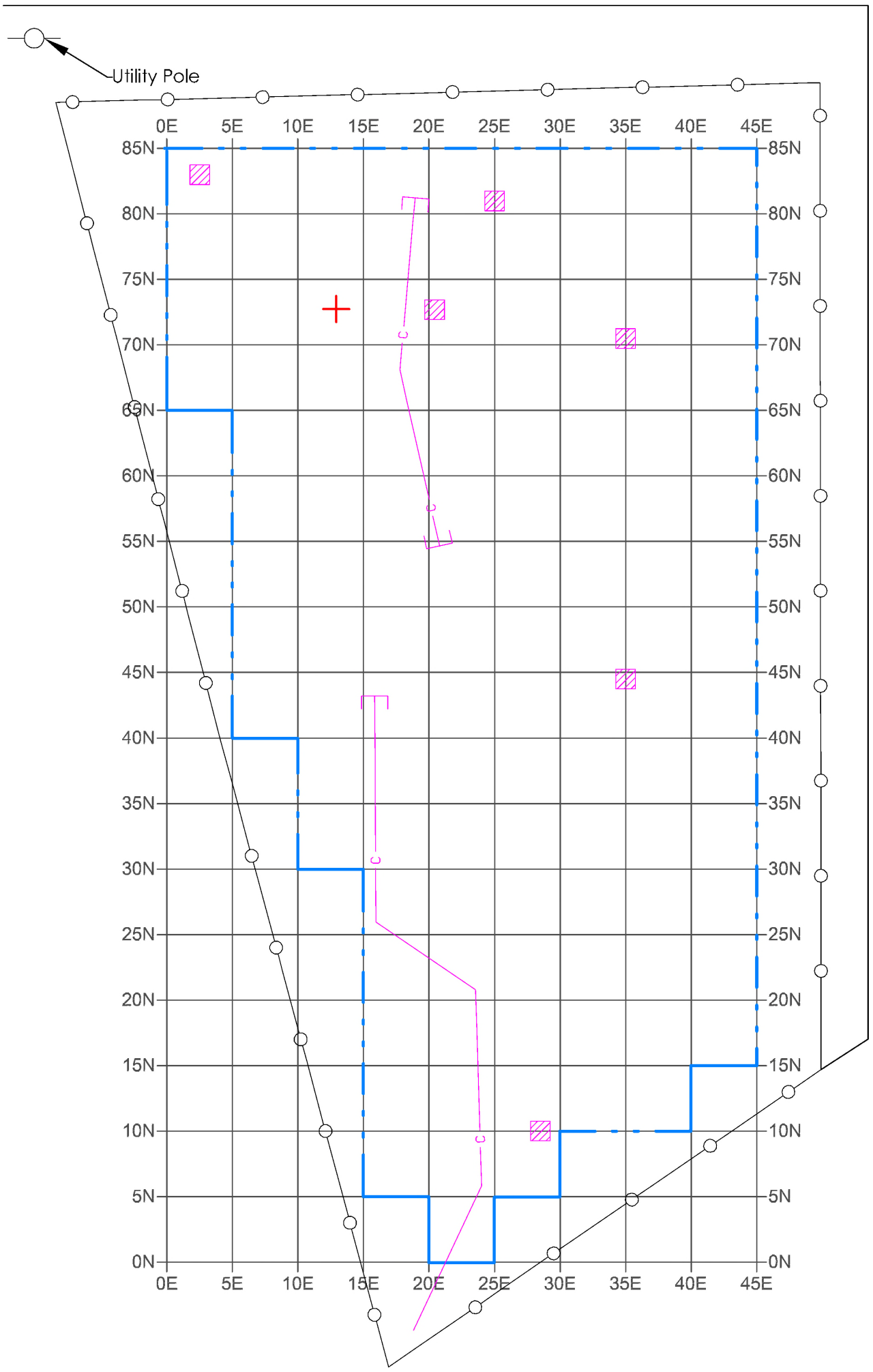
5.2 EM-61

The EM-61 is capable of detecting a 55-gallon drum up to a depth of 3 meters under favorable conditions. We recommend a minimum 10-foot buffer between the survey area and any metallic or metal bearing surface cultural features such as buildings, vehicles or aboveground piping which could severely compromise the quality of the data. The EM-61 data collected within 4 to 7 feet of surface metal such as the fence influenced the EM-61 response adversely. As a result, Spectrum cannot guarantee that all metallic objects present beneath the perimeter fence were identified.

5.3 GPR

The performance capability of GPR is dependent on the electrical conductivity of the soil at the site. If the soil conductivity is high, attenuation of the radar signal in the soil can severely restrict the maximum penetration depth of the radar signal. Under favorable conditions depth of penetration can be greater than 10 feet; however, average depths of GPR penetration in Southern California tend to range between 2-5 feet. Soil moisture, especially in clay rich soils, only increases the radar signal attenuation, further limiting the radar performance. The penetration depth of the GPR signal was approximately 3 feet in the area of investigation. As a consequence, some subsurface utilities may not have been detected, and USTs present at depths greater than 3 feet in the areas adjacent to significant metallic objects may not have been detected due to the shallow penetration of the GPR. Because of this limitation, Spectrum cannot guarantee that all non-metallic conduits, such as sewers and PVC water lines, have been identified within the area of investigation.

Hurricane Street



Canal Court

Area of Investigation

Magnetic Peak

C — Conduit

Chain Link Fence

Buried Metal

Trend Not Determined

N
W
E
S
North

Scale: (Feet)

0 5 10 20

***Note: Not all below ground utilities or features may be represented on this map

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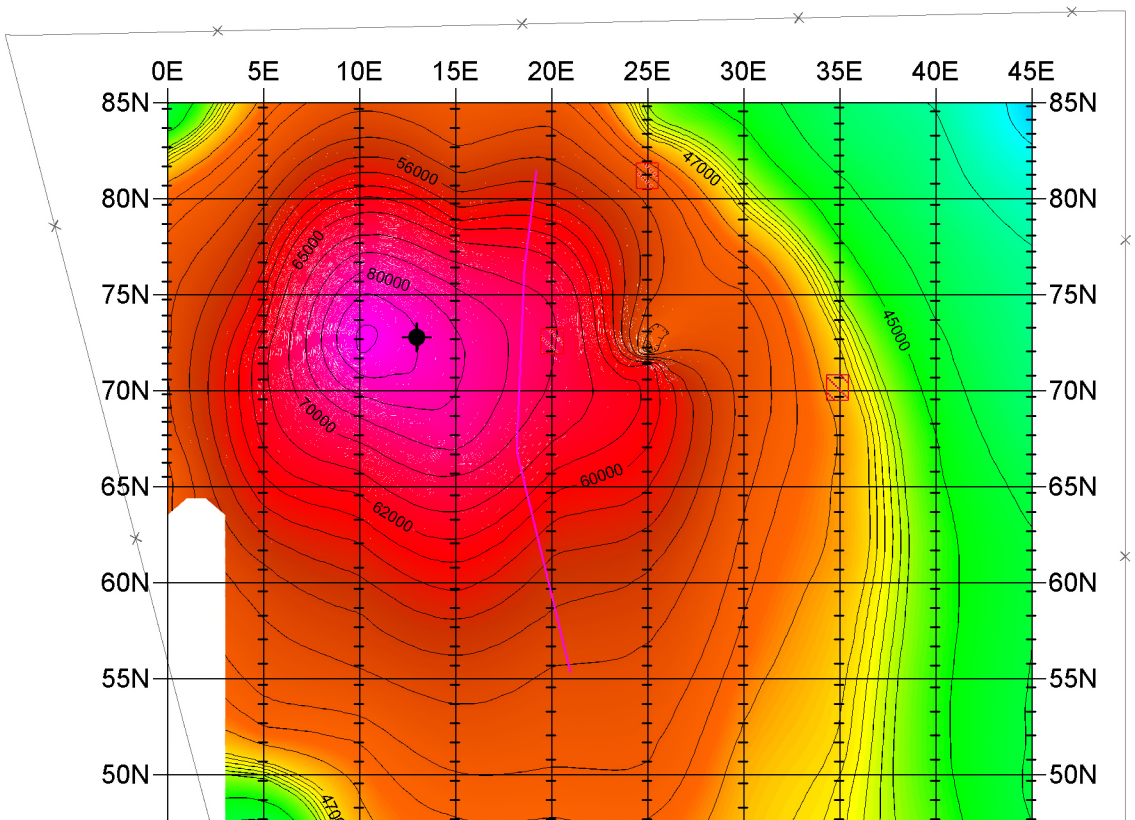
20434 CORISCO STREET
CHATSWORTH, CA 91311
Phone: (818) 886-4500
www.spectrum-geophysics.com

MAP: Geophysical Interpretation Map				FIGURE NO.: 1
PROJECT: Vacant Lot, 128 Hurricane Street, Marina Del Rey, California				
PREPARED FOR: AECOM, Los Angeles, California				PROJECT NO.: 1806131C
SCALE: 1 inch = 10 feet	DWG BY: RJW	REVIEWED BY: CC	DATE: 6/28/2018	



LEGEND

- \+ Magnetics Survey Station
- Magnetic Peak- Expected location of oil well
- Buried Metal
- Unknown Line
- Fence

0 5 10
(feet)

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Chatsworth, California 91311
(818) 886-4500
www.spectrum-geophysics.com

Contour Map of Total Magnetic Field Intensity

FIGURE 2

PROJECT: Vacant Lot
128 Hurricane Street
Marina Del Rey, California

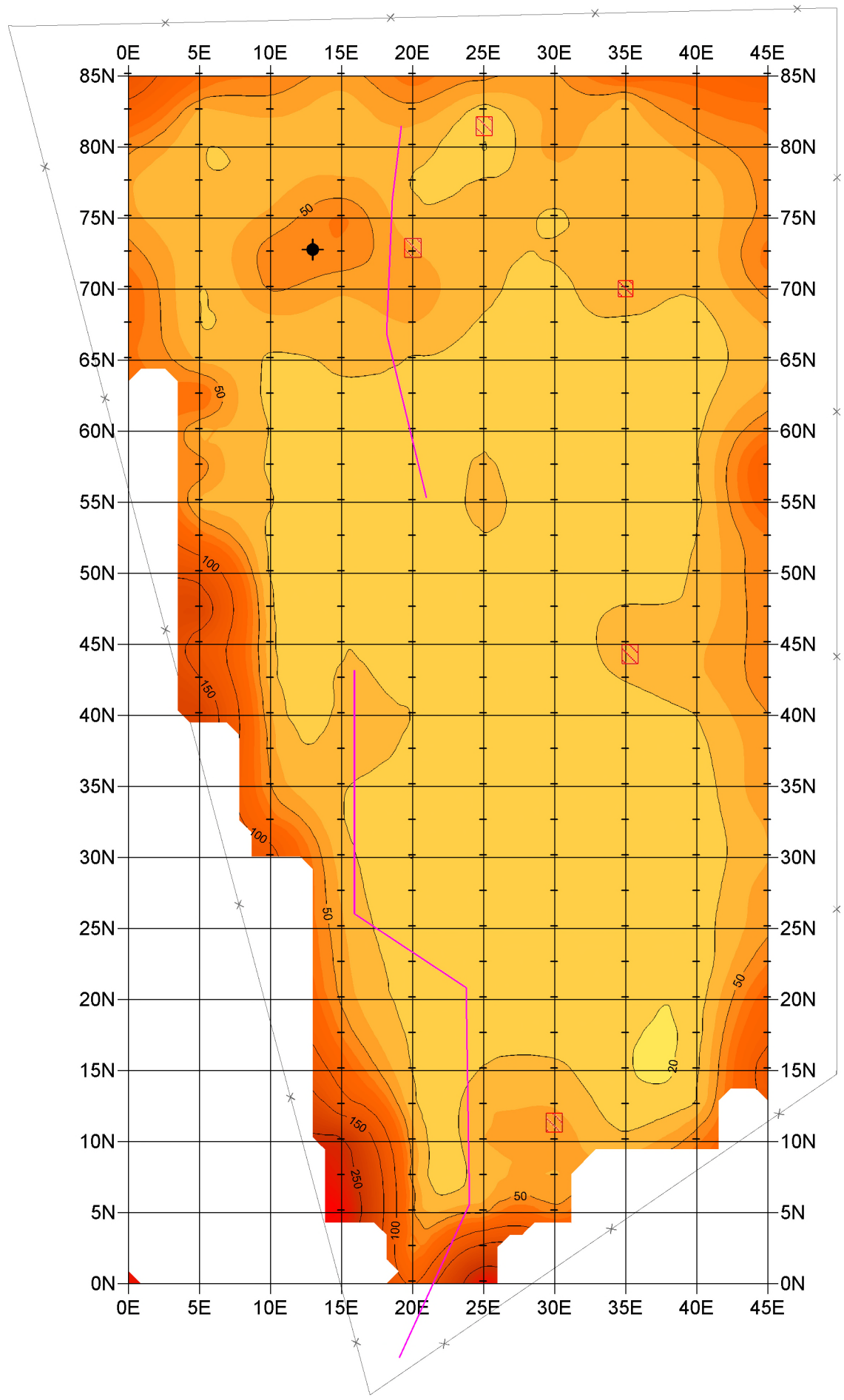
PREPARED FOR: AECOM
Los Angeles, California

PROJECT NO. 1806131C

SCALE: 1 inch = 10 feet

FIGURE BY: C. Carter

DATE: 06/28/18



EM-61 Differential Response (mV)

360
340
320
300
280
260
240
220
200
180
160
140
120
100
80
60
40
20
0

LEGEND

+ EM-61 Survey Station

Magnetic Peak- Expected location of oil well

Buried Metal

Unknown Line

Fence

0 5 10
(feet)

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www.spectrum-geophysics.com

Contour Map of EM-61 Differential Data

FIGURE 3

PROJECT
Vacant Lot
128 Hurricane Street
Marina Del Rey, California

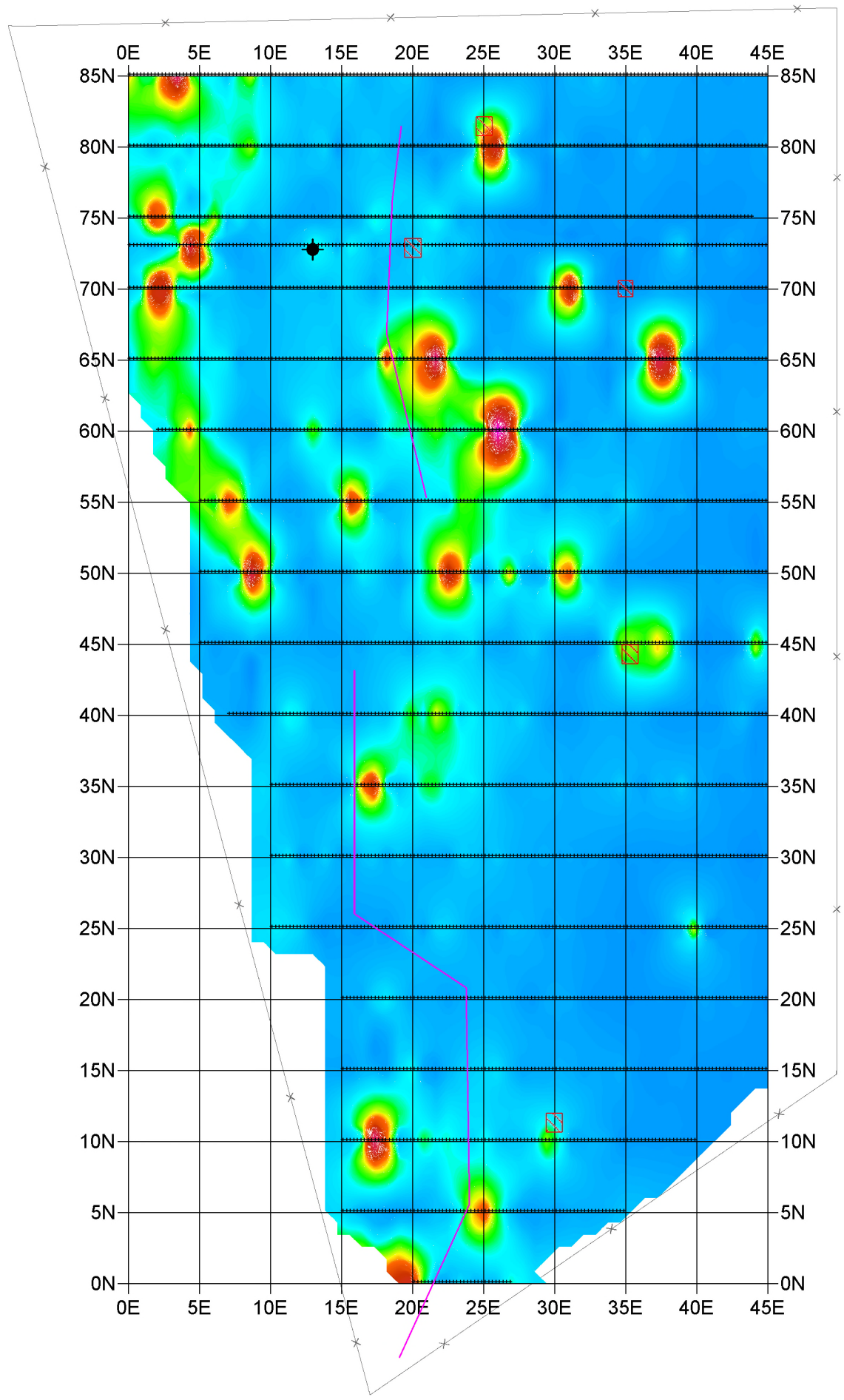
PREPARED FOR
AECOM
Los Angeles, California

PROJECT NO. 1806131C

SCALE 1 inch = 10 feet

FIGURE BY C. Carter

DATE 06/28/18



LEGEND

- GPR Survey Line
- Magnetic Peak- Expected location of oil well
- Buried Metal
- Unknown Line
- Fence

0 5 10
(feet)

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Contour Map of GPR Signal Intensity (12-25ns)

FIGURE 4

PROJECT: Vacant Lot, 128 Hurricane Street, Marina Del Rey, California

PREPARED FOR: AECOM, Los Angeles, California

PROJECT NO. 1806131C

SCALE: 1 inch = 10 feet

FIGURE BY: C. Carter

DATE: 06/28/18

Appendix B – Soil Borings Permits

ENVIRONMENTAL HEALTH

Drinking Water Program

5050 Commerce Drive, Baldwin Park, CA 91706
Telephone: (626) 430-5420 • Facsimile: (626) 813-3013 • Email: waterquality@ph.lacounty.gov
http://publichealth.lacounty.gov/eh/ep/dw/dw_main.htm

SR0120040
128 Hurricane Street, Marina Del Rey, CA 90292
Work Plan Approval

TO BE COMPLETED BY APPLICANT:

WORK SITE ADDRESS	CITY	ZIP	EMAIL ADDRESS FOR WELL PERMIT APPROVAL
128 Hurricane Street	Marina Del Rey	90292	carole.ostensen@aecom.com

NOTICE:

- WORK PLAN APPROVALS ARE VALID FOR 180 DAYS. 30 DAY EXTENSIONS OF WORK PLAN APPROVALS ARE CONSIDERED ON AN INDIVIDUAL (CASE-BY-CASE) BASIS AND MAY BE SUBJECT TO ADDITIONAL PLAN REVIEW FEES (HOURLY RATE AS APPLICABLE).
- WORK PLAN MODIFICATIONS MAY BE REQUIRED IF WELL AND GEOLOGIC CONDITIONS ENCOUNTERED AT THE SITE INSPECTION ARE FOUND TO DIFFER FROM THE SCOPE OF WORK PRESENTED TO THE DEPARTMENT OF PUBLIC HEALTH—DRINKING WATER PROGRAM.
- WORK PLAN APPROVALS ARE LIMITED TO COMPLIANCE WITH THE CALIFORNIA WELL STANDARDS AND THE LOS ANGELES COUNTY CODE AND DOES NOT GRANT ANY RIGHTS TO CONSTRUCT, RENOVATE, OR DECOMMISSION ANY WELL. THE APPLICANT IS RESPONSIBLE FOR SECURING ALL OTHER NECESSARY PERMITS SUCH AS WATER RIGHTS, PROPERTY RIGHTS, COASTAL COMMISSION APPROVALS, USE COVENANTS, ENCROACHMENT PERMISSIONS, UTILITY LINE SETBACKS, CITY/COUNTY PUBLIC WORKS RIGHTS OF WAY, ETC.
- ALL FIELD WORK MUST BE CONDUCTED UNDER THE DIRECT SUPERVISION OF A PROFESSIONAL GEOLOGIST LICENSED IN THE STATE OF CALIFORNIA.
- THIS PERMIT IS NOT COMPLETE UNTIL ALL OF THE FOLLOWING REQUIREMENTS ARE SIGNED BY THE DEPUTY HEALTH OFFICER. WORK SHALL NOT BE INITIATED WITHOUT A WORK PLAN APPROVAL STAMPED BY THE DEPARTMENT OF PUBLIC HEALTH—DRINKING WATER PROGRAM.
- ***ONCE APPROVED NOTIFY INSPECTOR AT ytaye@ph.lacounty.gov PREFERABLY 3 BUSINESS DAYS BEFORE WORK IS SCHEDULED TO BEGIN.***

TO BE COMPLETED BY DEPARTMENT OF PUBLIC HEALTH—DRINKING WATER PROGRAM:

X WORK PLAN APPROVED (6 soil borings) **DATE: September 26, 2017**

ADDITIONAL APPROVAL CONDITIONS:

- Provide the start of project date and time via my email listed above.
- Ensure to backfill using a tremie pipe or equivalent, proceeding upward from the bottom of the boring.
- Exploration holes must comply with all applicable requirements published in the California Well Standards (Bulletins 74-81 and 74-90).

REHS NO: 7115

Yonas Taye, REHS

□ ANNULAR SEAL FINAL INSPECTION REQUIRED

DATE ACCEPTED:	REHS signature

□ WELL COMPLETION LOG REQUIRED

DATE ACCEPTED:	REHS signature

□ WATER QUALITY—BACTERIOLOGICAL STANDARDS REQUIRED

DATE ACCEPTED:	REHS signature

□ WATER QUALITY—CHEMICAL STANDARDS REQUIRED

DATE ACCEPTED:	REHS signature

□ WATER SUPPLY YIELD REQUIRED

DATE ACCEPTED:	REHS signature

□ OTHER REQUIREMENT

DATE ACCEPTED:	REHS signature

ENVIRONMENTAL HEALTH

Drinking Water Program

5050 Commerce Drive, Baldwin Park, CA 91706
Telephone: (626) 430-5420 • Facsimile: (626) 813-3013 • Email: waterquality@ph.lacounty.gov
http://publichealth.lacounty.gov/eh/ep/dw/dw_main.htm

SR0149848
128 Hurricane Street, Marina Del Rey, CA 90292
Work Plan Approval

TO BE COMPLETED BY APPLICANT:

WORK SITE ADDRESS	CITY	ZIP	EMAIL ADDRESS FOR WELL PERMIT APPROVAL
128 Hurricane Street	Marina Del Rey	90292	Kaleena.Johnson@aecom.com

NOTICE:

- WORK PLAN APPROVALS ARE VALID FOR 180 DAYS. 30 DAY EXTENSIONS OF WORK PLAN APPROVALS ARE CONSIDERED ON AN INDIVIDUAL (CASE-BY-CASE) BASIS AND MAY BE SUBJECT TO ADDITIONAL PLAN REVIEW FEES (HOURLY RATE AS APPLICABLE).
- WORK PLAN MODIFICATIONS MAY BE REQUIRED IF WELL AND GEOLOGIC CONDITIONS ENCOUNTERED AT THE SITE INSPECTION ARE FOUND TO DIFFER FROM THE SCOPE OF WORK PRESENTED TO THE DEPARTMENT OF PUBLIC HEALTH—DRINKING WATER PROGRAM.
- WORK PLAN APPROVALS ARE LIMITED TO COMPLIANCE WITH THE CALIFORNIA WELL STANDARDS AND THE LOS ANGELES COUNTY CODE AND DOES NOT GRANT ANY RIGHTS TO CONSTRUCT, RENOVATE, OR DECOMMISSION ANY WELL. THE APPLICANT IS RESPONSIBLE FOR SECURING ALL OTHER NECESSARY PERMITS SUCH AS WATER RIGHTS, PROPERTY RIGHTS, COASTAL COMMISSION APPROVALS, USE COVENANTS, ENCROACHMENT PERMISSIONS, UTILITY LINE SETBACKS, CITY/COUNTY PUBLIC WORKS RIGHTS OF WAY, ETC.
- ALL FIELD WORK MUST BE CONDUCTED UNDER THE DIRECT SUPERVISION OF A PROFESSIONAL GEOLOGIST LICENSED IN THE STATE OF CALIFORNIA.
- THIS PERMIT IS NOT COMPLETE UNTIL ALL OF THE FOLLOWING REQUIREMENTS ARE SIGNED BY THE DEPUTY HEALTH OFFICER. WORK SHALL NOT BE INITIATED WITHOUT A WORK PLAN APPROVAL STAMPED BY THE DEPARTMENT OF PUBLIC HEALTH—DRINKING WATER PROGRAM.
- ***ONCE APPROVED NOTIFY INSPECTOR AT ytaye@ph.lacounty.gov PREFERABLY 3 BUSINESS DAYS BEFORE WORK IS SCHEDULED TO BEGIN.***

TO BE COMPLETED BY DEPARTMENT OF PUBLIC HEALTH—DRINKING WATER PROGRAM:

X WORK PLAN APPROVED (18 soil borings) **DATE: June 27, 2018**

ADDITIONAL APPROVAL CONDITIONS:

- Provide the start of project date and time via my email listed above.
- Ensure to backfill using a tremie pipe or equivalent, proceeding upward from the bottom of the boring.
- Exploration holes must comply with all applicable requirements published in the California Well Standards (Bulletins 74-81 and 74-90).

REHS NO: 7115

Yonas Taye, REHS

□ ANNULAR SEAL FINAL INSPECTION REQUIRED		□ WELL COMPLETION LOG REQUIRED	
DATE ACCEPTED:	REHS signature	DATE ACCEPTED:	REHS signature
□ WATER QUALITY—BACTERIOLOGICAL STANDARDS REQUIRED		□ WATER QUALITY—CHEMICAL STANDARDS REQUIRED	
DATE ACCEPTED:	REHS signature	DATE ACCEPTED:	REHS signature
□ WATER SUPPLY YIELD REQUIRED		□ OTHER REQUIREMENT	
DATE ACCEPTED:	REHS signature	DATE ACCEPTED:	REHS signature

Appendix C – Soil Boring Logs

Project: City of Los Angeles Sanitation
Project Location: 128 Hurricane Street
Project Number: 60553849

Log of SB-1

Sheet 1 of 1

Date(s) Drilled	6/20/18	Logged By	A. Vigna	Checked By	
Drilling Method	Hand Auger	Drilling Contractor	ABC	Total Depth of Borehole	4.5 feet bgs
Drill Rig Type	NA	Drill Bit Size/Type	3" Hand Auger Bucket	Surface Elevation (ft-msl)	7.20
Groundwater Level (feet bgs)	Not Encountered	Sampling Method(s)	Hand Auger Bucket	Top of PVC Elevation	NA
Diameter of Hole (inches)	3	Diameter of Well (inches)	1/4	Type of Well Casing	1/4 inch Teflon tubing	Screen Perforation	6" SS probe
Type of Sand Pack	No. 3 SAND	Type/Thickness of Seal(s)	Hydrated No. 8 bentonite (0 to 2.5 ft bgs), dry No. 8 bentonite (2.5 to 3 ft bgs).		
Comments	Refusal at 4.5 feet bgs.				

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	Blows/6"	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log	PID Headspace (ppm)	PID Background (ppm)	Sample Time	REMARKS
	0										
			SB-1-0.5	NA		Brown (10YR 5/3), silty fine SAND (SM), moist; rootlets; concrete debris.		2.7	0.1	1415	
			SB-1-1			Becomes dark brown (10YR 5/3).		1.4	0.1	1430	
-5	2		SB-1-2.5			Becomes silty SAND with Gravel (SM).		2.0	0.1	1445	
	4					Brown (10YR 5/3), sandy GRAVEL, moist; concrete debris.					
	6					Refusal at 4.5 feet bgs (three step outs attempted). Groundwater not encountered.					
0	8										
	10										
-5	12										
	14										
	16										
-10	18										
	20										
-15	22										

Project: City of Los Angeles Sanitation
Project Location: 128 Hurricane Street
Project Number: 60553849

Log of SB-2

Sheet 1 of 1

Date(s) Drilled	6/20/18	Logged By	A. Vigna	Checked By	
Drilling Method	Hand Auger	Drilling Contractor	ABC	Total Depth of Borehole	2.5 feet bgs
Drill Rig Type	NA	Drill Bit Size/Type	3" Hand Auger Bucket	Surface Elevation (ft-msl)	7.20
Groundwater Level (feet bgs)	Not Encountered	Sampling Method(s)	Hand Auger Bucket	Top of PVC Elevation	NA
Diameter of Hole (inches)	3	Diameter of Well (inches) NA	Type of Well Casing NA	Screen Perforation	NA
Type of Sand Pack	NA	Type/Thickness of Seal(s)	NA		
Comments	Refusal at 2.5 feet bgs.				

Elevation, feet	Depth, feet	SAMPLES Type	Number	Blows/6 in.	Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	PID Headspace (ppm)	PID Background (ppm)	Sample Time	REMARKS
	0										
			SB-2-0.5	NA	6/6		Brown (10YR 5/3), silty fine SAND (SM), moist; rootlets; concrete debris.	1.2	0.1	1455	
			SB-2-1		6/6			0.6	0.1	1500	
			SB-2-1DUP		6/6					1500	
-5	2										
	4						Refusal at 2.5 feet bgs. Three step out borings attempted. Backfilled with hydrated bentonite.				
	6										
0	8										
	10										
-5	12										
	14										
	16										
-10	18										
	20										
-15	22										

Project: City of Los Angeles Sanitation
Project Location: 128 Hurricane Street
Project Number: 60553849

Log of SB-3

Sheet 1 of 1

Date(s) Drilled	6/20/18	Logged By	A. Vigna	Checked By	
Drilling Method	Hand Auger	Drilling Contractor	ABC	Total Depth of Borehole	6.0 feet bgs
Drill Rig Type	NA	Drill Bit Size/Type	3" Hand Auger Bucket	Surface Elevation (ft-msl)	7.20
Groundwater Level (feet bgs)	4.5	Sampling Method(s)	Hand Auger Bucket	Top of PVC Elevation	NA
Diameter of Hole (inches)	3	Diameter of Well (inches)	1/4	Type of Well Casing	1/4 inch Teflon tubing	Screen Perforation	6" SS probe
Type of Sand Pack	No. 3 SAND	Type/Thickness of Seal(s)	Hydrated No. 8 bentonite (0 to 2.5 & 4 to 6 ft bgs), dry No. 8 bentonite (2.5 to 3 ft bgs).		
Comments	Refusal at 6 feet bgs.				

Elevation, feet	Depth, feet	SAMPLES Type	SAMPLES Number	Blows/6"	Graphic Log	MATERIAL DESCRIPTION	Well Completion Log	PID Headspace (ppm)	PID Background (ppm)	Sample Time	REMARKS
	0										
			SB-3-0.5	NA		Brown (10YR 5/3), silty SAND (SM), moist; rootlets and gravel present.		0.2	0.0	1330	
			SB-3-1			Becomes dark brown (10YR 3/3).		1.1	0.0	1340	
-5	2		SB-3-2.5			Becomes silty SAND with gravel (SM).		1.7	0.1	1350	
	4		SB-3-5			Very dark gray (10YR 3/1), SAND with silt (SP-SM), moist. ▼		2.3	0.0	1400	
			SB-5-5DUP								
	6					Becomes wet. ▽					
-0						Refusal at 6 feet bgs. Groundwater encountered at 6 feet, then rose to 4.5 feet bgs.					
	8										
	10										
-5	12										
	14										
	16										
-10	18										
	20										
-15	22										

Project: City of Los Angeles Sanitation
Project Location: 128 Hurricane Street
Project Number: 60553849

Log of SB-4

Sheet 1 of 1

Date(s) Drilled	6/20/18	Logged By	A. Vigna	Checked By	
Drilling Method	Hand Auger and HSA	Drilling Contractor	ABC	Total Depth of Borehole	20.0 feet bgs
Drill Rig Type	CME 75	Drill Bit Size/Type	3" Hand Auger Bucket and 8" Hollow Stem bit	Surface Elevation (ft-msl)	7.20
Groundwater Level (feet bgs)	5.5	Sampling Method(s)	Hand Auger Bucket and Split Spoon	Top of PVC Elevation	NA
Diameter of Hole (inches)	8	Diameter of Well (inches) NA	Type of Well Casing NA	Screen Perforation	NA
Type of Sand Pack	NA	Type/Thickness of Seal(s)	NA		
Comments	Hand augered 0 to 5 feet bgs. Total depth at 20 feet bgs. Temporary well set 5 feet into groundwater for grab groundwater sample collection.				

Elevation, feet	Depth, feet	SAMPLES Type	Number	Blows/6 in.	Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	PID Headspace (ppm)	PID Background (ppm)	Sample Time	REMARKS
	0						Light brown (10YR 6/3), sandy SILT (ML), moist; rootlets; concrete debris.	-	-	0900	
			SB-4-0.5	NA	6/6						
			SB-4-1	NA	6/6		Light brown (10YR 6/3), fine SAND with silt (SP-SM), moist.	1.8	0.0	0905	
-5	2		SB-4-2.5	NA	6/6			3.1	0.0	0912	
	4		SB-4-3.5	NA	6/6		Grayish brown (10YR 5/2), sandy CLAY (CL), moist; odor and staining.	7.5	0.0	0918	
			SB-4-5	NA	6/6		Very dark gray (10YR 3/1), SAND with silt (SP-SM), wet; odor.	4.2	0.1	0930	
0	6										
	8						Very dark gray (10YR 3/1), fine SAND (SP), wet; odor.				
	10		SB-4-10	6 9 10	12/18			3.1	0.1	1002	
-5	12										
	14										
	16		SB-4-15	-	12/18			3.4	0.0	1020	
-10							Very dark gray (10YR 3/1), SILT with sand (ML), wet; odor.				
	18										
	20						Total depth at 20 feet bgs. Groundwater encountered at 5 feet bgs; static at 5.5 feet bgs. Backfilled with 95% cement/5% bentonite grout.				
-15	22										

Project: City of Los Angeles Sanitation
Project Location: 128 Hurricane Street
Project Number: 60553849

Log of SB-5

Sheet 1 of 1

Date(s) Drilled	6/20/18	Logged By	A. Vigna	Checked By	
Drilling Method	Hand Auger	Drilling Contractor	ABC	Total Depth of Borehole	5.0 feet bgs
Drill Rig Type	NA	Drill Bit Size/Type	3" Hand Auger Bucket	Surface Elevation (ft-msl)	7.20
Groundwater Level (feet bgs)	5	Sampling Method(s)	Hand Auger Bucket	Top of PVC Elevation	NA
Diameter of Hole (inches)	3	Diameter of Well (inches) NA	Type of Well Casing NA	Screen Perforation	NA
Type of Sand Pack	NA	Type/Thickness of Seal(s)	NA		
Comments					

Elevation, feet	Depth, feet	SAMPLES Type	Number	Blows/6 in.	Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	PID Headspace (ppm)	PID Background (ppm)	Sample Time	REMARKS
	0										
			SB-5-0.5	NA	6/6		Brown (10YR 5/3), silty SAND (SM), moist; rootlets; concrete debris.	0.8	0.1	1140	
			SB-5-1	NA	6/6			0.1	0.0	1150	
-5	2		SB-5-2.5	NA	6/6		Becomes light yellowish brown (10YR 6/4) to dark brown (10YR 3/3).	1.0	0.0	1225	Wood debris present. Step out 5 feet northeast.
	4		SB-5-5	NA	6/6		Very dark gray (10YR 3/1), sand CLAY (CL), wet.	1.4	0.0	1225	
	6						Refusal at 5 feet bgs due to heaving sands. Groundwater encountered at 5 feet bgs. Backfill with hydrated bentonite.				
-0	8										
	10										
-5	12										
	14										
	16										
-10	18										
	20										
-15	22										

Project: City of Los Angeles Sanitation
Project Location: 128 Hurricane Street
Project Number: 60553849

Log of SB-6

Sheet 1 of 1

Date(s) Drilled	6/20/18	Logged By	A. Vigna	Checked By	
Drilling Method	Hand Auger	Drilling Contractor	ABC	Total Depth of Borehole	5.0 feet bgs
Drill Rig Type	NA	Drill Bit Size/Type	3" Hand Auger Bucket	Surface Elevation (ft-msl)	7.20
Groundwater Level (feet bgs)	5	Sampling Method(s)	Hand Auger Bucket	Top of PVC Elevation	NA
Diameter of Hole (inches)	3	Diameter of Well (inches) NA	Type of Well Casing NA	Screen Perforation	NA
Type of Sand Pack	NA	Type/Thickness of Seal(s)	NA		
Comments					

Elevation, feet	Depth, feet	SAMPLES Type	Number	Blows/6 in.	Inches Recovered	Graphic Log	MATERIAL DESCRIPTION	PID Headspace (ppm)	PID Background (ppm)	Sample Time	REMARKS
	0										
			SB-6-0.5	NA	6/6		Light brown (10YR 6/3), sandy SILT (ML), moist; rootlets.	1.2	0.1	1100	
			SB-6-1	NA	6/6		Light brown (10YR 6/3), fine to medium SAND with silt, moist.	1.2	0.1	1105	
-5	2						Dark brown (10YR 3/3), silty SAND, moist.				
			SB-6-2.5	NA	6/6			3.4	0.0	1120	
	4						Becomes wet.				
			SB-6-5	NA	6/6		Very dark gray (10YR 3/1), fat CLAY (CH), wet.	0.6	0.1	1130	
	6						Refusal at 5 feet bgs due to heaving sands. Groundwater encountered at 4 feet bgs. Backfill with hydrated bentonite.				
-0	8										
	10										
-5	12										
	14										
	16										
-10	18										
	20										
-15	22										

Appendix D – Waste Manifest Documentation

Manifest

SOIL SAFE OF CA – TPST
Non-Hazardous Soils

↓ Manifest # ↓

Date of Shipment:	Responsible for Payment:	Transport Truck #:	Facility #:	Approval Number:	Load #
7 /			A07	49072	

Generator and/or Consultant

Generator's Name and Billing Address: CITY OF LOS ANGELES, BUREAU OF ENGINEERING, WASTEWATER CONVEYANCE ENGINEERING DIVISION 1149 S. BROADWAY, SUITE 600 LOS ANGELES, CA 90015	Generator's Phone #: 213-847-0323 Person to Contact: FAX#:	 Customer Account Number
Consultant's Name and Billing Address:	Consultant's Phone #: Person to Contact: FAX#:	 Customer Account Number
Generation Site (Transport from): *(name & address)* LOT AT 128 HURRICANE STREET 128 HURRICANE STREET MARINA DEL REY, CA 90292	Site Phone #: Person to Contact: FAX#:	
Designated Facility (Transport to): *(name & address)* SOIL SAFE 12328 HIBISCUS AVENUE ADELANTO, CA 92301	Facility Phone #: (800) 862-8001 Person to Contact: JOE PROVANSAL FAX#: (760) 246-8004	
Transporter Name and Mailing Address: BELSHIRE 25971 TOWNE CENTRE DRIVE FOOTHILL RANCH, CA 92610 BESI: 296040	Transporter's Phone #: 949-460-5200 Person to Contact: LARRY MOOTHART FAX#: 949-460-5210	CAR000183913 450647 Customer Account Number

Description of Soil	Moisture Content	Contaminated by:	Approx. Qty:	Description of Delivery	Gross Weight	Tare Weight	Net Weight
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐	002 DM	Soil			
Sand ☐ Organic ☐ Clay ☐ Other ☐	0 - 10% ☐ 10 - 20% ☐ 20% - over ☐	Gas ☐ Diesel ☐ Other ☐					

List any exception to items listed above: Scale Ticket #

Generator's and/or consultant's certification: I/We certify that the soil referenced herein is taken entirely from those soils descried in the Soil Data Sheet completed and certified by me/us for the Generation Site shown above and nothing has been added or done to such soil that would alter it in any way.

Print or Type Name: Generator ☐ Consultant ☐	Signature and date:	Month	Day	Year
Larry Moothart of BESI on behalf of generator		7	13	18

Transporter

Transporter's certification: I/We acknowledge receipt of the soil referenced above and certify that such soil is being delivered in exactly the same condition as when received. I/We further certify that the soil is being directly transported from the Generation Site to the Designated Facility without off-loading, adding to, subtracting from or in any way delaying delivery to such site.

Print or Type Name:	Signature and date:	Month	Day	Year
Frank Torres	Frank Torres	7	13	18

Recycling Facility

Discrepancies:

Recycling Facility certifies the receipt of the soil covered by this manifest except as noted above:

Print or Type Name:	Signature and date:
J. PROVANSAL	

Please print or type.

GENERATOR/CONSULTANTS COPY

NO. 742718

NON-HAZARDOUS WASTE DATA FORM

BESI # 296040

GENERATOR

Generator's Name and Mailing Address

CITY OF LOS ANGELES, BUREAU OF ENGINEERING,
WASTEWATER CONVEYANCE ENGINEERING DIVISION
1149 S. BROADWAY, SUITE 600
LOS ANGELES, CA 90015

Generator's Site Address (if different than mailing address)

LOT AT 128 HURRICANE STREET
128 HURRICANE STREET
MARINA DEL REY, CA 90292

Generator's Phone: 213-847-0323

Container type removed from site:

☒ Drums ☐ Vacuum Truck ☐ Roll-off Truck ☐ Dump Truck

☐ Other _____

Quantity 001

Container type transported to receiving facility:

☐ Drums ☒ Vacuum Truck ☐ Roll-off Truck ☐ Dump Truck

☐ Other _____

Quantity 001 Volume 020 gal

WASTE DESCRIPTION NON-HAZARDOUS WATER

GENERATING PROCESS DECON WATER

COMPONENTS OF WASTE	PPM	%
1. WATER		99-100%
2. TPH		<1%

COMPONENTS OF WASTE	PPM	%
3.		
4.		

Waste Profile _____ PROPERTIES: pH 7-10 ☐ SOLID ☒ LIQUID ☐ SLUDGE ☐ SLURRY ☐ OTHER _____

HANDLING INSTRUCTIONS: WEAR ALL APPROPRIATE PERSONAL PROTECTIVE CLOTHING.

Generator Printed/Typed Name: Larry Moothart of BESI on behalf of generator | Signature | Month 7 | Day 13 | Year 18

The Generator certifies that the waste as described is 100% non-hazardous

TRANSPORTER

Transporter 1 Company Name: BELSHIRE | Phone#: 949-460-5200

Transporter 1 Printed/Typed Name: Frank Torres | Signature | Month 7 | Day 13 | Year 18

Transporter Acknowledgment of Receipt of Materials

Transporter 2 Company Name: NIETO & SONS TRUCKING, INC. | Phone#: 714-990-6855

Transporter 2 Printed/Typed Name | Signature | Month | Day | Year

Transporter Acknowledgment of Receipt of Materials

RECEIVING FACILITY

Designated Facility Name and Site Address

DEMENNO KERDOON
2000 N. ALAMEDA ST.
COMPTON, CA 90222

Phone#: 310-537-7100

Printed/Typed Name | Signature | Month | Day | Year

Designated Facility Owner or Operator: Certification of receipt of materials covered by this data form.

Appendix E – Soil and Groundwater Analytical Laboratory Reports and Chains of Custody

AMERICAN ANALYTICS

9765 Eton Avenue
Chatsworth
California 91311
Tel: (818) 998-5547
Fax: (818) 998-7258

June 29, 2018

Kaleena Johnson

AECOM (LA)

300 S. Grand Ave., Suite 800

Los Angeles, CA 90017

Re : 128 Hurricane - Soil & GW

A94898 / 8F20019

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received on 06/20/18 18:22 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Program Manual, applicable standard operating procedures, and other related documentation. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report or require additional information please call me at American Analytics.

Sincerely,



Viorel Vasile

Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
8081A OCPs					
SB-4-0.5	8F20019-01	Soil	2	06/20/18 09:00	06/20/18 18:22
SB-6-0.5	8F20019-08	Soil	2	06/20/18 11:00	06/20/18 18:22
SB-3-0.5	8F20019-16	Soil	2	06/20/18 13:30	06/20/18 18:22
SB-1-0.5	8F20019-20	Soil	2	06/20/18 14:15	06/20/18 18:22
8082 PCBs					
SB-6-0.5	8F20019-08	Soil	2	06/20/18 11:00	06/20/18 18:22
SB-1-0.5	8F20019-20	Soil	2	06/20/18 14:15	06/20/18 18:22
8151A Herbicides					
SB-6-0.5	8F20019-08	Soil	2	06/20/18 11:00	06/20/18 18:22
SB-1-0.5	8F20019-20	Soil	2	06/20/18 14:15	06/20/18 18:22
8260B/5035 +OXYGENATES					
SB-4-1	8F20019-02	Soil	2	06/20/18 09:05	06/20/18 18:22
SB-4-3.5	8F20019-04	Soil	2	06/20/18 09:18	06/20/18 18:22
SB-4-5	8F20019-05	Soil	2	06/20/18 09:30	06/20/18 18:22
SB-4-10	8F20019-06	Soil	2	06/20/18 10:02	06/20/18 18:22
SB-4-15	8F20019-07	Soil	2	06/20/18 10:20	06/20/18 18:22
SB-6-1	8F20019-09	Soil	2	06/20/18 11:05	06/20/18 18:22

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
SB-6-5	8F20019-11	Soil	2	06/20/18 11:30	06/20/18 18:22
SB-5-1	8F20019-13	Soil	2	06/20/18 11:50	06/20/18 18:22
SB-5-5	8F20019-15	Soil	2	06/20/18 12:25	06/20/18 18:22
SB-3-1	8F20019-17	Soil	2	06/20/18 13:40	06/20/18 18:22
SB-3-5	8F20019-19	Soil	2	06/20/18 14:00	06/20/18 18:22
SB-1-1	8F20019-21	Soil	2	06/20/18 14:30	06/20/18 18:22
SB-2-1	8F20019-24	Soil	2	06/20/18 15:00	06/20/18 18:22
SB-2-1 DUP	8F20019-27	Soil	2	06/20/18 15:00	06/20/18 18:22
SB-3-5 DUP	8F20019-28	Soil	2	06/20/18 14:00	06/20/18 18:22
8260B+OXYGENATES					
TB-062018	8F20019-25	Water	2	06/20/18 08:00	06/20/18 18:22
SB-4	8F20019-26	Water	2	06/20/18 15:20	06/20/18 18:22
8270C					
SB-4-3.5	8F20019-04	Soil	2	06/20/18 09:18	06/20/18 18:22
SB-4-5	8F20019-05	Soil	2	06/20/18 09:30	06/20/18 18:22
CAM Metals Less Hg 6000/7000					
SB-4-0.5	8F20019-01	Soil	2	06/20/18 09:00	06/20/18 18:22
SB-4-3.5	8F20019-04	Soil	2	06/20/18 09:18	06/20/18 18:22
SB-4-5	8F20019-05	Soil	2	06/20/18 09:30	06/20/18 18:22

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
SB-4-10	8F20019-06	Soil	2	06/20/18 10:02	06/20/18 18:22
SB-6-0.5	8F20019-08	Soil	2	06/20/18 11:00	06/20/18 18:22
SB-6-2.5	8F20019-10	Soil	2	06/20/18 11:20	06/20/18 18:22
SB-5-0.5	8F20019-12	Soil	2	06/20/18 11:40	06/20/18 18:22
SB-5-1	8F20019-13	Soil	2	06/20/18 11:50	06/20/18 18:22
SB-5-2.5	8F20019-14	Soil	2	06/20/18 12:00	06/20/18 18:22
SB-3-0.5	8F20019-16	Soil	2	06/20/18 13:30	06/20/18 18:22
SB-3-2.5	8F20019-18	Soil	2	06/20/18 13:50	06/20/18 18:22
SB-1-0.5	8F20019-20	Soil	2	06/20/18 14:15	06/20/18 18:22
SB-1-2.5	8F20019-22	Soil	2	06/20/18 14:45	06/20/18 18:22
SB-2-0.5	8F20019-23	Soil	2	06/20/18 14:55	06/20/18 18:22

Carbon Chain Characterization 8015M

SB-4-0.5	8F20019-01	Soil	2	06/20/18 09:00	06/20/18 18:22
SB-4-1	8F20019-02	Soil	2	06/20/18 09:05	06/20/18 18:22
SB-4-2.5	8F20019-03	Soil	2	06/20/18 09:12	06/20/18 18:22
SB-4-3.5	8F20019-04	Soil	2	06/20/18 09:18	06/20/18 18:22
SB-4-5	8F20019-05	Soil	2	06/20/18 09:30	06/20/18 18:22
SB-4-10	8F20019-06	Soil	2	06/20/18 10:02	06/20/18 18:22
SB-4-15	8F20019-07	Soil	2	06/20/18 10:20	06/20/18 18:22
SB-6-0.5	8F20019-08	Soil	2	06/20/18 11:00	06/20/18 18:22

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
SB-6-1	8F20019-09	Soil	2	06/20/18 11:05	06/20/18 18:22
SB-6-2.5	8F20019-10	Soil	2	06/20/18 11:20	06/20/18 18:22
SB-6-5	8F20019-11	Soil	2	06/20/18 11:30	06/20/18 18:22
SB-5-1	8F20019-13	Soil	2	06/20/18 11:50	06/20/18 18:22
SB-5-2.5	8F20019-14	Soil	2	06/20/18 12:00	06/20/18 18:22
SB-5-5	8F20019-15	Soil	2	06/20/18 12:25	06/20/18 18:22
SB-3-1	8F20019-17	Soil	2	06/20/18 13:40	06/20/18 18:22
SB-3-2.5	8F20019-18	Soil	2	06/20/18 13:50	06/20/18 18:22
SB-3-5	8F20019-19	Soil	2	06/20/18 14:00	06/20/18 18:22
SB-1-0.5	8F20019-20	Soil	2	06/20/18 14:15	06/20/18 18:22
SB-1-1	8F20019-21	Soil	2	06/20/18 14:30	06/20/18 18:22
SB-1-2.5	8F20019-22	Soil	2	06/20/18 14:45	06/20/18 18:22
SB-2-0.5	8F20019-23	Soil	2	06/20/18 14:55	06/20/18 18:22
SB-2-1	8F20019-24	Soil	2	06/20/18 15:00	06/20/18 18:22
SB-4	8F20019-26	Water	2	06/20/18 15:20	06/20/18 18:22
SB-2-1 DUP	8F20019-27	Soil	2	06/20/18 15:00	06/20/18 18:22
SB-3-5 DUP	8F20019-28	Soil	2	06/20/18 14:00	06/20/18 18:22
Lead Total EPA 6010B					
SB-4-1	8F20019-02	Soil	2	06/20/18 09:05	06/20/18 18:22
SB-4-2.5	8F20019-03	Soil	2	06/20/18 09:12	06/20/18 18:22



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
SB-6-5	8F20019-11	Soil	2	06/20/18 11:30	06/20/18 18:22
SB-3-5	8F20019-19	Soil	2	06/20/18 14:00	06/20/18 18:22
Mercury Total EPA 7470A/7471A					
SB-4-0.5	8F20019-01	Soil	2	06/20/18 09:00	06/20/18 18:22
SB-4-3.5	8F20019-04	Soil	2	06/20/18 09:18	06/20/18 18:22
SB-4-5	8F20019-05	Soil	2	06/20/18 09:30	06/20/18 18:22
SB-4-10	8F20019-06	Soil	2	06/20/18 10:02	06/20/18 18:22
SB-6-0.5	8F20019-08	Soil	2	06/20/18 11:00	06/20/18 18:22
SB-6-2.5	8F20019-10	Soil	2	06/20/18 11:20	06/20/18 18:22
SB-5-0.5	8F20019-12	Soil	2	06/20/18 11:40	06/20/18 18:22
SB-5-1	8F20019-13	Soil	2	06/20/18 11:50	06/20/18 18:22
SB-5-2.5	8F20019-14	Soil	2	06/20/18 12:00	06/20/18 18:22
SB-3-0.5	8F20019-16	Soil	2	06/20/18 13:30	06/20/18 18:22
SB-3-2.5	8F20019-18	Soil	2	06/20/18 13:50	06/20/18 18:22
SB-1-0.5	8F20019-20	Soil	2	06/20/18 14:15	06/20/18 18:22
SB-1-2.5	8F20019-22	Soil	2	06/20/18 14:45	06/20/18 18:22
SB-2-0.5	8F20019-23	Soil	2	06/20/18 14:55	06/20/18 18:22
SB-4	8F20019-26	Water	2	06/20/18 15:20	06/20/18 18:22
Metals Total 6020B					

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
SB-4	8F20019-26	Water	2	06/20/18 15:20	06/20/18 18:22

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Carbon Chain by GC/FID

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: mg/kg

Date Sampled:	06/20/18	06/20/18	06/20/18	06/20/18	
Date Prepared:	06/22/18	06/22/18	06/28/18	06/22/18	
Date Analyzed:	06/23/18	06/23/18	06/29/18	06/26/18	
AA ID No:	8F20019-01	8F20019-02	8F20019-03	8F20019-04	
Client ID No:	SB-4-0.5	SB-4-1	SB-4-2.5	SB-4-3.5	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	5	MRL
Carbon Chain Characterization 8015M (EPA 8015M)					
C6-C8	<1.0	<1.0	<1.0	<5.0	1.0
C8-C10	<1.0	<1.0	<1.0	<5.0	1.0
C10-C12	<1.0	<1.0	<1.0	<5.0	1.0
C12-C14	<1.0	<1.0	<1.0	**13**	1.0
C14-C16	<1.0	<1.0	<1.0	**51**	1.0
C16-C18	<1.0	<1.0	<1.0	**120**	1.0
C18-C20	<1.0	<1.0	<1.0	**160**	1.0
C20-C22	**2.2**	<1.0	**1.7**	**190**	1.0
C22-C24	**5.0**	<1.0	**3.9**	**270**	1.0
C24-C26	**6.5**	**1.1**	**4.6**	**220**	1.0
C26-C28	**11**	**2.6**	**8.5**	**350**	1.0
C28-C32	**30**	**9.5**	**18**	**620**	1.0
C32-C34	**14**	**3.7**	**4.8**	**200**	1.0
C34-C36	**11**	**3.3**	**2.5**	**120**	1.0
C36-C40	**13**	**5.6**	**3.6**	**270**	1.0
C40-C44	**9.8**	**2.5**	**2.3**	**91**	1.0
TPH (C6-C44)	**100**	**28**	**50**	**2700**	10
Gasoline Range Organics (C6-C10)	<5.0	<5.0	<5.0	<25	5.0
Diesel Range Organics (C10-C23)	<5.0	<5.0	<5.0	**670**	5.0
Oil Range Organics (C23-C44)	**98**	**28**	**47**	**2000**	5.0
Surrogates					**%REC Limits**
o-Terphenyl	81%	79%	78%	76%	50-150

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Carbon Chain by GC/FID

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: mg/kg

Date Sampled:	06/20/18	06/20/18	06/20/18	06/20/18	
Date Prepared:	06/22/18	06/22/18	06/22/18	06/22/18	
Date Analyzed:	06/23/18	06/23/18	06/23/18	06/23/18	
AA ID No:	8F20019-05	8F20019-06	8F20019-07	8F20019-08	
Client ID No:	SB-4-5	SB-4-10	SB-4-15	SB-6-0.5	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL
Carbon Chain Characterization 8015M (EPA 8015M)					
C6-C8	<1.0	<1.0	<1.0	<1.0	1.0
C8-C10	<1.0	<1.0	<1.0	<1.0	1.0
C10-C12	<1.0	<1.0	<1.0	<1.0	1.0
C12-C14	<1.0	<1.0	<1.0	<1.0	1.0
C14-C16	<1.0	<1.0	<1.0	<1.0	1.0
C16-C18	<1.0	<1.0	<1.0	<1.0	1.0
C18-C20	<1.0	<1.0	<1.0	<1.0	1.0
C20-C22	<1.0	<1.0	<1.0	<1.0	1.0
C22-C24	<1.0	<1.0	<1.0	**9.3**	1.0
C24-C26	<1.0	<1.0	<1.0	**3.9**	1.0
C26-C28	<1.0	<1.0	<1.0	**5.1**	1.0
C28-C32	**2.0**	<1.0	<1.0	**14**	1.0
C32-C34	**2.2**	<1.0	<1.0	**6.2**	1.0
C34-C36	**4.0**	<1.0	<1.0	**5.7**	1.0
C36-C40	**13**	**3.2**	**3.3**	**8.2**	1.0
C40-C44	**19**	**8.0**	**8.0**	**13**	1.0
TPH (C6-C44)	**40**	**11**	**11**	**66**	10
Gasoline Range Organics (C6-C10)	<5.0	<5.0	<5.0	<5.0	5.0
Diesel Range Organics (C10-C23)	<5.0	<5.0	<5.0	<5.0	5.0
Oil Range Organics (C23-C44)	**40**	**11**	**11**	**61**	5.0
Surrogates					**%REC Limits**
o-Terphenyl	90%	90%	88%	86%	50-150

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Carbon Chain by GC/FID

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: mg/kg

Date Sampled:	06/20/18	06/20/18	06/20/18	06/20/18	
Date Prepared:	06/22/18	06/22/18	06/22/18	06/28/18	
Date Analyzed:	06/23/18	06/26/18	06/23/18	06/29/18	
AA ID No:	8F20019-09	8F20019-10	8F20019-11	8F20019-13	
Client ID No:	SB-6-1	SB-6-2.5	SB-6-5	SB-5-1	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	5	1	1	MRL
Carbon Chain Characterization 8015M (EPA 8015M)					
C6-C8	<1.0	<5.0	<1.0	<1.0	1.0
C8-C10	<1.0	<5.0	<1.0	<1.0	1.0
C10-C12	<1.0	<5.0	<1.0	<1.0	1.0
C12-C14	<1.0	**6.1**	<1.0	<1.0	1.0
C14-C16	<1.0	**30**	<1.0	<1.0	1.0
C16-C18	<1.0	**73**	<1.0	<1.0	1.0
C18-C20	<1.0	**120**	<1.0	<1.0	1.0
C20-C22	**1.3**	**170**	<1.0	**1.0**	1.0
C22-C24	**11**	**260**	<1.0	**2.4**	1.0
C24-C26	**6.4**	**250**	<1.0	**3.2**	1.0
C26-C28	**8.9**	**390**	<1.0	**8.6**	1.0
C28-C32	**24**	**880**	**4.5**	**25**	1.0
C32-C34	**8.2**	**240**	**4.1**	**8.2**	1.0
C34-C36	**7.2**	**190**	**6.3**	**8.3**	1.0
C36-C40	**12**	**290**	**27**	**15**	1.0
C40-C44	**14**	**210**	**40**	**11**	1.0
TPH (C6-C44)	**93**	**3100**	**82**	**83**	10
Gasoline Range Organics (C6-C10)	<5.0	<25	<5.0	<5.0	5.0
Diesel Range Organics (C10-C23)	**6.7**	**530**	<5.0	<5.0	5.0
Oil Range Organics (C23-C44)	**86**	**2600**	**82**	**80**	5.0
Surrogates					**%REC Limits**
o-Terphenyl	76%	71%	58%	88%	50-150

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Carbon Chain by GC/FID

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: mg/kg

Date Sampled:	06/20/18	06/20/18	06/20/18	06/20/18	
Date Prepared:	06/28/18	06/22/18	06/22/18	06/28/18	
Date Analyzed:	06/29/18	06/23/18	06/23/18	06/29/18	
AA ID No:	8F20019-14	8F20019-15	8F20019-17	8F20019-18	
Client ID No:	SB-5-2.5	SB-5-5	SB-3-1	SB-3-2.5	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL
Carbon Chain Characterization 8015M (EPA 8015M)					
C6-C8	<1.0	<1.0	<1.0	<1.0	1.0
C8-C10	<1.0	<1.0	<1.0	<1.0	1.0
C10-C12	<1.0	<1.0	<1.0	<1.0	1.0
C12-C14	<1.0	<1.0	<1.0	<1.0	1.0
C14-C16	**2.2**	<1.0	<1.0	<1.0	1.0
C16-C18	**16**	<1.0	<1.0	<1.0	1.0
C18-C20	**29**	<1.0	<1.0	<1.0	1.0
C20-C22	**44**	<1.0	<1.0	<1.0	1.0
C22-C24	**75**	<1.0	<1.0	<1.0	1.0
C24-C26	**71**	<1.0	<1.0	<1.0	1.0
C26-C28	**120**	<1.0	<1.0	**1.3**	1.0
C28-C32	**290**	**3.4**	**4.4**	**5.9**	1.0
C32-C34	**84**	<1.0	**2.1**	**2.8**	1.0
C34-C36	**64**	**1.1**	**2.2**	**2.9**	1.0
C36-C40	**120**	**7.2**	**7.0**	**9.1**	1.0
C40-C44	**57**	**19**	**4.7**	**11**	1.0
TPH (C6-C44)	**970**	**30**	**20**	**33**	10
Gasoline Range Organics (C6-C10)	<5.0	<5.0	<5.0	<5.0	5.0
Diesel Range Organics (C10-C23)	**130**	<5.0	<5.0	<5.0	5.0
Oil Range Organics (C23-C44)	**840**	**30**	**20**	**33**	5.0
Surrogates					**%REC Limits**
o-Terphenyl	87%	79%	93%	90%	50-150

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client:	AECOM (LA)	**AA Project No:**	A94898
Project No:	NA	**Date Received:**	06/20/18
Project Name:	128 Hurricane - Soil & GW	**Date Reported:**	06/29/18
Method:	Carbon Chain by GC/FID	**Units:**	mg/kg

Date Sampled:	06/20/18	06/20/18	06/20/18	06/20/18	
Date Prepared:	06/22/18	06/22/18	06/22/18	06/22/18	
Date Analyzed:	06/23/18	06/23/18	06/23/18	06/23/18	
AA ID No:	8F20019-19	8F20019-20	8F20019-21	8F20019-22	
Client ID No:	SB-3-5	SB-1-0.5	SB-1-1	SB-1-2.5	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL
Carbon Chain Characterization 8015M (EPA 8015M)					
C6-C8	<1.0	<1.0	<1.0	<1.0	1.0
C8-C10	<1.0	<1.0	<1.0	<1.0	1.0
C10-C12	<1.0	<1.0	<1.0	<1.0	1.0
C12-C14	<1.0	<1.0	<1.0	<1.0	1.0
C14-C16	<1.0	<1.0	<1.0	<1.0	1.0
C16-C18	<1.0	**2.2**	<1.0	<1.0	1.0
C18-C20	<1.0	<1.0	<1.0	<1.0	1.0
C20-C22	<1.0	**1.8**	**1.5**	<1.0	1.0
C22-C24	<1.0	**2.5**	**3.8**	**1.7**	1.0
C24-C26	<1.0	**5.5**	**4.8**	**1.5**	1.0
C26-C28	<1.0	**5.3**	**9.3**	**6.7**	1.0
C28-C32	<1.0	**16**	**30**	**22**	1.0
C32-C34	<1.0	**6.6**	**13**	**7.2**	1.0
C34-C36	<1.0	**5.9**	**9.6**	**5.5**	1.0
C36-C40	**3.3**	**7.1**	**19**	**12**	1.0
C40-C44	**9.2**	**10**	**16**	**8.4**	1.0
TPH (C6-C44)	**12**	**63**	**110**	**64**	10
Gasoline Range Organics (C6-C10)	<5.0	<5.0	<5.0	<5.0	5.0
Diesel Range Organics (C10-C23)	<5.0	**5.2**	<5.0	<5.0	5.0
Oil Range Organics (C23-C44)	**12**	**58**	**100**	**63**	5.0
Surrogates					**%REC Limits**
o-Terphenyl	90%	87%	95%	85%	50-150

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Carbon Chain by GC/FID

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: mg/kg

Date Sampled:	06/20/18	06/20/18	06/20/18	06/20/18	
Date Prepared:	06/22/18	06/22/18	06/22/18	06/22/18	
Date Analyzed:	06/23/18	06/23/18	06/23/18	06/23/18	
AA ID No:	8F20019-23	8F20019-24	8F20019-27	8F20019-28	
Client ID No:	SB-2-0.5	SB-2-1	SB-2-1 DUP	SB-3-5 DUP	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL
Carbon Chain Characterization 8015M (EPA 8015M)					
C6-C8	<1.0	<1.0	<1.0	<1.0	1.0
C8-C10	<1.0	<1.0	<1.0	<1.0	1.0
C10-C12	<1.0	<1.0	<1.0	<1.0	1.0
C12-C14	<1.0	<1.0	<1.0	<1.0	1.0
C14-C16	<1.0	<1.0	<1.0	<1.0	1.0
C16-C18	<1.0	<1.0	<1.0	<1.0	1.0
C18-C20	<1.0	<1.0	<1.0	<1.0	1.0
C20-C22	<1.0	<1.0	<1.0	<1.0	1.0
C22-C24	<1.0	<1.0	<1.0	<1.0	1.0
C24-C26	<1.0	<1.0	<1.0	<1.0	1.0
C26-C28	**1.2**	**1.5**	**1.6**	<1.0	1.0
C28-C32	**5.1**	**5.4**	**6.1**	<1.0	1.0
C32-C34	**1.8**	**1.2**	**1.7**	<1.0	1.0
C34-C36	**1.8**	**1.4**	**1.7**	<1.0	1.0
C36-C40	**5.1**	**3.8**	**4.4**	**2.0**	1.0
C40-C44	**5.8**	**9.3**	**7.4**	**6.7**	1.0
TPH (C6-C44)	**21**	**23**	**23**	<10	10
Gasoline Range Organics (C6-C10)	<5.0	<5.0	<5.0	<5.0	5.0
Diesel Range Organics (C10-C23)	<5.0	<5.0	<5.0	<5.0	5.0
Oil Range Organics (C23-C44)	**21**	**23**	**23**	**8.7**	5.0
Surrogates					**%REC Limits**
o-Terphenyl	93%	87%	93%	87%	50-150



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client:	AECOM (LA)	**AA Project No:**	A94898
Project No:	NA	**Date Received:**	06/20/18
Project Name:	128 Hurricane - Soil & GW	**Date Reported:**	06/29/18
Method:	Carbon Chain by GC/FID	**Units:**	mg/L

Date Sampled:	06/20/18	
Date Prepared:	06/25/18	
Date Analyzed:	06/25/18	
AA ID No:	8F20019-26	
Client ID No:	SB-4	
Matrix:	Water	
Dilution Factor:	1	MRL

Carbon Chain Characterization 8015M (EPA 8015M)

C6-C8	<0.010	0.010
C8-C10	<0.010	0.010
C10-C12	<0.010	0.010
C12-C14	**0.013**	0.010
C14-C16	**0.013**	0.010
C16-C18	**0.041**	0.010
C18-C20	**0.039**	0.010
C20-C22	**0.050**	0.010
C22-C24	**0.054**	0.010
C24-C26	**0.057**	0.010
C26-C28	**0.018**	0.010
C28-C32	**0.052**	0.010
C32-C34	<0.010	0.010
C34-C36	<0.010	0.010
C36-C40	<0.010	0.010
C40-C44	<0.010	0.010
TPH (C6-C44)	**0.40**	0.10
Gasoline Range Organics (C6-C10)	<0.10	0.10
Diesel Range Organics (C10-C23)	**0.19**	0.10
Oil Range Organics (C23-C44)	**0.17**	0.10

Surrogates		**%REC Limits**
o-Terphenyl	93%	50-150

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Semivolatile Organics by GC/MS

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: mg/kg

Date Sampled:	06/20/18	06/20/18	
Date Prepared:	06/22/18	06/22/18	
Date Analyzed:	06/25/18	06/25/18	
AA ID No:	8F20019-04	8F20019-05	
Client ID No:	SB-4-3.5	SB-4-5	
Matrix:	Soil	Soil	
Dilution Factor:	2	1	MRL
8270C (EPA 8270C)			
3,3´-Dichlorobenzidine	<0.80	<0.40	0.40
Acenaphthene	<0.20	<0.10	0.10
Acenaphthylene	<0.20	<0.10	0.10
Aniline	<0.40	<0.20	0.20
Anthracene	<0.20	<0.10	0.10
Azobenzene	<0.20	<0.10	0.10
Benzidine	<0.80	<0.40	0.40
Benzo(a)anthracene	<0.20	<0.10	0.10
Benzo(a)pyrene	<0.20	<0.10	0.10
Benzo(b)fluoranthene	<0.20	<0.10	0.10
Benzo(g,h,i)perylene	<0.20	<0.10	0.10
Benzoic acid	<2.0	<1.0	1.0
Benzo(k)fluoranthene	<0.20	<0.10	0.10
Benzyl alcohol	<0.20	<0.10	0.10
4-Bromophenyl phenyl ether	<0.20	<0.10	0.10
Butyl benzyl phthalate	<1.0	<0.50	0.50
4-Chloro-3-methylphenol	<0.40	<0.20	0.20
4-Chloroaniline	<0.80	<0.40	0.40
Bis(2-chloroethoxy)methane	<0.20	<0.10	0.10
Bis(2-chloroethyl)ether	<0.20	<0.10	0.10
Bis(2-chloroisopropyl)ether	<0.20	<0.10	0.10
2-Chloronaphthalene	<0.20	<0.10	0.10
2-Chlorophenol	<0.20	<0.10	0.10
4-Chlorophenyl phenyl ether	<0.20	<0.10	0.10
Chrysene	<0.20	<0.10	0.10
Dibenzo(a,h)anthracene	<0.20	<0.10	0.10
Dibenzofuran	<0.20	<0.10	0.10

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Semivolatile Organics by GC/MS

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: mg/kg

Date Sampled:	06/20/18	06/20/18	
Date Prepared:	06/22/18	06/22/18	
Date Analyzed:	06/25/18	06/25/18	
AA ID No:	8F20019-04	8F20019-05	
Client ID No:	SB-4-3.5	SB-4-5	
Matrix:	Soil	Soil	
Dilution Factor:	2	1	MRL
8270C (EPA 8270C) (continued)			
Di-n-butyl phthalate	<4.0	<2.0	2.0
1,2-Dichlorobenzene	<0.20	<0.10	0.10
1,3-Dichlorobenzene	<0.20	<0.10	0.10
1,4-Dichlorobenzene	<0.20	<0.10	0.10
2,4-Dichlorophenol	<0.20	<0.10	0.10
Diethyl phthalate	<1.6	<0.80	0.80
2,4-Dimethylphenol	<0.20	<0.10	0.10
Dimethyl phthalate	<0.40	<0.20	0.20
4,6-Dinitro-2-methylphenol	<0.40	<0.20	0.20
2,4-Dinitrophenol	<0.80	<0.40	0.40
2,6-Dinitrotoluene	<0.20	<0.10	0.10
2,4-Dinitrotoluene	<0.20	<0.10	0.10
Di-n-octyl phthalate	<0.20	<0.10	0.10
1,2-Diphenylhydrazine	<0.20	<0.10	0.10
Bis(2-ethylhexyl)phthalate	<0.40	<0.20	0.20
Fluoranthene	<0.20	<0.10	0.10
Fluorene	<0.20	<0.10	0.10
Hexachlorobenzene	<0.20	<0.10	0.10
Hexachlorobutadiene	<0.20	<0.10	0.10
Hexachlorocyclopentadiene	<0.20	<0.10	0.10
Hexachloroethane	<0.20	<0.10	0.10
Indeno (1,2,3-cd) pyrene	<0.80	<0.40	0.40
Isophorone	<0.20	<0.10	0.10
2-Methylnaphthalene	<0.20	<0.10	0.10
2-Methylphenol	<0.40	<0.20	0.20
3-Methylphenol	<0.40	<0.20	0.20
4-Methylphenol	<0.40	<0.20	0.20

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Semivolatile Organics by GC/MS

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: mg/kg

Date Sampled:	06/20/18	06/20/18	
Date Prepared:	06/22/18	06/22/18	
Date Analyzed:	06/25/18	06/25/18	
AA ID No:	8F20019-04	8F20019-05	
Client ID No:	SB-4-3.5	SB-4-5	
Matrix:	Soil	Soil	
Dilution Factor:	2	1	MRL
8270C (EPA 8270C) (continued)			
Naphthalene	<0.20	<0.10	0.10
4-Nitroaniline	<1.0	<0.50	0.50
3-Nitroaniline	<0.80	<0.40	0.40
2-Nitroaniline	<0.20	<0.10	0.10
Nitrobenzene	<0.20	<0.10	0.10
2-Nitrophenol	<0.40	<0.20	0.20
4-Nitrophenol	<0.40	<0.20	0.20
N-Nitrosodimethylamine	<0.20	<0.10	0.10
N-Nitrosodiphenylamine	<0.20	<0.10	0.10
N-Nitrosodi-n-propylamine	<0.20	<0.10	0.10
Pentachlorophenol	<0.20	<0.10	0.10
Phenanthrene	<0.20	<0.10	0.10
Phenol	<0.20	<0.10	0.10
Pyrene	<0.20	<0.10	0.10
1,2,4-Trichlorobenzene	<0.20	<0.10	0.10
2,4,5-Trichlorophenol	<0.40	<0.20	0.20
2,4,6-Trichlorophenol	<0.40	<0.20	0.20
Surrogates			**%REC Limits**
2-Fluorobiphenyl	9.3% [6]	56%	43-145
2-Fluorophenol	6.2% [6]	45%	21-143
Nitrobenzene-d5	5.7% [6]	47%	35-142
Phenol-d6	6.4% [6]	44%	10-135
Terphenyl-dl4	11% [6]	52%	33-148
2,4,6-Tribromophenol	4.4% [6]	45%	10-150

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Polychlorinated Biphenyls by GC

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: ug/kg

Date Sampled:	06/20/18	06/20/18	
Date Prepared:	06/25/18	06/25/18	
Date Analyzed:	06/25/18	06/25/18	
AA ID No:	8F20019-08	8F20019-20	
Client ID No:	SB-6-0.5	SB-1-0.5	
Matrix:	Soil	Soil	
Dilution Factor:	1	1	MRL
8082 PCBs (EPA 8082)			
Aroclor-1016	<20	<20	20
Aroclor-1221	<20	<20	20
Aroclor-1232	<20	<20	20
Aroclor-1242	<20	<20	20
Aroclor-1248	<20	<20	20
Aroclor-1254	<20	<20	20
Aroclor-1260	<20	<20	20
Surrogates			**%REC Limits**
Decachlorobiphenyl	61%	51%	50-150
Tetrachloro-meta-xylene	80%	57%	50-150

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Organochlorine Pesticides by GC EPA 8081A

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: ug/kg

Date Sampled:	06/20/18	06/20/18	06/20/18	06/20/18	
Date Prepared:	06/28/18	06/25/18	06/28/18	06/25/18	
Date Analyzed:	06/28/18	06/25/18	06/28/18	06/25/18	
AA ID No:	8F20019-01	8F20019-08	8F20019-16	8F20019-20	
Client ID No:	SB-4-0.5	SB-6-0.5	SB-3-0.5	SB-1-0.5	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL
8081A OCPs (EPA 8081A)					
4,4´-DDD	<4.0	<4.0	<4.0	**4.0**	4.0
4,4´-DDE	<4.0	**22**	<4.0	<4.0	4.0
4,4´-DDT	**4.3**	**18**	<4.0	<4.0	4.0
Aldrin	<2.0	<2.0	<2.0	<2.0	2.0
beta-BHC	<2.0	<2.0	<2.0	<2.0	2.0
delta-BHC	<2.0	<2.0	<2.0	<2.0	2.0
alpha-BHC	<2.0	<2.0	<2.0	<2.0	2.0
gamma-BHC (Lindane)	<4.0	<4.0	<4.0	<4.0	4.0
gamma-Chlordane	**9.2**	**5.8**	<4.0	<4.0	4.0
alpha-Chlordane	**18**	**12**	<4.0	**6.9**	4.0
Chlordane	**78**	**86**	<20	**35**	20
Dieldrin	**31**	<2.0	**5.5**	**6.2**	2.0
Endosulfan I	<2.0	<2.0	<2.0	<2.0	2.0
Endosulfan II	<4.0	**6.3**	<4.0	<4.0	4.0
Endosulfan sulfate	<4.0	<4.0	<4.0	<4.0	4.0
Endrin	<4.0	<4.0	<4.0	<4.0	4.0
Endrin aldehyde	<4.0	<4.0	<4.0	<4.0	4.0
Endrin ketone	<4.0	<4.0	<4.0	<4.0	4.0
Heptachlor	<2.0	<2.0	<2.0	<2.0	2.0
Heptachlor epoxide	<2.0	<2.0	<2.0	<2.0	2.0
Methoxychlor	<20	<20	<20	<20	20
Toxaphene	<100	<100	<100	<100	100
Surrogates					**%REC Limits**
Decachlorobiphenyl	66%	61%	75%	51%	50-150
Tetrachloro-meta-xylene	60%	80%	64%	57%	50-150

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Herbicides by EPA 8151A

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: ug/kg

Date Sampled:	06/20/18	06/20/18	
Date Prepared:	06/25/18	06/25/18	
Date Analyzed:	06/25/18	06/25/18	
AA ID No:	8F20019-08	8F20019-20	
Client ID No:	SB-6-0.5	SB-1-0.5	
Matrix:	Soil	Soil	
Dilution Factor:	1	1	MRL
8151A Herbicides (EPA 8151A)			
Acifluorfen	<20 [1]	<20 [1]	20
Bentazon	<10 [1]	<10 [1]	10
Chloramben	<10 [1]	<10 [1]	10
2,4-D	<10 [1]	<10 [1]	10
Dalapon	<20 [1]	<20 [1]	20
2,4-DB	<10 [1]	<10 [1]	10
DCPA Diacid	<20 [1]	<20 [1]	20
Dicamba	<10 [1]	<10 [1]	10
3,5-Dichlorobenzoic acid	<10 [1]	<10 [1]	10
Dichloroprop	<10 [1]	<10 [1]	10
Dinoseb	<20 [1]	<20 [1]	20
MCPA	<2000 [1]	<2000 [1]	2000
MCPP	<2000 [1]	<2000 [1]	2000
4-Nitrophenol	<10 [1]	<10 [1]	10
Pentachlorophenol	<10 [1]	<10 [1]	10
Picloram	<10 [1]	<10 [1]	10
2,4,5-T	<10 [1]	<10 [1]	10
2,4,5-TP (Silvex)	<10 [1]	<10 [1]	10
Surrogates			**%REC Limits**
DCAA	49% [1]	71% [1]	40-150

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Total Metals CAM 17

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: mg/kg

Date Sampled:	06/20/18	06/20/18	06/20/18	06/20/18	
Date Prepared:	06/25/18	06/25/18	06/25/18	06/25/18	
Date Analyzed:	06/25/18	06/25/18	06/25/18	06/25/18	
AA ID No:	8F20019-01	8F20019-04	8F20019-05	8F20019-06	
Client ID No:	SB-4-0.5	SB-4-3.5	SB-4-5	SB-4-10	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL
Mercury Total EPA 7470A/7471A (EPA 7471A)					
Mercury	**0.25**	**0.090**	**0.030**	<0.020	0.020

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Total Metals CAM 17

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: mg/kg

Date Sampled:	06/20/18	06/20/18	06/20/18	06/20/18	
Date Prepared:	06/25/18	06/25/18	06/25/18	06/25/18	
Date Analyzed:	06/25/18	06/25/18	06/25/18	06/25/18	
AA ID No:	8F20019-08	8F20019-10	8F20019-12	8F20019-13	
Client ID No:	SB-6-0.5	SB-6-2.5	SB-5-0.5	SB-5-1	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	5	MRL
Mercury Total EPA 7470A/7471A (EPA 7471A)					
Mercury	**0.19**	**0.084**	**0.42**	**2.4**	0.020

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Total Metals CAM 17

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: mg/kg

Date Sampled:	06/20/18	06/20/18	06/20/18	06/20/18	
Date Prepared:	06/25/18	06/25/18	06/25/18	06/25/18	
Date Analyzed:	06/25/18	06/25/18	06/25/18	06/25/18	
AA ID No:	8F20019-14	8F20019-16	8F20019-18	8F20019-20	
Client ID No:	SB-5-2.5	SB-3-0.5	SB-3-2.5	SB-1-0.5	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL
Mercury Total EPA 7470A/7471A (EPA 7471A)					
Mercury	**0.038**	**0.066**	**0.63**	**0.13**	0.020

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Operations Manager

LABORATORY ANALYSIS RESULTS

Client:	AECOM (LA)	**AA Project No:**	A94898
Project No:	NA	**Date Received:**	06/20/18
Project Name:	128 Hurricane - Soil & GW	**Date Reported:**	06/29/18
Method:	Total Metals CAM 17	**Units:**	mg/kg

Date Sampled:	06/20/18	06/20/18	
Date Prepared:	06/25/18	06/25/18	
Date Analyzed:	06/25/18	06/25/18	
AA ID No:	8F20019-22	8F20019-23	
Client ID No:	SB-1-2.5	SB-2-0.5	
Matrix:	Soil	Soil	
Dilution Factor:	1	1	MRL
Mercury Total EPA 7470A/7471A (EPA 7471A)			
Mercury	**0.068**	**0.080**	0.020

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Operations Manager

LABORATORY ANALYSIS RESULTS

Client:	AECOM (LA)	**AA Project No:**	A94898
Project No:	NA	**Date Received:**	06/20/18
Project Name:	128 Hurricane - Soil & GW	**Date Reported:**	06/29/18
Method:	Total Metals CAM 17	**Units:**	mg/L

Date Sampled:	06/20/18	
Date Prepared:	06/21/18	
Date Analyzed:	06/22/18	
AA ID No:	8F20019-26	
Client ID No:	SB-4	
Matrix:	Water	
Dilution Factor:	1	MRL

Mercury Total EPA 7470A/7471A (EPA 7470A)

Mercury	<0.00050	0.00050

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LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Total Metals by ICP Atomic Emission Spectroscopy

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

AA I.D. No.	Client I.D. No.	Sampled	Prepared	Analyzed	Dilution	Result	Units	MRL
Lead Total EPA 6010B (EPA 6010B)								
8F20019-02	SB-4-1	06/20/18	06/28/18	06/29/18	1	**6.7**	mg/kg	3
8F20019-03	SB-4-2.5	06/20/18	06/28/18	06/29/18	1	**6.8**	mg/kg	3
8F20019-11	SB-6-5	06/20/18	06/28/18	06/29/18	1	**5.1**	mg/kg	3
8F20019-19	SB-3-5	06/20/18	06/28/18	06/29/18	1	**3.8**	mg/kg	3

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Operations Manager

LABORATORY ANALYSIS RESULTS

Client:	AECOM (LA)	**AA Project No:**	A94898
Project No:	NA	**Date Received:**	06/20/18
Project Name:	128 Hurricane - Soil & GW	**Date Reported:**	06/29/18
Method:	Total Metals by ICP/MS EPA 6020B	**Units:**	ug/L

Date Sampled:	06/20/18	
Date Prepared:	06/22/18	
Date Analyzed:	06/25/18	
AA ID No:	8F20019-26	
Client ID No:	SB-4	
Matrix:	Water	
Dilution Factor:	1	MRL

Metals Total 6020B (EPA 6020B)

Antimony	<5.0	5.0
Arsenic	**100**	5.0
Barium	**300**	5.0
Beryllium	<5.0	5.0
Cadmium	<5.0	5.0
Chromium	**26**	5.0
Cobalt	**6.0**	5.0
Copper	**17**	5.0
Lead	**11**	5.0
Molybdenum	**60**	5.0
Nickel	**49**	5.0
Selenium	<20	20
Silver	<5.0	5.0
Thallium	<5.0	5.0
Vanadium	**35**	20
Zinc	**46**	20

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Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Total Metals CAM 17

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: mg/kg

Date Sampled:	06/20/18	06/20/18	06/20/18	06/20/18	
Date Prepared:	06/22/18	06/22/18	06/22/18	06/22/18	
Date Analyzed:	06/25/18	06/25/18	06/25/18	06/25/18	
AA ID No:	8F20019-01	8F20019-04	8F20019-05	8F20019-06	
Client ID No:	SB-4-0.5	SB-4-3.5	SB-4-5	SB-4-10	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL
CAM Metals Less Hg 6000/7000 (EPA 6010B/7000)					
Antimony	<10	<10	<10	<10	10
Arsenic	**3.0**	**3.5**	**2.0**	**4.1**	0.50
Barium	**54**	**62**	**10**	**21**	10
Beryllium	<1.0	<1.0	<1.0	<1.0	1.0
Cadmium	<1.0	<1.0	<1.0	<1.0	1.0
Chromium	**13**	**13**	**11**	**10**	3.0
Cobalt	**3.2**	**4.0**	<3.0	<3.0	3.0
Copper	**10**	**15**	<3.0	<3.0	3.0
Lead	**34**	**58**	**3.4**	<3.0	3.0
Molybdenum	<5.0	<5.0	<5.0	<5.0	5.0
Nickel	**9.2**	**14**	**7.2**	**6.8**	3.0
Selenium	<0.50	<0.50	<0.50	<0.50	0.50
Silver	<1.0	<1.0	<1.0	<1.0	1.0
Thallium	<5.0	<5.0	<5.0	<5.0	5.0
Vanadium	**25**	**30**	**25**	**23**	10
Zinc	**74**	**99**	**7.2**	**8.4**	3.0

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Total Metals CAM 17

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: mg/kg

Date Sampled:	06/20/18	06/20/18	06/20/18	06/20/18	
Date Prepared:	06/22/18	06/22/18	06/22/18	06/22/18	
Date Analyzed:	06/25/18	06/25/18	06/25/18	06/25/18	
AA ID No:	8F20019-08	8F20019-10	8F20019-12	8F20019-13	
Client ID No:	SB-6-0.5	SB-6-2.5	SB-5-0.5	SB-5-1	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL
CAM Metals Less Hg 6000/7000 (EPA 6010B/7000)					
Antimony	<10	<10	<10	<10	10
Arsenic	**2.7**	**2.9**	**2.8**	**3.3**	0.50
Barium	**60**	**81**	**54**	**56**	10
Beryllium	<1.0	<1.0	<1.0	<1.0	1.0
Cadmium	<1.0	<1.0	<1.0	<1.0	1.0
Chromium	**13**	**12**	**10**	**11**	3.0
Cobalt	**3.8**	**4.0**	**3.1**	**3.3**	3.0
Copper	**5.4**	**14**	**7.2**	**16**	3.0
Lead	**17**	**40**	**12**	**24**	3.0
Molybdenum	<5.0	<5.0	<5.0	<5.0	5.0
Nickel	**10**	**13**	**7.5**	**8.9**	3.0
Selenium	<0.50	<0.50	<0.50	<0.50	0.50
Silver	<1.0	<1.0	<1.0	<1.0	1.0
Thallium	<5.0	<5.0	<5.0	<5.0	5.0
Vanadium	**27**	**34**	**22**	**27**	10
Zinc	**62**	**120**	**30**	**51**	3.0

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Total Metals CAM 17

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: mg/kg

Date Sampled:	06/20/18	06/20/18	06/20/18	06/20/18	
Date Prepared:	06/22/18	06/22/18	06/22/18	06/22/18	
Date Analyzed:	06/25/18	06/25/18	06/25/18	06/25/18	
AA ID No:	8F20019-14	8F20019-16	8F20019-18	8F20019-20	
Client ID No:	SB-5-2.5	SB-3-0.5	SB-3-2.5	SB-1-0.5	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL
CAM Metals Less Hg 6000/7000 (EPA 6010B/7000)					
Antimony	<10	<10	<10	<10	10
Arsenic	**4.3**	**2.4**	**2.2**	**2.2**	0.50
Barium	**92**	**69**	**83**	**50**	10
Beryllium	<1.0	<1.0	<1.0	<1.0	1.0
Cadmium	<1.0	<1.0	<1.0	<1.0	1.0
Chromium	**15**	**17**	**13**	**13**	3.0
Cobalt	**3.4**	**5.3**	**3.8**	**3.3**	3.0
Copper	**5.4**	**3.6**	<3.0	**6.1**	3.0
Lead	**17**	**18**	**5.6**	**37**	3.0
Molybdenum	<5.0	<5.0	<5.0	<5.0	5.0
Nickel	**13**	**10**	**8.9**	**10**	3.0
Selenium	<0.50	<0.50	<0.50	<0.50	0.50
Silver	<1.0	<1.0	<1.0	<1.0	1.0
Thallium	<5.0	<5.0	<5.0	<5.0	5.0
Vanadium	**29**	**36**	**24**	**28**	10
Zinc	**100**	**42**	**22**	**73**	3.0

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Total Metals CAM 17

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: mg/kg

Date Sampled:	06/20/18	06/20/18	
Date Prepared:	06/22/18	06/22/18	
Date Analyzed:	06/25/18	06/25/18	
AA ID No:	8F20019-22	8F20019-23	
Client ID No:	SB-1-2.5	SB-2-0.5	
Matrix:	Soil	Soil	
Dilution Factor:	1	1	MRL
CAM Metals Less Hg 6000/7000 (EPA 6010B/7000)			
Antimony	<10	<10	10
Arsenic	**2.8**	**2.7**	0.50
Barium	**39**	**39**	10
Beryllium	<1.0	<1.0	1.0
Cadmium	<1.0	<1.0	1.0
Chromium	**14**	**11**	3.0
Cobalt	**3.5**	**3.3**	3.0
Copper	<3.0	<3.0	3.0
Lead	**11**	**7.3**	3.0
Molybdenum	<5.0	<5.0	5.0
Nickel	**10**	**9.4**	3.0
Selenium	<0.50	<0.50	0.50
Silver	<1.0	<1.0	1.0
Thallium	<5.0	<5.0	5.0
Vanadium	**26**	**23**	10
Zinc	**38**	**23**	3.0

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: VOCs & OXYGENATES by GC/MS

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: ug/L

Date Sampled:	06/20/18	06/20/18	
Date Prepared:	06/22/18	06/22/18	
Date Analyzed:	06/22/18	06/22/18	
AA ID No:	8F20019-25	8F20019-26	
Client ID No:	TB-062018	SB-4	
Matrix:	Water	Water	
Dilution Factor:	1	1	MRL
8260B+OXYGENATES (EPA 8260B)			
Acetone	<10	<10	10
tert-Amyl Methyl Ether (TAME)	<2.0	<2.0	2.0
Benzene	<0.50	<0.50	0.50
Bromobenzene	<0.50	<0.50	0.50
Bromochloromethane	<0.50	<0.50	0.50
Bromodichloromethane	<0.50	<0.50	0.50
Bromoform	<0.50	<0.50	0.50
Bromomethane	<0.50	<0.50	0.50
2-Butanone (MEK)	<10	<10	10
tert-Butyl alcohol (TBA)	<10	<10	10
sec-Butylbenzene	<0.50	<0.50	0.50
tert-Butylbenzene	<0.50	<0.50	0.50
n-Butylbenzene	<0.50	<0.50	0.50
Carbon Disulfide	<0.50	<0.50	0.50
Carbon Tetrachloride	<0.50	<0.50	0.50
Chlorobenzene	<0.50	<0.50	0.50
Chloroethane	<0.50	<0.50	0.50
Chloroform	<0.50	<0.50	0.50
Chloromethane	<0.50	<0.50	0.50
2-Chlorotoluene	<0.50	<0.50	0.50
4-Chlorotoluene	<0.50	<0.50	0.50
1,2-Dibromo-3-chloropropane	<1.0	<1.0	1.0
Dibromochloromethane	<0.50	<0.50	0.50
1,2-Dibromoethane (EDB)	<0.50	<0.50	0.50
Dibromomethane	<0.50	<0.50	0.50
1,3-Dichlorobenzene	<0.50	<0.50	0.50
1,2-Dichlorobenzene	<0.50	<0.50	0.50

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Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: VOCs & OXYGENATES by GC/MS

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: ug/L

Date Sampled:	06/20/18	06/20/18	
Date Prepared:	06/22/18	06/22/18	
Date Analyzed:	06/22/18	06/22/18	
AA ID No:	8F20019-25	8F20019-26	
Client ID No:	TB-062018	SB-4	
Matrix:	Water	Water	
Dilution Factor:	1	1	MRL
8260B+OXYGENATES (EPA 8260B) (continued)			
1,4-Dichlorobenzene	<0.50	<0.50	0.50
Dichlorodifluoromethane (R12)	<0.50	<0.50	0.50
1,1-Dichloroethane	<0.50	<0.50	0.50
1,2-Dichloroethane (EDC)	<0.50	<0.50	0.50
1,1-Dichloroethylene	<0.50	<0.50	0.50
trans-1,2-Dichloroethylene	<0.50	<0.50	0.50
cis-1,2-Dichloroethylene	<0.50	<0.50	0.50
1,2-Dichloropropane	<0.50	<0.50	0.50
2,2-Dichloropropane	<0.50	<0.50	0.50
1,3-Dichloropropane	<0.50	<0.50	0.50
cis-1,3-Dichloropropylene	<0.50	<0.50	0.50
trans-1,3-Dichloropropylene	<0.50	<0.50	0.50
1,1-Dichloropropylene	<0.50	<0.50	0.50
Diisopropyl ether (DIPE)	<2.0	<2.0	2.0
Ethylbenzene	<0.50	<0.50	0.50
Ethyl-tert-Butyl Ether (ETBE)	<2.0	<2.0	2.0
Hexachlorobutadiene	<1.0	<1.0	1.0
2-Hexanone (MBK)	<10	<10	10
Isopropylbenzene	<0.50	<0.50	0.50
4-Isopropyltoluene	<1.0	<1.0	1.0
Methyl-tert-Butyl Ether (MTBE)	<2.0	<2.0	2.0
Methylene Chloride	<5.0	<5.0	5.0
4-Methyl-2-pentanone (MIBK)	<10	<10	10
Naphthalene	<2.0	<2.0	2.0
n-Propylbenzene	<0.50	<0.50	0.50
Styrene	<0.50	<0.50	0.50
1,1,1,2-Tetrachloroethane	<0.50	<0.50	0.50

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: VOCs & OXYGENATES by GC/MS

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: ug/L

Date Sampled:	06/20/18	06/20/18	
Date Prepared:	06/22/18	06/22/18	
Date Analyzed:	06/22/18	06/22/18	
AA ID No:	8F20019-25	8F20019-26	
Client ID No:	TB-062018	SB-4	
Matrix:	Water	Water	
Dilution Factor:	1	1	MRL
8260B+OXYGENATES (EPA 8260B) (continued)			
1,1,2,2-Tetrachloroethane	<0.50	<0.50	0.50
Tetrachloroethylene (PCE)	<0.50	<0.50	0.50
Toluene	<0.50	<0.50	0.50
1,2,3-Trichlorobenzene	<0.50	<0.50	0.50
1,2,4-Trichlorobenzene	<0.50	<0.50	0.50
1,1,1-Trichloroethane	<0.50	<0.50	0.50
1,1,2-Trichloroethane	<0.50	<0.50	0.50
Trichloroethylene (TCE)	<0.50	<0.50	0.50
Trichlorofluoromethane (R11)	<0.50	<0.50	0.50
1,2,3-Trichloropropane	<0.50	<0.50	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.50	<0.50	0.50
1,3,5-Trimethylbenzene	<0.50	<0.50	0.50
1,2,4-Trimethylbenzene	<0.50	<0.50	0.50
Vinyl chloride	<0.50	<0.50	0.50
o-Xylene	<0.50	<0.50	0.50
m,p-Xylenes	<1.0	<1.0	1.0
Surrogates			**%REC Limits**
4-Bromofluorobenzene	103%	103%	70-140
Dibromofluoromethane	129%	127%	70-140
Toluene-d8	102%	104%	70-140

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: VOCs & OXYGENATES by GC/MS EPA 5035

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: ug/kg

Date Sampled:	06/20/18	06/20/18	06/20/18	06/20/18	
Date Prepared:	06/22/18	06/25/18	06/22/18	06/22/18	
Date Analyzed:	06/22/18	06/25/18	06/22/18	06/22/18	
AA ID No:	8F20019-02	8F20019-04	8F20019-05	8F20019-06	
Client ID No:	SB-4-1	SB-4-3.5	SB-4-5	SB-4-10	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL
8260B/5035 +OXYGENATES (EPA 8260B/5035)					
Acetone	<50	**56**	<50	<50	50
tert-Amyl Methyl Ether (TAME)	<5.0	<5.0	<5.0	<5.0	5.0
Benzene	<2.0	<2.0	<2.0	<2.0	2.0
Bromobenzene	<5.0	<5.0	<5.0	<5.0	5.0
Bromochloromethane	<5.0	<5.0	<5.0	<5.0	5.0
Bromodichloromethane	<5.0	<5.0	<5.0	<5.0	5.0
Bromoform	<5.0	<5.0	<5.0	<5.0	5.0
Bromomethane	<5.0	<5.0	<5.0	<5.0	5.0
2-Butanone (MEK)	<50	<50	<50	<50	50
tert-Butyl alcohol (TBA)	<20	<20	<20	<20	20
sec-Butylbenzene	<5.0	<5.0	<5.0	<5.0	5.0
tert-Butylbenzene	<5.0	<5.0	<5.0	<5.0	5.0
n-Butylbenzene	<5.0	<5.0	<5.0	<5.0	5.0
Carbon Disulfide	**6.2**	<5.0	<5.0	<5.0	5.0
Carbon Tetrachloride	<5.0	<5.0	<5.0	<5.0	5.0
Chlorobenzene	<5.0	<5.0	<5.0	<5.0	5.0
Chloroethane	<5.0	<5.0	<5.0	<5.0	5.0
Chloroform	<5.0	<5.0	<5.0	<5.0	5.0
Chloromethane	<5.0	<5.0	<5.0	<5.0	5.0
2-Chlorotoluene	<5.0	<5.0	<5.0	<5.0	5.0
4-Chlorotoluene	<5.0	<5.0	<5.0	<5.0	5.0
1,2-Dibromo-3-chloropropane	<10	<10	<10	<10	10
Dibromochloromethane	<5.0	<5.0	<5.0	<5.0	5.0
1,2-Dibromoethane (EDB)	<5.0	<5.0	<5.0	<5.0	5.0
Dibromomethane	<5.0	<5.0	<5.0	<5.0	5.0
1,4-Dichlorobenzene	<5.0	<5.0	<5.0	<5.0	5.0
1,3-Dichlorobenzene	<5.0	<5.0	<5.0	<5.0	5.0

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: VOCs & OXYGENATES by GC/MS EPA 5035

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: ug/kg

Date Sampled:	06/20/18	06/20/18	06/20/18	06/20/18	
Date Prepared:	06/22/18	06/25/18	06/22/18	06/22/18	
Date Analyzed:	06/22/18	06/25/18	06/22/18	06/22/18	
AA ID No:	8F20019-02	8F20019-04	8F20019-05	8F20019-06	
Client ID No:	SB-4-1	SB-4-3.5	SB-4-5	SB-4-10	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL
8260B/5035 +OXYGENATES (EPA 8260B/5035) (continued)					
1,2-Dichlorobenzene	<5.0	<5.0	<5.0	<5.0	5.0
Dichlorodifluoromethane (R12)	<5.0	<5.0	<5.0	<5.0	5.0
1,1-Dichloroethane	<5.0	<5.0	<5.0	<5.0	5.0
1,2-Dichloroethane (EDC)	<5.0	<5.0	<5.0	<5.0	5.0
trans-1,2-Dichloroethylene	<5.0	<5.0	<5.0	<5.0	5.0
cis-1,2-Dichloroethylene	<5.0	<5.0	<5.0	<5.0	5.0
1,1-Dichloroethylene	<5.0	<5.0	<5.0	<5.0	5.0
2,2-Dichloropropane	<5.0	<5.0	<5.0	<5.0	5.0
1,3-Dichloropropane	<5.0	<5.0	<5.0	<5.0	5.0
1,2-Dichloropropane	<5.0	<5.0	<5.0	<5.0	5.0
trans-1,3-Dichloropropylene	<5.0	<5.0	<5.0	<5.0	5.0
1,1-Dichloropropylene	<5.0	<5.0	<5.0	<5.0	5.0
cis-1,3-Dichloropropylene	<5.0	<5.0	<5.0	<5.0	5.0
Diisopropyl ether (DIPE)	<5.0	<5.0	<5.0	<5.0	5.0
Ethylbenzene	<2.0	<2.0	<2.0	<2.0	2.0
Ethyl-tert-Butyl Ether (ETBE)	<5.0	<5.0	<5.0	<5.0	5.0
Hexachlorobutadiene	<10	<10	<10	<10	10
2-Hexanone (MBK)	<50	<50	<50	<50	50
Isopropylbenzene	<5.0	<5.0	<5.0	<5.0	5.0
4-Isopropyltoluene	<5.0	<5.0	<5.0	<5.0	5.0
Methyl-tert-Butyl Ether (MTBE)	<5.0	<5.0	<5.0	<5.0	5.0
Methylene Chloride	<50	<50	<50	<50	50
4-Methyl-2-pentanone (MIBK)	<50	<50	<50	<50	50
Naphthalene	<10	<10	<10	<10	10
n-Propylbenzene	<5.0	<5.0	<5.0	<5.0	5.0
Styrene	<5.0	<5.0	<5.0	<5.0	5.0
1,1,1,2-Tetrachloroethane	<5.0	<5.0	<5.0	<5.0	5.0

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: VOCs & OXYGENATES by GC/MS EPA 5035

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: ug/kg

Date Sampled:	06/20/18	06/20/18	06/20/18	06/20/18	
Date Prepared:	06/22/18	06/25/18	06/22/18	06/22/18	
Date Analyzed:	06/22/18	06/25/18	06/22/18	06/22/18	
AA ID No:	8F20019-02	8F20019-04	8F20019-05	8F20019-06	
Client ID No:	SB-4-1	SB-4-3.5	SB-4-5	SB-4-10	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL
8260B/5035 +OXYGENATES (EPA 8260B/5035) (continued)					
1,1,2,2-Tetrachloroethane	<5.0	<5.0	<5.0	<5.0	5.0
Tetrachloroethylene (PCE)	<5.0	<5.0	<5.0	<5.0	5.0
Toluene	<2.0	<2.0	<2.0	<2.0	2.0
1,2,4-Trichlorobenzene	<5.0	<5.0	<5.0	<5.0	5.0
1,2,3-Trichlorobenzene	<5.0	<5.0	<5.0	<5.0	5.0
1,1,2-Trichloroethane	<5.0	<5.0	<5.0	<5.0	5.0
1,1,1-Trichloroethane	<5.0	<5.0	<5.0	<5.0	5.0
Trichloroethylene (TCE)	<5.0	<5.0	<5.0	<5.0	5.0
Trichlorofluoromethane (R11)	<5.0	<5.0	<5.0	<5.0	5.0
1,2,3-Trichloropropane	<5.0	<5.0	<5.0	<5.0	5.0
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<5.0	<5.0	<5.0	<5.0	5.0
1,3,5-Trimethylbenzene	<5.0	<5.0	<5.0	<5.0	5.0
1,2,4-Trimethylbenzene	<5.0	<5.0	<5.0	<5.0	5.0
Vinyl chloride	<5.0	<5.0	<5.0	<5.0	5.0
o-Xylene	<2.0	<2.0	<2.0	<2.0	2.0
m,p-Xylenes	<2.0	<2.0	<2.0	<2.0	2.0
Surrogates					**%REC Limits**
4-Bromofluorobenzene	98%	116%	94%	94%	70-140
Dibromofluoromethane	123%	119%	128%	119%	70-140
Toluene-d8	98%	110%	94%	96%	70-140



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: VOCs & OXYGENATES by GC/MS EPA 5035

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: ug/kg

Date Sampled:	06/20/18	06/20/18	06/20/18	06/20/18	
Date Prepared:	06/22/18	06/22/18	06/25/18	06/22/18	
Date Analyzed:	06/22/18	06/22/18	06/25/18	06/22/18	
AA ID No:	8F20019-07	8F20019-09	8F20019-11	8F20019-13	
Client ID No:	SB-4-15	SB-6-1	SB-6-5	SB-5-1	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL
8260B/5035 +OXYGENATES (EPA 8260B/5035)					
Acetone	<50	<50	<50	<50	50
tert-Amyl Methyl Ether (TAME)	<5.0	<5.0	<5.0	<5.0	5.0
Benzene	<2.0	<2.0	<2.0	<2.0	2.0
Bromobenzene	<5.0	<5.0	<5.0	<5.0	5.0
Bromochloromethane	<5.0	<5.0	<5.0	<5.0	5.0
Bromodichloromethane	<5.0	<5.0	<5.0	<5.0	5.0
Bromoform	<5.0	<5.0	<5.0	<5.0	5.0
Bromomethane	<5.0	<5.0	<5.0	<5.0	5.0
2-Butanone (MEK)	<50	<50	<50	<50	50
tert-Butyl alcohol (TBA)	<20	<20	<20	<20	20
sec-Butylbenzene	<5.0	<5.0	<5.0	<5.0	5.0
tert-Butylbenzene	<5.0	<5.0	<5.0	<5.0	5.0
n-Butylbenzene	<5.0	<5.0	<5.0	<5.0	5.0
Carbon Disulfide	<5.0	**10**	<5.0	<5.0	5.0
Carbon Tetrachloride	<5.0	<5.0	<5.0	<5.0	5.0
Chlorobenzene	<5.0	<5.0	<5.0	<5.0	5.0
Chloroethane	<5.0	<5.0	<5.0	<5.0	5.0
Chloroform	<5.0	<5.0	<5.0	<5.0	5.0
Chloromethane	<5.0	<5.0	<5.0	<5.0	5.0
2-Chlorotoluene	<5.0	<5.0	<5.0	<5.0	5.0
4-Chlorotoluene	<5.0	<5.0	<5.0	<5.0	5.0
1,2-Dibromo-3-chloropropane	<10	<10	<10	<10	10
Dibromochloromethane	<5.0	<5.0	<5.0	<5.0	5.0
1,2-Dibromoethane (EDB)	<5.0	<5.0	<5.0	<5.0	5.0
Dibromomethane	<5.0	<5.0	<5.0	<5.0	5.0
1,4-Dichlorobenzene	<5.0	<5.0	<5.0	<5.0	5.0
1,3-Dichlorobenzene	<5.0	<5.0	<5.0	<5.0	5.0

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: VOCs & OXYGENATES by GC/MS EPA 5035

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: ug/kg

Date Sampled:	06/20/18	06/20/18	06/20/18	06/20/18	
Date Prepared:	06/22/18	06/22/18	06/25/18	06/22/18	
Date Analyzed:	06/22/18	06/22/18	06/25/18	06/22/18	
AA ID No:	8F20019-07	8F20019-09	8F20019-11	8F20019-13	
Client ID No:	SB-4-15	SB-6-1	SB-6-5	SB-5-1	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL
8260B/5035 +OXYGENATES (EPA 8260B/5035) (continued)					
1,2-Dichlorobenzene	<5.0	<5.0	<5.0	<5.0	5.0
Dichlorodifluoromethane (R12)	<5.0	<5.0	<5.0	<5.0	5.0
1,1-Dichloroethane	<5.0	<5.0	<5.0	<5.0	5.0
1,2-Dichloroethane (EDC)	<5.0	<5.0	<5.0	<5.0	5.0
trans-1,2-Dichloroethylene	<5.0	<5.0	<5.0	<5.0	5.0
cis-1,2-Dichloroethylene	<5.0	<5.0	<5.0	<5.0	5.0
1,1-Dichloroethylene	<5.0	<5.0	<5.0	<5.0	5.0
2,2-Dichloropropane	<5.0	<5.0	<5.0	<5.0	5.0
1,3-Dichloropropane	<5.0	<5.0	<5.0	<5.0	5.0
1,2-Dichloropropane	<5.0	<5.0	<5.0	<5.0	5.0
trans-1,3-Dichloropropylene	<5.0	<5.0	<5.0	<5.0	5.0
1,1-Dichloropropylene	<5.0	<5.0	<5.0	<5.0	5.0
cis-1,3-Dichloropropylene	<5.0	<5.0	<5.0	<5.0	5.0
Diisopropyl ether (DIPE)	<5.0	<5.0	<5.0	<5.0	5.0
Ethylbenzene	<2.0	<2.0	<2.0	<2.0	2.0
Ethyl-tert-Butyl Ether (ETBE)	<5.0	<5.0	<5.0	<5.0	5.0
Hexachlorobutadiene	<10	<10	<10	<10	10
2-Hexanone (MBK)	<50	<50	<50	<50	50
Isopropylbenzene	<5.0	<5.0	<5.0	<5.0	5.0
4-Isopropyltoluene	<5.0	<5.0	<5.0	<5.0	5.0
Methyl-tert-Butyl Ether (MTBE)	<5.0	<5.0	<5.0	<5.0	5.0
Methylene Chloride	<50	<50	<50	<50	50
4-Methyl-2-pentanone (MIBK)	<50	<50	<50	<50	50
Naphthalene	<10	<10	<10	<10	10
n-Propylbenzene	<5.0	<5.0	<5.0	<5.0	5.0
Styrene	<5.0	<5.0	<5.0	<5.0	5.0
1,1,1,2-Tetrachloroethane	<5.0	<5.0	<5.0	<5.0	5.0

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: VOCs & OXYGENATES by GC/MS EPA 5035

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: ug/kg

Date Sampled:	06/20/18	06/20/18	06/20/18	06/20/18	
Date Prepared:	06/22/18	06/22/18	06/25/18	06/22/18	
Date Analyzed:	06/22/18	06/22/18	06/25/18	06/22/18	
AA ID No:	8F20019-07	8F20019-09	8F20019-11	8F20019-13	
Client ID No:	SB-4-15	SB-6-1	SB-6-5	SB-5-1	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL
8260B/5035 +OXYGENATES (EPA 8260B/5035) (continued)					
1,1,2,2-Tetrachloroethane	<5.0	<5.0	<5.0	<5.0	5.0
Tetrachloroethylene (PCE)	<5.0	<5.0	<5.0	<5.0	5.0
Toluene	<2.0	<2.0	<2.0	<2.0	2.0
1,2,4-Trichlorobenzene	<5.0	<5.0	<5.0	<5.0	5.0
1,2,3-Trichlorobenzene	<5.0	<5.0	<5.0	<5.0	5.0
1,1,2-Trichloroethane	<5.0	<5.0	<5.0	<5.0	5.0
1,1,1-Trichloroethane	<5.0	<5.0	<5.0	<5.0	5.0
Trichloroethylene (TCE)	<5.0	<5.0	<5.0	<5.0	5.0
Trichlorofluoromethane (R11)	<5.0	<5.0	<5.0	<5.0	5.0
1,2,3-Trichloropropane	<5.0	<5.0	<5.0	<5.0	5.0
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<5.0	<5.0	<5.0	<5.0	5.0
1,3,5-Trimethylbenzene	<5.0	<5.0	<5.0	<5.0	5.0
1,2,4-Trimethylbenzene	<5.0	<5.0	<5.0	<5.0	5.0
Vinyl chloride	<5.0	<5.0	<5.0	<5.0	5.0
o-Xylene	<2.0	<2.0	<2.0	<2.0	2.0
m,p-Xylenes	<2.0	<2.0	<2.0	<2.0	2.0
Surrogates					**%REC Limits**
4-Bromofluorobenzene	93%	97%	102%	108%	70-140
Dibromofluoromethane	123%	124%	113%	125%	70-140
Toluene-d8	98%	96%	104%	103%	70-140

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: VOCs & OXYGENATES by GC/MS EPA 5035

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: ug/kg

Date Sampled:	06/20/18	06/20/18	06/20/18	06/20/18	
Date Prepared:	06/25/18	06/22/18	06/22/18	06/22/18	
Date Analyzed:	06/25/18	06/22/18	06/22/18	06/22/18	
AA ID No:	8F20019-15	8F20019-17	8F20019-19	8F20019-21	
Client ID No:	SB-5-5	SB-3-1	SB-3-5	SB-1-1	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL
8260B/5035 +OXYGENATES (EPA 8260B/5035)					
Acetone	<50	<50	<50	<50	50
tert-Amyl Methyl Ether (TAME)	<5.0	<5.0	<5.0	<5.0	5.0
Benzene	<2.0	<2.0	<2.0	<2.0	2.0
Bromobenzene	<5.0	<5.0	<5.0	<5.0	5.0
Bromochloromethane	<5.0	<5.0	<5.0	<5.0	5.0
Bromodichloromethane	<5.0	<5.0	<5.0	<5.0	5.0
Bromoform	<5.0	<5.0	<5.0	<5.0	5.0
Bromomethane	<5.0	<5.0	<5.0	<5.0	5.0
2-Butanone (MEK)	<50	<50	<50	<50	50
tert-Butyl alcohol (TBA)	<20	<20	<20	<20	20
sec-Butylbenzene	<5.0	<5.0	<5.0	<5.0	5.0
tert-Butylbenzene	<5.0	<5.0	<5.0	<5.0	5.0
n-Butylbenzene	<5.0	<5.0	<5.0	<5.0	5.0
Carbon Disulfide	<5.0	<5.0	<5.0	<5.0	5.0
Carbon Tetrachloride	<5.0	<5.0	<5.0	<5.0	5.0
Chlorobenzene	<5.0	<5.0	<5.0	<5.0	5.0
Chloroethane	<5.0	<5.0	<5.0	<5.0	5.0
Chloroform	<5.0	<5.0	<5.0	<5.0	5.0
Chloromethane	<5.0	<5.0	<5.0	<5.0	5.0
2-Chlorotoluene	<5.0	<5.0	<5.0	<5.0	5.0
4-Chlorotoluene	<5.0	<5.0	<5.0	<5.0	5.0
1,2-Dibromo-3-chloropropane	<10	<10	<10	<10	10
Dibromochloromethane	<5.0	<5.0	<5.0	<5.0	5.0
1,2-Dibromoethane (EDB)	<5.0	<5.0	<5.0	<5.0	5.0
Dibromomethane	<5.0	<5.0	<5.0	<5.0	5.0
1,4-Dichlorobenzene	<5.0	<5.0	<5.0	<5.0	5.0
1,3-Dichlorobenzene	<5.0	<5.0	<5.0	<5.0	5.0

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AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: ug/kg

Date Sampled:	06/20/18	06/20/18	06/20/18	06/20/18	
Date Prepared:	06/25/18	06/22/18	06/22/18	06/22/18	
Date Analyzed:	06/25/18	06/22/18	06/22/18	06/22/18	
AA ID No:	8F20019-15	8F20019-17	8F20019-19	8F20019-21	
Client ID No:	SB-5-5	SB-3-1	SB-3-5	SB-1-1	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL
8260B/5035 +OXYGENATES (EPA 8260B/5035) (continued)					
1,2-Dichlorobenzene	<5.0	<5.0	<5.0	<5.0	5.0
Dichlorodifluoromethane (R12)	<5.0	<5.0	<5.0	<5.0	5.0
1,1-Dichloroethane	<5.0	<5.0	<5.0	<5.0	5.0
1,2-Dichloroethane (EDC)	<5.0	<5.0	<5.0	<5.0	5.0
trans-1,2-Dichloroethylene	<5.0	<5.0	<5.0	<5.0	5.0
cis-1,2-Dichloroethylene	<5.0	<5.0	<5.0	<5.0	5.0
1,1-Dichloroethylene	<5.0	<5.0	<5.0	<5.0	5.0
2,2-Dichloropropane	<5.0	<5.0	<5.0	<5.0	5.0
1,3-Dichloropropane	<5.0	<5.0	<5.0	<5.0	5.0
1,2-Dichloropropane	<5.0	<5.0	<5.0	<5.0	5.0
trans-1,3-Dichloropropylene	<5.0	<5.0	<5.0	<5.0	5.0
1,1-Dichloropropylene	<5.0	<5.0	<5.0	<5.0	5.0
cis-1,3-Dichloropropylene	<5.0	<5.0	<5.0	<5.0	5.0
Diisopropyl ether (DIPE)	<5.0	<5.0	<5.0	<5.0	5.0
Ethylbenzene	<2.0	<2.0	<2.0	<2.0	2.0
Ethyl-tert-Butyl Ether (ETBE)	<5.0	<5.0	<5.0	<5.0	5.0
Hexachlorobutadiene	<10	<10	<10	<10	10
2-Hexanone (MBK)	<50	<50	<50	<50	50
Isopropylbenzene	<5.0	<5.0	<5.0	<5.0	5.0
4-Isopropyltoluene	<5.0	<5.0	<5.0	<5.0	5.0
Methyl-tert-Butyl Ether (MTBE)	<5.0	<5.0	<5.0	<5.0	5.0
Methylene Chloride	<50	<50	<50	<50	50
4-Methyl-2-pentanone (MIBK)	<50	<50	<50	<50	50
Naphthalene	<10	<10	<10	<10	10
n-Propylbenzene	<5.0	<5.0	<5.0	<5.0	5.0
Styrene	<5.0	<5.0	<5.0	<5.0	5.0
1,1,1,2-Tetrachloroethane	<5.0	<5.0	<5.0	<5.0	5.0

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LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: VOCs & OXYGENATES by GC/MS EPA 5035

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: ug/kg

Date Sampled:	06/20/18	06/20/18	06/20/18	06/20/18	
Date Prepared:	06/25/18	06/22/18	06/22/18	06/22/18	
Date Analyzed:	06/25/18	06/22/18	06/22/18	06/22/18	
AA ID No:	8F20019-15	8F20019-17	8F20019-19	8F20019-21	
Client ID No:	SB-5-5	SB-3-1	SB-3-5	SB-1-1	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL
8260B/5035 +OXYGENATES (EPA 8260B/5035) (continued)					
1,1,2,2-Tetrachloroethane	<5.0	<5.0	<5.0	<5.0	5.0
Tetrachloroethylene (PCE)	<5.0	<5.0	<5.0	<5.0	5.0
Toluene	<2.0	<2.0	<2.0	<2.0	2.0
1,2,4-Trichlorobenzene	<5.0	<5.0	<5.0	<5.0	5.0
1,2,3-Trichlorobenzene	<5.0	<5.0	<5.0	<5.0	5.0
1,1,2-Trichloroethane	<5.0	<5.0	<5.0	<5.0	5.0
1,1,1-Trichloroethane	<5.0	<5.0	<5.0	<5.0	5.0
Trichloroethylene (TCE)	<5.0	<5.0	<5.0	<5.0	5.0
Trichlorofluoromethane (R11)	<5.0	<5.0	<5.0	<5.0	5.0
1,2,3-Trichloropropane	<5.0	<5.0	<5.0	<5.0	5.0
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<5.0	<5.0	<5.0	<5.0	5.0
1,3,5-Trimethylbenzene	<5.0	<5.0	<5.0	<5.0	5.0
1,2,4-Trimethylbenzene	<5.0	<5.0	<5.0	<5.0	5.0
Vinyl chloride	<5.0	<5.0	<5.0	<5.0	5.0
o-Xylene	<2.0	<2.0	<2.0	<2.0	2.0
m,p-Xylenes	<2.0	<2.0	<2.0	<2.0	2.0
Surrogates					**%REC Limits**
4-Bromofluorobenzene	113%	107%	126%	120%	70-140
Dibromofluoromethane	123%	127%	135%	137%	70-140
Toluene-d8	107%	97%	112%	108%	70-140

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LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: VOCs & OXYGENATES by GC/MS EPA 5035

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: ug/kg

Date Sampled:	06/20/18	06/20/18	06/20/18	
Date Prepared:	06/22/18	06/22/18	06/22/18	
Date Analyzed:	06/23/18	06/23/18	06/23/18	
AA ID No:	8F20019-24	8F20019-27	8F20019-28	
Client ID No:	SB-2-1	SB-2-1 DUP	SB-3-5 DUP	
Matrix:	Soil	Soil	Soil	
Dilution Factor:	1	1	1	MRL
8260B/5035 +OXYGENATES (EPA 8260B/5035)				
Acetone	<50	<50	<50	50
tert-Amyl Methyl Ether (TAME)	<5.0	<5.0	<5.0	5.0
Benzene	<2.0	<2.0	<2.0	2.0
Bromobenzene	<5.0	<5.0	<5.0	5.0
Bromochloromethane	<5.0	<5.0	<5.0	5.0
Bromodichloromethane	<5.0	<5.0	<5.0	5.0
Bromoform	<5.0	<5.0	<5.0	5.0
Bromomethane	<5.0	<5.0	<5.0	5.0
2-Butanone (MEK)	<50	<50	<50	50
tert-Butyl alcohol (TBA)	<20	<20	<20	20
sec-Butylbenzene	<5.0	<5.0	<5.0	5.0
tert-Butylbenzene	<5.0	<5.0	<5.0	5.0
n-Butylbenzene	<5.0	<5.0	<5.0	5.0
Carbon Disulfide	**5.0**	<5.0	<5.0	5.0
Carbon Tetrachloride	<5.0	<5.0	<5.0	5.0
Chlorobenzene	<5.0	<5.0	<5.0	5.0
Chloroethane	<5.0	<5.0	<5.0	5.0
Chloroform	<5.0	<5.0	<5.0	5.0
Chloromethane	<5.0	<5.0	<5.0	5.0
2-Chlorotoluene	<5.0	<5.0	<5.0	5.0
4-Chlorotoluene	<5.0	<5.0	<5.0	5.0
1,2-Dibromo-3-chloropropane	<10	<10	<10	10
Dibromochloromethane	<5.0	<5.0	<5.0	5.0
1,2-Dibromoethane (EDB)	<5.0	<5.0	<5.0	5.0
Dibromomethane	<5.0	<5.0	<5.0	5.0
1,4-Dichlorobenzene	<5.0	<5.0	<5.0	5.0
1,3-Dichlorobenzene	<5.0	<5.0	<5.0	5.0

Viorel Vasile
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LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: VOCs & OXYGENATES by GC/MS EPA 5035

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: ug/kg

Date Sampled:	06/20/18	06/20/18	06/20/18	
Date Prepared:	06/22/18	06/22/18	06/22/18	
Date Analyzed:	06/23/18	06/23/18	06/23/18	
AA ID No:	8F20019-24	8F20019-27	8F20019-28	
Client ID No:	SB-2-1	SB-2-1 DUP	SB-3-5 DUP	
Matrix:	Soil	Soil	Soil	
Dilution Factor:	1	1	1	MRL
8260B/5035 +OXYGENATES (EPA 8260B/5035) (continued)				
1,2-Dichlorobenzene	<5.0	<5.0	<5.0	5.0
Dichlorodifluoromethane (R12)	<5.0	<5.0	<5.0	5.0
1,1-Dichloroethane	<5.0	<5.0	<5.0	5.0
1,2-Dichloroethane (EDC)	<5.0	<5.0	<5.0	5.0
trans-1,2-Dichloroethylene	<5.0	<5.0	<5.0	5.0
cis-1,2-Dichloroethylene	<5.0	<5.0	<5.0	5.0
1,1-Dichloroethylene	<5.0	<5.0	<5.0	5.0
2,2-Dichloropropane	<5.0	<5.0	<5.0	5.0
1,3-Dichloropropane	<5.0	<5.0	<5.0	5.0
1,2-Dichloropropane	<5.0	<5.0	<5.0	5.0
trans-1,3-Dichloropropylene	<5.0	<5.0	<5.0	5.0
1,1-Dichloropropylene	<5.0	<5.0	<5.0	5.0
cis-1,3-Dichloropropylene	<5.0	<5.0	<5.0	5.0
Diisopropyl ether (DIPE)	<5.0	<5.0	<5.0	5.0
Ethylbenzene	<2.0	<2.0	<2.0	2.0
Ethyl-tert-Butyl Ether (ETBE)	<5.0	<5.0	<5.0	5.0
Hexachlorobutadiene	<10	<10	<10	10
2-Hexanone (MBK)	<50	<50	<50	50
Isopropylbenzene	<5.0	<5.0	<5.0	5.0
4-Isopropyltoluene	<5.0	<5.0	<5.0	5.0
Methyl-tert-Butyl Ether (MTBE)	<5.0	<5.0	<5.0	5.0
Methylene Chloride	<50	<50	<50	50
4-Methyl-2-pentanone (MIBK)	<50	<50	<50	50
Naphthalene	<10	<10	<10	10
n-Propylbenzene	<5.0	<5.0	<5.0	5.0
Styrene	<5.0	<5.0	<5.0	5.0
1,1,1,2-Tetrachloroethane	<5.0	<5.0	<5.0	5.0

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: VOCs & OXYGENATES by GC/MS EPA 5035

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18
Units: ug/kg

Date Sampled:	06/20/18	06/20/18	06/20/18	
Date Prepared:	06/22/18	06/22/18	06/22/18	
Date Analyzed:	06/23/18	06/23/18	06/23/18	
AA ID No:	8F20019-24	8F20019-27	8F20019-28	
Client ID No:	SB-2-1	SB-2-1 DUP	SB-3-5 DUP	
Matrix:	Soil	Soil	Soil	
Dilution Factor:	1	1	1	MRL
8260B/5035 +OXYGENATES (EPA 8260B/5035) (continued)				
1,1,2,2-Tetrachloroethane	<5.0	<5.0	<5.0	5.0
Tetrachloroethylene (PCE)	<5.0	<5.0	<5.0	5.0
Toluene	<2.0	<2.0	<2.0	2.0
1,2,4-Trichlorobenzene	<5.0	<5.0	<5.0	5.0
1,2,3-Trichlorobenzene	<5.0	<5.0	<5.0	5.0
1,1,2-Trichloroethane	<5.0	<5.0	<5.0	5.0
1,1,1-Trichloroethane	<5.0	<5.0	<5.0	5.0
Trichloroethylene (TCE)	<5.0	<5.0	<5.0	5.0
Trichlorofluoromethane (R11)	<5.0	<5.0	<5.0	5.0
1,2,3-Trichloropropane	<5.0	<5.0	<5.0	5.0
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<5.0	<5.0	<5.0	5.0
1,3,5-Trimethylbenzene	<5.0	<5.0	<5.0	5.0
1,2,4-Trimethylbenzene	<5.0	<5.0	<5.0	5.0
Vinyl chloride	<5.0	<5.0	<5.0	5.0
o-Xylene	<2.0	<2.0	<2.0	2.0
m,p-Xylenes	<2.0	<2.0	<2.0	2.0
Surrogates				**%REC Limits**
4-Bromofluorobenzene	120%	114%	122%	70-140
Dibromofluoromethane	133%	129%	136%	70-140
Toluene-d8	111%	102%	109%	70-140

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LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Semivolatile Organics by GC/MS - Quality Control										
Batch B8F2211 - EPA 3545 MS										
Blank (B8F2211-BLK1)				Prepared: 06/22/18 Analyzed: 06/25/18						
3,3´-Dichlorobenzidine	<0.40	0.40	mg/kg							
Acenaphthene	<0.10	0.10	mg/kg							
Acenaphthylene	<0.10	0.10	mg/kg							
Aniline	<0.20	0.20	mg/kg							
Anthracene	<0.10	0.10	mg/kg							
Azobenzene	<0.10	0.10	mg/kg							
Benzidine	<0.40	0.40	mg/kg							
Benzo(a)anthracene	<0.10	0.10	mg/kg							
Benzo(a)pyrene	<0.10	0.10	mg/kg							
Benzo(b)fluoranthene	<0.10	0.10	mg/kg							
Benzo(g,h,i)perylene	<0.10	0.10	mg/kg							
Benzoic acid	<1.0	1.0	mg/kg							
Benzo(k)fluoranthene	<0.10	0.10	mg/kg							
Benzyl alcohol	<0.10	0.10	mg/kg							
4-Bromophenyl phenyl ether	<0.10	0.10	mg/kg							
Butyl benzyl phthalate	<0.50	0.50	mg/kg							
4-Chloro-3-methylphenol	<0.20	0.20	mg/kg							
4-Chloroaniline	<0.40	0.40	mg/kg							
Bis(2-chloroethoxy)methane	<0.10	0.10	mg/kg							
Bis(2-chloroethyl)ether	<0.10	0.10	mg/kg							
Bis(2-chloroisopropyl)ether	<0.10	0.10	mg/kg							
2-Chloronaphthalene	<0.10	0.10	mg/kg							
2-Chlorophenol	<0.10	0.10	mg/kg							
4-Chlorophenyl phenyl ether	<0.10	0.10	mg/kg							
Chrysene	<0.10	0.10	mg/kg							
Dibenzo(a,h)anthracene	<0.10	0.10	mg/kg							
Dibenzofuran	<0.10	0.10	mg/kg							
Di-n-butyl phthalate	<2.0	2.0	mg/kg							
1,2-Dichlorobenzene	<0.10	0.10	mg/kg							
1,3-Dichlorobenzene	<0.10	0.10	mg/kg							
1,4-Dichlorobenzene	<0.10	0.10	mg/kg							

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LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Semivolatile Organics by GC/MS - Quality Control										
Batch B8F2211 - EPA 3545 MS										
Blank (B8F2211-BLK1) Continued				Prepared: 06/22/18 Analyzed: 06/25/18						
2,4-Dichlorophenol	<0.10	0.10	mg/kg							
Diethyl phthalate	<0.80	0.80	mg/kg							
2,4-Dimethylphenol	<0.10	0.10	mg/kg							
Dimethyl phthalate	<0.20	0.20	mg/kg							
4,6-Dinitro-2-methylphenol	<0.20	0.20	mg/kg							
2,4-Dinitrophenol	<0.40	0.40	mg/kg							
2,6-Dinitrotoluene	<0.10	0.10	mg/kg							
2,4-Dinitrotoluene	<0.10	0.10	mg/kg							
Di-n-octyl phthalate	<0.10	0.10	mg/kg							
1,2-Diphenylhydrazine	<0.10	0.10	mg/kg							
Bis(2-ethylhexyl)phthalate	<0.20	0.20	mg/kg							
Fluoranthene	<0.10	0.10	mg/kg							
Fluorene	<0.10	0.10	mg/kg							
Hexachlorobenzene	<0.10	0.10	mg/kg							
Hexachlorobutadiene	<0.10	0.10	mg/kg							
Hexachlorocyclopentadiene	<0.10	0.10	mg/kg							
Hexachloroethane	<0.10	0.10	mg/kg							
Indeno (1,2,3-cd) pyrene	<0.40	0.40	mg/kg							
Isophorone	<0.10	0.10	mg/kg							
2-Methylnaphthalene	<0.10	0.10	mg/kg							
2-Methylphenol	<0.20	0.20	mg/kg							
3-Methylphenol	<0.20	0.20	mg/kg							
4-Methylphenol	<0.20	0.20	mg/kg							
Naphthalene	<0.10	0.10	mg/kg							
4-Nitroaniline	<0.50	0.50	mg/kg							
3-Nitroaniline	<0.40	0.40	mg/kg							
2-Nitroaniline	<0.10	0.10	mg/kg							
Nitrobenzene	<0.10	0.10	mg/kg							
2-Nitrophenol	<0.20	0.20	mg/kg							
4-Nitrophenol	<0.20	0.20	mg/kg							
N-Nitrosodimethylamine	<0.10	0.10	mg/kg							

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Semivolatile Organics by GC/MS - Quality Control										
Batch B8F2211 - EPA 3545 MS										
Blank (B8F2211-BLK1) Continued				Prepared: 06/22/18 Analyzed: 06/25/18						
N-Nitrosodiphenylamine	<0.10	0.10	mg/kg							
N-Nitrosodi-n-propylamine	<0.10	0.10	mg/kg							
Pentachlorophenol	<0.10	0.10	mg/kg							
Phenanthrene	<0.10	0.10	mg/kg							
Phenol	<0.10	0.10	mg/kg							
Pyrene	<0.10	0.10	mg/kg							
1,2,4-Trichlorobenzene	<0.10	0.10	mg/kg							
2,4,5-Trichlorophenol	<0.20	0.20	mg/kg							
2,4,6-Trichlorophenol	<0.20	0.20	mg/kg							
Surrogate: 2-Fluorobiphenyl	*0.401*		*mg/kg*	*0.50*		*80.2*	*43-145*			
Surrogate: 2-Fluorophenol	*0.674*		*mg/kg*	*1.0*		*67.4*	*21-143*			
Surrogate: Nitrobenzene-d5	*0.340*		*mg/kg*	*0.50*		*67.9*	*35-142*			
Surrogate: Phenol-d6	*0.692*		*mg/kg*	*1.0*		*69.2*	*10-135*			
Surrogate: Terphenyl-dl4	*0.400*		*mg/kg*	*0.50*		*80.1*	*33-148*			
Surrogate: 2,4,6-Tribromophenol	*0.561*		*mg/kg*	*1.0*		*56.1*	*10-150*			
LCS (B8F2211-BS1)				Prepared: 06/22/18 Analyzed: 06/25/18						
Acenaphthene	**0.377**	0.10	mg/kg	0.60		62.8	50-121			
Acenaphthylene	**0.350**	0.10	mg/kg	0.60		58.3	50-120			
Anthracene	**0.371**	0.10	mg/kg	0.60		61.8	41-121			
Benzo(a)anthracene	**0.369**	0.10	mg/kg	0.60		61.5	57-120			
Benzo(a)pyrene	**0.399**	0.10	mg/kg	0.60		66.6	17-163			
Benzo(b)fluoranthene	**0.367**	0.10	mg/kg	0.60		61.1	25-137			
Benzo(g,h,i)perylene	**0.496**	0.10	mg/kg	0.60		82.7	52-125			
Benzo(k)fluoranthene	**0.365**	0.10	mg/kg	0.60		60.8	61-122			***
Butyl benzyl phthalate	**0.331**	0.50	mg/kg	0.60		55.2	19-139			
4-Chloro-3-methylphenol	**0.351**	0.20	mg/kg	0.60		58.5	22-147			
Bis(2-chloroethyl)ether	**0.347**	0.10	mg/kg	0.60		57.9	26-122			
2-Chloronaphthalene	**0.384**	0.10	mg/kg	0.60		64.0	60-118			
4-Chlorophenyl phenyl ether	**0.380**	0.10	mg/kg	0.60		63.3	41-128			
Chrysene	**0.383**	0.10	mg/kg	0.60		63.9	64-116			***
Dibenzo(a,h)anthracene	**0.467**	0.10	mg/kg	0.60		77.9	33-136			

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Semivolatile Organics by GC/MS - Quality Control										
Batch B8F2211 - EPA 3545 MS										
LCS (B8F2211-BS1) Continued				Prepared: 06/22/18 Analyzed: 06/25/18						
Dibenzofuran	**0.373**	0.10	mg/kg	0.60		62.2	50-106			
1,4-Dichlorobenzene	**0.370**	0.10	mg/kg	0.60		61.6	26-105			
2,4-Dichlorophenol	**0.345**	0.10	mg/kg	0.60		57.5	39-135			
Di-n-octyl phthalate	**0.407**	0.10	mg/kg	0.60		67.9	4-146			
Bis(2-ethylhexyl)phthalate	**0.365**	0.20	mg/kg	0.60		60.9	30-210			
Fluoranthene	**0.377**	0.10	mg/kg	0.60		62.8	35-125			
Fluorene	**0.369**	0.10	mg/kg	0.60		61.5	50-120			
Hexachlorobenzene	**0.365**	0.10	mg/kg	0.60		60.8	2-152			
Hexachlorobutadiene	**0.378**	0.10	mg/kg	0.60		62.9	24-116			
Hexachloroethane	**0.395**	0.10	mg/kg	0.60		65.8	40-113			
Indeno (1,2,3-cd) pyrene	**0.611**	0.40	mg/kg	0.60		102	46-133			
Isophorone	**0.363**	0.10	mg/kg	0.60		60.5	21-196			
2-Methylnaphthalene	**0.350**	0.10	mg/kg	0.60		58.3	44-105			
Naphthalene	**0.383**	0.10	mg/kg	0.60		63.8	25-121			
Nitrobenzene	**0.355**	0.10	mg/kg	0.60		59.2	38-133			
2-Nitrophenol	**0.349**	0.20	mg/kg	0.60		58.1	2-163			
N-Nitrosodi-n-propylamine	**0.358**	0.10	mg/kg	0.60		59.6	2-230			
Pentachlorophenol	**0.178**	0.10	mg/kg	0.60		29.7	14-176			
Phenanthrene	**0.366**	0.10	mg/kg	0.60		61.0	58-106			
Phenol	**0.357**	0.10	mg/kg	0.60		59.5	5-112			
Pyrene	**0.354**	0.10	mg/kg	0.60		58.9	52-115			
1,2,4-Trichlorobenzene	**0.364**	0.10	mg/kg	0.60		60.6	44-142			
2,4,6-Trichlorophenol	**0.341**	0.20	mg/kg	0.60		56.9	37-144			
Surrogate: 2-Fluorobiphenyl	*0.435*		*mg/kg*	*0.50*		*87.1*	*43-145*			
Surrogate: 2-Fluorophenol	*0.775*		*mg/kg*	*1.0*		*77.5*	*21-143*			
Surrogate: Nitrobenzene-d5	*0.380*		*mg/kg*	*0.50*		*76.0*	*35-142*			
Surrogate: Phenol-d6	*0.754*		*mg/kg*	*1.0*		*75.4*	*10-135*			
Surrogate: Terphenyl-dl4	*0.401*		*mg/kg*	*0.50*		*80.3*	*33-148*			
Surrogate: 2,4,6-Tribromophenol	*0.736*		*mg/kg*	*1.0*		*73.6*	*10-150*			
LCS Dup (B8F2211-BSD1)				Prepared: 06/22/18 Analyzed: 06/25/18						
Acenaphthene	**0.379**	0.10	mg/kg	0.60		63.2	50-121	0.635	40	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Semivolatile Organics by GC/MS - Quality Control										
Batch B8F2211 - EPA 3545 MS										
LCS Dup (B8F2211-BSD1) Continued				Prepared: 06/22/18 Analyzed: 06/25/18						
Acenaphthylene	**0.358**	0.10	mg/kg	0.60		59.7	50-120	2.43	40	
Anthracene	**0.384**	0.10	mg/kg	0.60		63.9	41-121	3.39	40	
Benzo(a)anthracene	**0.398**	0.10	mg/kg	0.60		66.3	57-120	7.52	40	
Benzo(a)pyrene	**0.424**	0.10	mg/kg	0.60		70.7	17-163	6.07	40	
Benzo(b)fluoranthene	**0.393**	0.10	mg/kg	0.60		65.5	25-137	7.00	40	
Benzo(g,h,i)perylene	**0.567**	0.10	mg/kg	0.60		94.5	52-125	13.4	40	
Benzo(k)fluoranthene	**0.399**	0.10	mg/kg	0.60		66.5	61-122	8.90	40	
Butyl benzyl phthalate	**0.359**	0.50	mg/kg	0.60		59.9	19-139	8.11	40	
4-Chloro-3-methylphenol	**0.417**	0.20	mg/kg	0.60		69.5	22-147	17.2	40	
Bis(2-chloroethyl)ether	**0.384**	0.10	mg/kg	0.60		64.0	26-122	10.1	40	
2-Chloronaphthalene	**0.398**	0.10	mg/kg	0.60		66.3	60-118	3.43	40	
4-Chlorophenyl phenyl ether	**0.387**	0.10	mg/kg	0.60		64.4	41-128	1.72	40	
Chrysene	**0.419**	0.10	mg/kg	0.60		69.9	64-116	8.92	40	
Dibenzo(a,h)anthracene	**0.519**	0.10	mg/kg	0.60		86.4	33-136	10.4	40	
Dibenzofuran	**0.395**	0.10	mg/kg	0.60		65.8	50-106	5.62	40	
1,4-Dichlorobenzene	**0.384**	0.10	mg/kg	0.60		64.0	26-105	3.82	40	
2,4-Dichlorophenol	**0.408**	0.10	mg/kg	0.60		68.0	39-135	16.7	40	
Di-n-octyl phthalate	**0.445**	0.10	mg/kg	0.60		74.2	4-146	8.87	40	
Bis(2-ethylhexyl)phthalate	**0.393**	0.20	mg/kg	0.60		65.5	30-210	7.38	40	
Fluoranthene	**0.402**	0.10	mg/kg	0.60		66.9	35-125	6.43	40	
Fluorene	**0.392**	0.10	mg/kg	0.60		65.3	50-120	5.94	40	
Hexachlorobenzene	**0.402**	0.10	mg/kg	0.60		66.9	2-152	9.60	40	
Hexachlorobutadiene	**0.429**	0.10	mg/kg	0.60		71.5	24-116	12.8	40	
Hexachloroethane	**0.387**	0.10	mg/kg	0.60		64.6	40-113	1.84	40	
Indeno (1,2,3-cd) pyrene	**0.683**	0.40	mg/kg	0.60		114	46-133	11.1	40	
Isophorone	**0.396**	0.10	mg/kg	0.60		66.1	21-196	8.85	40	
2-Methylnaphthalene	**0.389**	0.10	mg/kg	0.60		64.9	44-105	10.7	40	
Naphthalene	**0.421**	0.10	mg/kg	0.60		70.1	25-121	9.46	40	
Nitrobenzene	**0.431**	0.10	mg/kg	0.60		71.9	38-133	19.4	40	
2-Nitrophenol	**0.403**	0.20	mg/kg	0.60		67.2	2-163	14.5	40	
N-Nitrosodi-n-propylamine	**0.351**	0.10	mg/kg	0.60		58.6	2-230	1.75	40	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Semivolatile Organics by GC/MS - Quality Control										
Batch B8F2211 - EPA 3545 MS										
LCS Dup (B8F2211-BSD1) Continued				Prepared: 06/22/18 Analyzed: 06/25/18						
Pentachlorophenol	**0.195**	0.10	mg/kg	0.60		32.5	14-176	9.11	40	
Phenanthrene	**0.389**	0.10	mg/kg	0.60		64.9	58-106	6.25	40	
Phenol	**0.380**	0.10	mg/kg	0.60		63.3	5-112	6.19	40	
Pyrene	**0.371**	0.10	mg/kg	0.60		61.8	52-115	4.69	40	
1,2,4-Trichlorobenzene	**0.422**	0.10	mg/kg	0.60		70.3	44-142	14.8	40	
2,4,6-Trichlorophenol	**0.372**	0.20	mg/kg	0.60		62.0	37-144	8.52	40	
Surrogate: 2-Fluorobiphenyl	*0.416*		*mg/kg*	*0.50*		*83.2*	*43-145*			
Surrogate: 2-Fluorophenol	*0.694*		*mg/kg*	*1.0*		*69.4*	*21-143*			
Surrogate: Nitrobenzene-d5	*0.392*		*mg/kg*	*0.50*		*78.4*	*35-142*			
Surrogate: Phenol-d6	*0.731*		*mg/kg*	*1.0*		*73.1*	*10-135*			
Surrogate: Terphenyl-dl4	*0.396*		*mg/kg*	*0.50*		*79.3*	*33-148*			
Surrogate: 2,4,6-Tribromophenol	*0.705*		*mg/kg*	*1.0*		*70.5*	*10-150*			
Polychlorinated Biphenyls by GC - Quality Control										
Batch B8F2526 - EPA 3550B										
Blank (B8F2526-BLK1)				Prepared & Analyzed: 06/25/18						
Aroclor-1016	<20	20	ug/kg							
Aroclor-1221	<20	20	ug/kg							
Aroclor-1232	<20	20	ug/kg							
Aroclor-1242	<20	20	ug/kg							
Aroclor-1248	<20	20	ug/kg							
Aroclor-1254	<20	20	ug/kg							
Aroclor-1260	<20	20	ug/kg							
Surrogate: Decachlorobiphenyl	*3.39*		*ug/kg*	*5.0*		*67.8*	*50-150*			
Surrogate: Tetrachloro-meta-xylene	*2.14*		*ug/kg*	*5.0*		*42.8*	*50-150*			*S-GC*
LCS (B8F2526-BS2)				Prepared: 06/25/18 Analyzed: 06/26/18						
Aroclor-1016	**54.7**	20	ug/kg	50		109	60-140			
Aroclor-1260	**49.2**	20	ug/kg	50		98.3	60-140			
Surrogate: Decachlorobiphenyl	*3.20*		*ug/kg*	*5.0*		*63.9*	*50-150*			
Surrogate: Tetrachloro-meta-xylene	*3.93*		*ug/kg*	*5.0*		*78.6*	*50-150*			
LCS Dup (B8F2526-BSD2)				Prepared: 06/25/18 Analyzed: 06/26/18						

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Polychlorinated Biphenyls by GC - Quality Control										
Batch B8F2526 - EPA 3550B										
LCS Dup (B8F2526-BSD2) Continued				Prepared: 06/25/18 Analyzed: 06/26/18						
Aroclor-1016	**55.1**	20	ug/kg	50		110	60-140	0.692	40	
Aroclor-1260	**51.2**	20	ug/kg	50		102	60-140	4.10	40	
Surrogate: Decachlorobiphenyl	*3.96*		*ug/kg*	*5.0*		*79.3*	*50-150*			
Surrogate: Tetrachloro-meta-xylene	*2.89*		*ug/kg*	*5.0*		*57.9*	*50-150*			
Organochlorine Pesticides by GC EPA 8081A - Quality Control										
Batch B8F2526 - EPA 3550B										
Blank (B8F2526-BLK1)				Prepared & Analyzed: 06/25/18						
4,4´-DDD	<4.0	4.0	ug/kg							
4,4´-DDE	<4.0	4.0	ug/kg							
4,4´-DDT	<4.0	4.0	ug/kg							
Aldrin	<2.0	2.0	ug/kg							
beta-BHC	<2.0	2.0	ug/kg							
delta-BHC	<2.0	2.0	ug/kg							
alpha-BHC	<2.0	2.0	ug/kg							
gamma-BHC (Lindane)	<4.0	4.0	ug/kg							
gamma-Chlordane	<4.0	4.0	ug/kg							
alpha-Chlordane	<4.0	4.0	ug/kg							
Chlordane	<20	20	ug/kg							
Dieldrin	<2.0	2.0	ug/kg							
Endosulfan I	<2.0	2.0	ug/kg							
Endosulfan II	<4.0	4.0	ug/kg							
Endosulfan sulfate	<4.0	4.0	ug/kg							
Endrin	<4.0	4.0	ug/kg							
Endrin aldehyde	<4.0	4.0	ug/kg							
Endrin ketone	<4.0	4.0	ug/kg							
Heptachlor	<2.0	2.0	ug/kg							
Heptachlor epoxide	<2.0	2.0	ug/kg							
Methoxychlor	<20	20	ug/kg							
Toxaphene	<100	100	ug/kg							
Surrogate: Decachlorobiphenyl	*3.39*		*ug/kg*	*5.0*		*67.8*	*50-150*			



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Organochlorine Pesticides by GC EPA 8081A - Quality Control										
Batch B8F2526 - EPA 3550B										
Blank (B8F2526-BLK1) Continued				Prepared & Analyzed: 06/25/18						
Surrogate: Tetrachloro-meta-xylene	*2.14*		*ug/kg*	*5.0*		*42.8*	*50-150*			*S-GC*
LCS (B8F2526-BS1)				Prepared: 06/25/18 Analyzed: 06/26/18						
4,4´-DDD	**4.69**	4.0	ug/kg	5.0		93.7	60-140			
4,4´-DDE	**4.70**	4.0	ug/kg	5.0		94.1	60-140			
4,4´-DDT	**2.87**	4.0	ug/kg	5.0		57.4	60-140			***
Aldrin	**3.53**	2.0	ug/kg	5.0		70.5	60-140			
beta-BHC	**4.46**	2.0	ug/kg	5.0		89.3	60-140			
delta-BHC	**4.78**	2.0	ug/kg	5.0		95.5	60-140			
alpha-BHC	**3.89**	2.0	ug/kg	5.0		77.8	60-140			
gamma-BHC (Lindane)	**4.23**	4.0	ug/kg	5.0		84.5	60-140			
gamma-Chlordane	**4.45**	4.0	ug/kg	5.0		89.1	60-140			
alpha-Chlordane	**4.47**	4.0	ug/kg	5.0		89.5	60-140			
Dieldrin	**3.92**	2.0	ug/kg	5.0		78.4	60-140			
Endosulfan I	**4.43**	2.0	ug/kg	5.0		88.6	60-140			
Endosulfan II	**4.26**	4.0	ug/kg	5.0		85.1	60-140			
Endosulfan sulfate	**4.33**	4.0	ug/kg	5.0		86.5	60-140			
Endrin	**4.52**	4.0	ug/kg	5.0		90.4	60-140			
Endrin aldehyde	**3.23**	4.0	ug/kg	5.0		64.6	60-140			
Endrin ketone	**3.70**	4.0	ug/kg	5.0		74.0	60-140			
Heptachlor	**4.37**	2.0	ug/kg	5.0		87.3	60-140			
Heptachlor epoxide	**4.34**	2.0	ug/kg	5.0		86.8	60-140			
Methoxychlor	**3.91**	20	ug/kg	5.0		78.2	60-140			
Surrogate: Decachlorobiphenyl	*3.12*		*ug/kg*	*5.0*		*62.4*	*50-150*			
Surrogate: Tetrachloro-meta-xylene	*2.06*		*ug/kg*	*5.0*		*41.3*	*50-150*			*S-GC*
LCS Dup (B8F2526-BSD1)				Prepared: 06/25/18 Analyzed: 06/26/18						
4,4´-DDD	**5.08**	4.0	ug/kg	5.0		102	60-140	7.95	40	
4,4´-DDE	**5.11**	4.0	ug/kg	5.0		102	60-140	8.38	40	
4,4´-DDT	**3.24**	4.0	ug/kg	5.0		64.7	60-140	11.9	40	
Aldrin	**4.32**	2.0	ug/kg	5.0		86.5	60-140	20.3	40	
beta-BHC	**5.09**	2.0	ug/kg	5.0		102	60-140	13.0	40	
delta-BHC	**5.28**	2.0	ug/kg	5.0		106	60-140	10.1	40	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Organochlorine Pesticides by GC EPA 8081A - Quality Control										
Batch B8F2526 - EPA 3550B										
LCS Dup (B8F2526-BSD1) Continued				Prepared: 06/25/18 Analyzed: 06/26/18						
alpha-BHC	**4.72**	2.0	ug/kg	5.0		94.3	60-140	19.2	40	
gamma-BHC (Lindane)	**4.95**	4.0	ug/kg	5.0		98.9	60-140	15.7	40	
gamma-Chlordane	**4.93**	4.0	ug/kg	5.0		98.5	60-140	10.1	40	
alpha-Chlordane	**4.96**	4.0	ug/kg	5.0		99.3	60-140	10.4	40	
Dieldrin	**4.34**	2.0	ug/kg	5.0		86.8	60-140	10.2	40	
Endosulfan I	**4.94**	2.0	ug/kg	5.0		98.7	60-140	10.8	40	
Endosulfan II	**4.61**	4.0	ug/kg	5.0		92.2	60-140	7.99	40	
Endosulfan sulfate	**4.79**	4.0	ug/kg	5.0		95.8	60-140	10.2	40	
Endrin	**4.98**	4.0	ug/kg	5.0		99.6	60-140	9.66	40	
Endrin aldehyde	**3.59**	4.0	ug/kg	5.0		71.9	60-140	10.6	40	
Endrin ketone	**4.04**	4.0	ug/kg	5.0		80.8	60-140	8.82	40	
Heptachlor	**5.19**	2.0	ug/kg	5.0		104	60-140	17.2	40	
Heptachlor epoxide	**4.87**	2.0	ug/kg	5.0		97.3	60-140	11.4	40	
Methoxychlor	**4.34**	20	ug/kg	5.0		86.9	60-140	10.5	40	
Surrogate: Decachlorobiphenyl	*3.39*		*ug/kg*	*5.0*		*67.9*	*50-150*			
Surrogate: Tetrachloro-meta-xylene	*2.93*		*ug/kg*	*5.0*		*58.6*	*50-150*			
Batch B8F2807 - EPA 3550B										
Blank (B8F2807-BLK1)				Prepared & Analyzed: 06/28/18						
4,4´-DDD	<4.0	4.0	ug/kg							
4,4´-DDE	<4.0	4.0	ug/kg							
4,4´-DDT	<4.0	4.0	ug/kg							
Aldrin	<2.0	2.0	ug/kg							
beta-BHC	<2.0	2.0	ug/kg							
delta-BHC	<2.0	2.0	ug/kg							
alpha-BHC	<2.0	2.0	ug/kg							
gamma-BHC (Lindane)	<4.0	4.0	ug/kg							
gamma-Chlordane	<4.0	4.0	ug/kg							
alpha-Chlordane	<4.0	4.0	ug/kg							
Chlordane	<20	20	ug/kg							
Dieldrin	<2.0	2.0	ug/kg							
Endosulfan I	<2.0	2.0	ug/kg							

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Organochlorine Pesticides by GC EPA 8081A - Quality Control										
Batch B8F2807 - EPA 3550B										
Blank (B8F2807-BLK1) Continued				Prepared & Analyzed: 06/28/18						
Endosulfan II	<4.0	4.0	ug/kg							
Endosulfan sulfate	<4.0	4.0	ug/kg							
Endrin	<4.0	4.0	ug/kg							
Endrin aldehyde	<4.0	4.0	ug/kg							
Endrin ketone	<4.0	4.0	ug/kg							
Heptachlor	<2.0	2.0	ug/kg							
Heptachlor epoxide	<2.0	2.0	ug/kg							
Methoxychlor	<20	20	ug/kg							
Toxaphene	<100	100	ug/kg							
Surrogate: Decachlorobiphenyl	*3.42*		*ug/kg*	*5.0*		*68.3*	*50-150*			
Surrogate: Tetrachloro-meta-xylene	*2.91*		*ug/kg*	*5.0*		*58.3*	*50-150*			
LCS (B8F2807-BS1)				Prepared & Analyzed: 06/28/18						
4,4´-DDD	**4.96**	4.0	ug/kg	5.0		99.2	60-140			
4,4´-DDE	**5.13**	4.0	ug/kg	5.0		103	60-140			
4,4´-DDT	**3.56**	4.0	ug/kg	5.0		71.1	60-140			
Aldrin	**4.47**	2.0	ug/kg	5.0		89.3	60-140			
beta-BHC	**5.08**	2.0	ug/kg	5.0		102	60-140			
delta-BHC	**5.15**	2.0	ug/kg	5.0		103	60-140			
alpha-BHC	**4.46**	2.0	ug/kg	5.0		89.2	60-140			
gamma-BHC (Lindane)	**4.68**	4.0	ug/kg	5.0		93.5	60-140			
gamma-Chlordane	**4.90**	4.0	ug/kg	5.0		98.1	60-140			
alpha-Chlordane	**4.92**	4.0	ug/kg	5.0		98.3	60-140			
Dieldrin	**4.33**	2.0	ug/kg	5.0		86.5	60-140			
Endosulfan I	**4.83**	2.0	ug/kg	5.0		96.5	60-140			
Endosulfan II	**4.83**	4.0	ug/kg	5.0		96.5	60-140			
Endosulfan sulfate	**4.87**	4.0	ug/kg	5.0		97.5	60-140			
Endrin	**5.10**	4.0	ug/kg	5.0		102	60-140			
Endrin aldehyde	**4.11**	4.0	ug/kg	5.0		82.3	60-140			
Endrin ketone	**4.22**	4.0	ug/kg	5.0		84.4	60-140			
Heptachlor	**4.90**	2.0	ug/kg	5.0		98.1	60-140			
Heptachlor epoxide	**4.82**	2.0	ug/kg	5.0		96.4	60-140			

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Organochlorine Pesticides by GC EPA 8081A - Quality Control										
Batch B8F2807 - EPA 3550B										
LCS (B8F2807-BS1) Continued				Prepared & Analyzed: 06/28/18						
Methoxychlor	**4.73**	20	ug/kg	5.0		94.6	60-140			
Surrogate: Decachlorobiphenyl	*3.60*		*ug/kg*	*5.0*		*71.9*	*50-150*			
Surrogate: Tetrachloro-meta-xylene	*3.34*		*ug/kg*	*5.0*		*66.8*	*50-150*			
LCS Dup (B8F2807-BSD1)				Prepared & Analyzed: 06/28/18						
4,4´-DDD	**4.84**	4.0	ug/kg	5.0		96.8	60-140	2.43	40	
4,4´-DDE	**4.96**	4.0	ug/kg	5.0		99.3	60-140	3.37	40	
4,4´-DDT	**3.51**	4.0	ug/kg	5.0		70.3	60-140	1.21	40	
Aldrin	**4.14**	2.0	ug/kg	5.0		82.9	60-140	7.45	40	
beta-BHC	**4.70**	2.0	ug/kg	5.0		94.1	60-140	7.67	40	
delta-BHC	**4.90**	2.0	ug/kg	5.0		98.1	60-140	4.91	40	
alpha-BHC	**4.13**	2.0	ug/kg	5.0		82.5	60-140	7.75	40	
gamma-BHC (Lindane)	**4.37**	4.0	ug/kg	5.0		87.4	60-140	6.85	40	
gamma-Chlordane	**4.70**	4.0	ug/kg	5.0		93.9	60-140	4.34	40	
alpha-Chlordane	**4.73**	4.0	ug/kg	5.0		94.5	60-140	3.94	40	
Dieldrin	**4.15**	2.0	ug/kg	5.0		83.0	60-140	4.09	40	
Endosulfan I	**4.60**	2.0	ug/kg	5.0		91.9	60-140	4.85	40	
Endosulfan II	**4.70**	4.0	ug/kg	5.0		94.0	60-140	2.63	40	
Endosulfan sulfate	**4.79**	4.0	ug/kg	5.0		95.9	60-140	1.69	40	
Endrin	**4.90**	4.0	ug/kg	5.0		98.0	60-140	4.02	40	
Endrin aldehyde	**3.93**	4.0	ug/kg	5.0		78.7	60-140	4.50	40	
Endrin ketone	**4.05**	4.0	ug/kg	5.0		81.0	60-140	4.10	40	
Heptachlor	**4.62**	2.0	ug/kg	5.0		92.4	60-140	5.98	40	
Heptachlor epoxide	**4.55**	2.0	ug/kg	5.0		91.0	60-140	5.80	40	
Methoxychlor	**4.74**	20	ug/kg	5.0		94.8	60-140	0.294	40	
Surrogate: Decachlorobiphenyl	*3.59*		*ug/kg*	*5.0*		*71.8*	*50-150*			
Surrogate: Tetrachloro-meta-xylene	*2.85*		*ug/kg*	*5.0*		*57.0*	*50-150*			
Herbicides by EPA 8151A - Quality Control										
Batch B8F2630 - EPA 3550B										
Blank (B8F2630-BLK1)				Prepared & Analyzed: 06/25/18						*
Acifluorfen	<20	20	ug/kg							

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Herbicides by EPA 8151A - Quality Control										
Batch B8F2630 - EPA 3550B										
Blank (B8F2630-BLK1) Continued				Prepared & Analyzed: 06/25/18						*
Bentazon	<10	10	ug/kg							
Chloramben	<10	10	ug/kg							
2,4-D	<10	10	ug/kg							
Dalapon	<20	20	ug/kg							
2,4-DB	<10	10	ug/kg							
DCPA Diacid	<20	20	ug/kg							
Dicamba	<10	10	ug/kg							
3,5-Dichlorobenzoic acid	<10	10	ug/kg							
Dichloroprop	<10	10	ug/kg							
Dinoseb	<20	20	ug/kg							
MCPA	<2000	2000	ug/kg							
MCPP	<2000	2000	ug/kg							
4-Nitrophenol	<10	10	ug/kg							
Pentachlorophenol	<10	10	ug/kg							
Picloram	<10	10	ug/kg							
2,4,5-T	<10	10	ug/kg							
2,4,5-TP (Silvex)	<10	10	ug/kg							
Surrogate: DCAA	*2.39*		*ug/kg*	*5.0*		*47.8*	*40-150*			
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2214 - EPA 5030B										
Blank (B8F2214-BLK1)				Prepared & Analyzed: 06/22/18						
Acetone	<10	10	ug/L							
tert-Amyl Methyl Ether (TAME)	<2.0	2.0	ug/L							
Benzene	<0.50	0.50	ug/L							
Bromobenzene	<0.50	0.50	ug/L							
Bromochloromethane	<0.50	0.50	ug/L							
Bromodichloromethane	<0.50	0.50	ug/L							
Bromoform	<0.50	0.50	ug/L							
Bromomethane	<0.50	0.50	ug/L							
2-Butanone (MEK)	<10	10	ug/L							
tert-Butyl alcohol (TBA)	<10	10	ug/L							



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Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

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Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2214 - EPA 5030B										
Blank (B8F2214-BLK1) Continued				Prepared & Analyzed: 06/22/18						
sec-Butylbenzene	<0.50	0.50	ug/L							
tert-Butylbenzene	<0.50	0.50	ug/L							
n-Butylbenzene	<0.50	0.50	ug/L							
Carbon Disulfide	<0.50	0.50	ug/L							
Carbon Tetrachloride	<0.50	0.50	ug/L							
Chlorobenzene	<0.50	0.50	ug/L							
Chloroethane	<0.50	0.50	ug/L							
Chloroform	<0.50	0.50	ug/L							
Chloromethane	<0.50	0.50	ug/L							
2-Chlorotoluene	<0.50	0.50	ug/L							
4-Chlorotoluene	<0.50	0.50	ug/L							
1,2-Dibromo-3-chloropropane	<1.0	1.0	ug/L							
Dibromochloromethane	<0.50	0.50	ug/L							
1,2-Dibromoethane (EDB)	<0.50	0.50	ug/L							
Dibromomethane	<0.50	0.50	ug/L							
1,3-Dichlorobenzene	<0.50	0.50	ug/L							
1,2-Dichlorobenzene	<0.50	0.50	ug/L							
1,4-Dichlorobenzene	<0.50	0.50	ug/L							
Dichlorodifluoromethane (R12)	<0.50	0.50	ug/L							
1,1-Dichloroethane	<0.50	0.50	ug/L							
1,2-Dichloroethane (EDC)	<0.50	0.50	ug/L							
1,1-Dichloroethylene	<0.50	0.50	ug/L							
trans-1,2-Dichloroethylene	<0.50	0.50	ug/L							
cis-1,2-Dichloroethylene	<0.50	0.50	ug/L							
1,2-Dichloropropane	<0.50	0.50	ug/L							
2,2-Dichloropropane	<0.50	0.50	ug/L							
1,3-Dichloropropane	<0.50	0.50	ug/L							
cis-1,3-Dichloropropylene	<0.50	0.50	ug/L							
trans-1,3-Dichloropropylene	<0.50	0.50	ug/L							
1,1-Dichloropropylene	<0.50	0.50	ug/L							
Diisopropyl ether (DIPE)	<2.0	2.0	ug/L							

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2214 - EPA 5030B										
Blank (B8F2214-BLK1) Continued				Prepared & Analyzed: 06/22/18						
Ethylbenzene	<0.50	0.50	ug/L							
Ethyl-tert-Butyl Ether (ETBE)	<2.0	2.0	ug/L							
Hexachlorobutadiene	<1.0	1.0	ug/L							
2-Hexanone (MBK)	<10	10	ug/L							
Isopropylbenzene	<0.50	0.50	ug/L							
4-Isopropyltoluene	<1.0	1.0	ug/L							
Methyl-tert-Butyl Ether (MTBE)	<2.0	2.0	ug/L							
Methylene Chloride	<5.0	5.0	ug/L							
4-Methyl-2-pentanone (MIBK)	<10	10	ug/L							
Naphthalene	<2.0	2.0	ug/L							
n-Propylbenzene	<0.50	0.50	ug/L							
Styrene	<0.50	0.50	ug/L							
1,1,1,2-Tetrachloroethane	<0.50	0.50	ug/L							
1,1,2,2-Tetrachloroethane	<0.50	0.50	ug/L							
Tetrachloroethylene (PCE)	<0.50	0.50	ug/L							
Toluene	<0.50	0.50	ug/L							
1,2,3-Trichlorobenzene	<0.50	0.50	ug/L							
1,2,4-Trichlorobenzene	<0.50	0.50	ug/L							
1,1,1-Trichloroethane	<0.50	0.50	ug/L							
1,1,2-Trichloroethane	<0.50	0.50	ug/L							
Trichloroethylene (TCE)	<0.50	0.50	ug/L							
Trichlorofluoromethane (R11)	<0.50	0.50	ug/L							
1,2,3-Trichloropropane	<0.50	0.50	ug/L							
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.50	0.50	ug/L							
1,3,5-Trimethylbenzene	<0.50	0.50	ug/L							
1,2,4-Trimethylbenzene	<0.50	0.50	ug/L							
Vinyl chloride	<0.50	0.50	ug/L							
o-Xylene	<0.50	0.50	ug/L							
m,p-Xylenes	<1.0	1.0	ug/L							
Surrogate: 4-Bromofluorobenzene	*48.1*		*ug/L*	*50*		*96.3*	*70-140*			

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2214 - EPA 5030B										
Blank (B8F2214-BLK1) Continued				Prepared & Analyzed: 06/22/18						
Surrogate: Dibromofluoromethane	*60.2*		*ug/L*	*50*		*120*	*70-140*			
Surrogate: Toluene-d8	*50.8*		*ug/L*	*50*		*102*	*70-140*			
LCS (B8F2214-BS1)				Prepared & Analyzed: 06/22/18						
Acetone	**20.8**	10	ug/L	20		104	70-130			
tert-Amyl Methyl Ether (TAME)	**19.9**	2.0	ug/L	20		99.3	70-130			
Benzene	**19.5**	0.50	ug/L	20		97.5	75-125			
Bromobenzene	**21.3**	0.50	ug/L	20		106	70-130			
Bromochloromethane	**19.9**	0.50	ug/L	20		99.4	70-130			
Bromodichloromethane	**18.4**	0.50	ug/L	20		91.8	75-125			
Bromoform	**18.0**	0.50	ug/L	20		90.0	75-125			
Bromomethane	**21.1**	0.50	ug/L	20		106	75-125			
2-Butanone (MEK)	**23.4**	10	ug/L	20		117	70-130			
tert-Butyl alcohol (TBA)	**110**	10	ug/L	100		110	70-130			
sec-Butylbenzene	**18.5**	0.50	ug/L	20		92.7	70-130			
tert-Butylbenzene	**20.7**	0.50	ug/L	20		104	70-130			
n-Butylbenzene	**19.4**	0.50	ug/L	20		97.1	70-130			
Carbon Disulfide	**18.7**	0.50	ug/L	20		93.6	70-130			
Carbon Tetrachloride	**18.0**	0.50	ug/L	20		89.8	75-125			
Chlorobenzene	**19.8**	0.50	ug/L	20		98.8	75-125			
Chloroethane	**18.4**	0.50	ug/L	20		91.9	75-125			
Chloroform	**18.1**	0.50	ug/L	20		90.3	75-125			
Chloromethane	**18.0**	0.50	ug/L	20		90.2	65-125			
2-Chlorotoluene	**19.3**	0.50	ug/L	20		96.4	70-130			
4-Chlorotoluene	**19.4**	0.50	ug/L	20		97.0	70-130			
1,2-Dibromo-3-chloropropane	**23.8**	1.0	ug/L	20		119	70-130			
Dibromochloromethane	**19.0**	0.50	ug/L	20		95.0	75-125			
1,2-Dibromoethane (EDB)	**19.0**	0.50	ug/L	20		94.9	70-130			
Dibromomethane	**19.9**	0.50	ug/L	20		99.3	70-130			
1,3-Dichlorobenzene	**21.5**	0.50	ug/L	20		107	70-130			
1,2-Dichlorobenzene	**23.6**	0.50	ug/L	20		118	70-130			
1,4-Dichlorobenzene	**22.7**	0.50	ug/L	20		114	75-125			

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Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2214 - EPA 5030B										
LCS (B8F2214-BS1) Continued				Prepared & Analyzed: 06/22/18						
Dichlorodifluoromethane (R12)	**19.4**	0.50	ug/L	20		97.0	70-130			
1,1-Dichloroethane	**19.1**	0.50	ug/L	20		95.5	70-125			
1,2-Dichloroethane (EDC)	**18.3**	0.50	ug/L	20		91.3	75-125			
1,1-Dichloroethylene	**16.3**	0.50	ug/L	20		81.7	70-130			
trans-1,2-Dichloroethylene	**18.5**	0.50	ug/L	20		92.4	75-125			
cis-1,2-Dichloroethylene	**17.7**	0.50	ug/L	20		88.4	75-125			
1,2-Dichloropropane	**18.7**	0.50	ug/L	20		93.3	75-130			
2,2-Dichloropropane	**16.8**	0.50	ug/L	20		84.2	70-130			
1,3-Dichloropropane	**20.7**	0.50	ug/L	20		103	70-130			
cis-1,3-Dichloropropylene	**19.5**	0.50	ug/L	20		97.6	75-125			
trans-1,3-Dichloropropylene	**19.4**	0.50	ug/L	20		96.8	70-130			
1,1-Dichloropropylene	**17.8**	0.50	ug/L	20		89.2	70-130			
Diisopropyl ether (DIPE)	**17.7**	2.0	ug/L	20		88.6	70-130			
Ethylbenzene	**19.1**	0.50	ug/L	20		95.4	75-125			
Ethyl-tert-Butyl Ether (ETBE)	**19.8**	2.0	ug/L	20		99.0	70-130			
Hexachlorobutadiene	**21.4**	1.0	ug/L	20		107	70-130			
2-Hexanone (MBK)	**20.0**	10	ug/L	20		100	70-130			
Isopropylbenzene	**18.8**	0.50	ug/L	20		94.2	70-130			
4-Isopropyltoluene	**20.5**	1.0	ug/L	20		103	70-130			
Methyl-tert-Butyl Ether (MTBE)	**43.1**	2.0	ug/L	40		108	75-125			
Methylene Chloride	**17.2**	5.0	ug/L	20		85.9	75-130			
4-Methyl-2-pentanone (MIBK)	**21.6**	10	ug/L	20		108	70-130			
Naphthalene	**25.9**	2.0	ug/L	20		130	70-130			
n-Propylbenzene	**19.0**	0.50	ug/L	20		94.8	70-130			
Styrene	**19.8**	0.50	ug/L	20		99.0	70-130			
1,1,1,2-Tetrachloroethane	**20.8**	0.50	ug/L	20		104	70-130			
1,1,2,2-Tetrachloroethane	**24.6**	0.50	ug/L	20		123	70-135			
Tetrachloroethylene (PCE)	**19.1**	0.50	ug/L	20		95.4	75-125			
Toluene	**18.9**	0.50	ug/L	20		94.4	75-125			
1,2,3-Trichlorobenzene	**24.4**	0.50	ug/L	20		122	70-130			
1,2,4-Trichlorobenzene	**24.0**	0.50	ug/L	20		120	70-130			

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2214 - EPA 5030B										
LCS (B8F2214-BS1) Continued				Prepared & Analyzed: 06/22/18						
1,1,1-Trichloroethane	**17.8**	0.50	ug/L	20		88.8	75-125			
1,1,2-Trichloroethane	**21.5**	0.50	ug/L	20		108	75-125			
Trichloroethylene (TCE)	**18.8**	0.50	ug/L	20		93.8	75-125			
Trichlorofluoromethane (R11)	**19.8**	0.50	ug/L	20		98.8	70-130			
1,2,3-Trichloropropane	**23.5**	0.50	ug/L	20		118	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**17.2**	0.50	ug/L	20		86.2	70-130			
1,3,5-Trimethylbenzene	**18.9**	0.50	ug/L	20		94.6	70-130			
1,2,4-Trimethylbenzene	**18.8**	0.50	ug/L	20		94.0	70-130			
Vinyl chloride	**16.5**	0.50	ug/L	20		82.6	75-125			
o-Xylene	**19.4**	0.50	ug/L	20		96.8	75-125			
m,p-Xylenes	**38.3**	1.0	ug/L	40		95.7	70-130			
Surrogate: 4-Bromofluorobenzene	*47.6*		*ug/L*	*50*		*95.2*	*70-140*			
Surrogate: Dibromofluoromethane	*49.4*		*ug/L*	*50*		*98.8*	*70-140*			
Surrogate: Toluene-d8	*52.4*		*ug/L*	*50*		*105*	*70-140*			
LCS Dup (B8F2214-BSD1)				Prepared & Analyzed: 06/22/18						
Acetone	**19.8**	10	ug/L	20		98.8	70-130	5.22	30	
tert-Amyl Methyl Ether (TAME)	**18.8**	2.0	ug/L	20		94.2	70-130	5.27	30	
Benzene	**21.2**	0.50	ug/L	20		106	75-125	8.45	30	
Bromobenzene	**21.5**	0.50	ug/L	20		107	70-130	0.935	30	
Bromochloromethane	**22.0**	0.50	ug/L	20		110	70-130	10.2	30	
Bromodichloromethane	**19.5**	0.50	ug/L	20		97.6	75-125	6.23	30	
Bromoform	**17.2**	0.50	ug/L	20		85.8	75-125	4.78	30	
Bromomethane	**18.0**	0.50	ug/L	20		90.2	75-125	15.8	30	
2-Butanone (MEK)	**19.7**	10	ug/L	20		98.6	70-130	17.2	30	
tert-Butyl alcohol (TBA)	**82.7**	10	ug/L	100		82.7	70-130	28.5	30	
sec-Butylbenzene	**19.5**	0.50	ug/L	20		97.4	70-130	4.89	30	
tert-Butylbenzene	**22.0**	0.50	ug/L	20		110	70-130	5.85	30	
n-Butylbenzene	**20.0**	0.50	ug/L	20		100	70-130	3.19	30	
Carbon Disulfide	**15.6**	0.50	ug/L	20		78.0	70-130	18.2	30	
Carbon Tetrachloride	**20.6**	0.50	ug/L	20		103	75-125	13.9	30	



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2214 - EPA 5030B										
LCS Dup (B8F2214-BSD1) Continued				Prepared & Analyzed: 06/22/18						
Chlorobenzene	**21.4**	0.50	ug/L	20		107	75-125	7.83	30	
Chloroethane	**18.2**	0.50	ug/L	20		91.1	75-125	0.874	30	
Chloroform	**20.0**	0.50	ug/L	20		100	75-125	10.1	30	
Chloromethane	**16.0**	0.50	ug/L	20		80.1	65-125	11.9	30	
2-Chlorotoluene	**20.4**	0.50	ug/L	20		102	70-130	5.45	30	
4-Chlorotoluene	**20.0**	0.50	ug/L	20		100	70-130	3.10	30	
1,2-Dibromo-3-chloropropane	**16.3**	1.0	ug/L	20		81.4	70-130	37.7	30	AA-C1
Dibromochloromethane	**19.1**	0.50	ug/L	20		95.4	75-125	0.473	30	
1,2-Dibromoethane (EDB)	**18.4**	0.50	ug/L	20		92.2	70-130	2.89	30	
Dibromomethane	**19.4**	0.50	ug/L	20		97.2	70-130	2.14	30	
1,3-Dichlorobenzene	**22.4**	0.50	ug/L	20		112	70-130	4.42	30	
1,2-Dichlorobenzene	**22.9**	0.50	ug/L	20		114	70-130	3.31	30	
1,4-Dichlorobenzene	**22.4**	0.50	ug/L	20		112	75-125	1.64	30	
Dichlorodifluoromethane (R12)	**17.8**	0.50	ug/L	20		89.2	70-130	8.38	30	
1,1-Dichloroethane	**21.2**	0.50	ug/L	20		106	70-125	10.3	30	
1,2-Dichloroethane (EDC)	**19.0**	0.50	ug/L	20		94.8	75-125	3.76	30	
1,1-Dichloroethylene	**17.3**	0.50	ug/L	20		86.6	70-130	5.82	30	
trans-1,2-Dichloroethylene	**22.0**	0.50	ug/L	20		110	75-125	17.3	30	
cis-1,2-Dichloroethylene	**20.3**	0.50	ug/L	20		101	75-125	13.6	30	
1,2-Dichloropropane	**19.4**	0.50	ug/L	20		96.8	75-130	3.63	30	
2,2-Dichloropropane	**18.5**	0.50	ug/L	20		92.7	70-130	9.67	30	
1,3-Dichloropropane	**20.0**	0.50	ug/L	20		100	70-130	3.29	30	
cis-1,3-Dichloropropylene	**19.8**	0.50	ug/L	20		98.8	75-125	1.22	30	
trans-1,3-Dichloropropylene	**19.1**	0.50	ug/L	20		95.4	70-130	1.46	30	
1,1-Dichloropropylene	**19.7**	0.50	ug/L	20		98.5	70-130	9.91	30	
Diisopropyl ether (DIPE)	**18.2**	2.0	ug/L	20		91.2	70-130	3.00	30	
Ethylbenzene	**21.1**	0.50	ug/L	20		106	75-125	10.1	30	
Ethyl-tert-Butyl Ether (ETBE)	**19.1**	2.0	ug/L	20		95.4	70-130	3.71	30	
Hexachlorobutadiene	**24.0**	1.0	ug/L	20		120	70-130	11.6	30	
2-Hexanone (MBK)	**17.9**	10	ug/L	20		89.6	70-130	11.1	30	
Isopropylbenzene	**20.7**	0.50	ug/L	20		103	70-130	9.31	30	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2214 - EPA 5030B										
LCS Dup (B8F2214-BSD1) Continued				Prepared & Analyzed: 06/22/18						
4-Isopropyltoluene	**21.5**	1.0	ug/L	20		108	70-130	4.90	30	
Methyl-tert-Butyl Ether (MTBE)	**40.7**	2.0	ug/L	40		102	75-125	5.77	30	
Methylene Chloride	**15.9**	5.0	ug/L	20		79.5	75-130	7.74	30	
4-Methyl-2-pentanone (MIBK)	**16.4**	10	ug/L	20		81.9	70-130	27.7	30	
Naphthalene	**21.0**	2.0	ug/L	20		105	70-130	21.1	30	
n-Propylbenzene	**20.2**	0.50	ug/L	20		101	70-130	6.19	30	
Styrene	**20.5**	0.50	ug/L	20		103	70-130	3.62	30	
1,1,1,2-Tetrachloroethane	**22.0**	0.50	ug/L	20		110	70-130	5.61	30	
1,1,2,2-Tetrachloroethane	**20.6**	0.50	ug/L	20		103	70-135	17.5	30	
Tetrachloroethylene (PCE)	**22.6**	0.50	ug/L	20		113	75-125	16.8	30	
Toluene	**21.2**	0.50	ug/L	20		106	75-125	11.4	30	
1,2,3-Trichlorobenzene	**22.0**	0.50	ug/L	20		110	70-130	10.1	30	
1,2,4-Trichlorobenzene	**22.9**	0.50	ug/L	20		114	70-130	4.48	30	
1,1,1-Trichloroethane	**19.8**	0.50	ug/L	20		98.8	75-125	10.6	30	
1,1,2-Trichloroethane	**20.3**	0.50	ug/L	20		102	75-125	5.69	30	
Trichloroethylene (TCE)	**20.4**	0.50	ug/L	20		102	75-125	8.48	30	
Trichlorofluoromethane (R11)	**18.3**	0.50	ug/L	20		91.4	70-130	7.78	30	
1,2,3-Trichloropropane	**19.1**	0.50	ug/L	20		95.5	70-130	20.7	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**16.0**	0.50	ug/L	20		80.0	70-130	7.40	30	
1,3,5-Trimethylbenzene	**20.2**	0.50	ug/L	20		101	70-130	6.70	30	
1,2,4-Trimethylbenzene	**20.2**	0.50	ug/L	20		101	70-130	7.23	30	
Vinyl chloride	**21.4**	0.50	ug/L	20		107	75-125	25.9	30	
o-Xylene	**20.6**	0.50	ug/L	20		103	75-125	6.40	30	
m,p-Xylenes	**42.1**	1.0	ug/L	40		105	70-130	9.50	30	
Surrogate: 4-Bromofluorobenzene	*47.6*		*ug/L*	*50*		*95.2*	*70-140*			
Surrogate: Dibromofluoromethane	*47.6*		*ug/L*	*50*		*95.2*	*70-140*			
Surrogate: Toluene-d8	*51.8*		*ug/L*	*50*		*104*	*70-140*			
Matrix Spike (B8F2214-MS1)		**Source: 8F12016-01**		Prepared: 06/22/18 Analyzed: 06/23/18						
Acetone	**28.1**	10	ug/L	20	25.2	14.5	70-130			QM-07
tert-Amyl Methyl Ether (TAME)	**18.4**	2.0	ug/L	20		92.0	70-130			

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2214 - EPA 5030B										
Matrix Spike (B8F2214-MS1) Continued Source: 8F12016-01 Prepared: 06/22/18 Analyzed: 06/23/18										
Benzene	**23.0**	0.50	ug/L	20		115	70-130			
Bromobenzene	**20.4**	0.50	ug/L	20		102	70-130			
Bromochloromethane	**20.0**	0.50	ug/L	20		100	70-130			
Bromodichloromethane	**19.5**	0.50	ug/L	20		97.6	70-130			
Bromoform	**15.3**	0.50	ug/L	20		76.6	70-130			
Bromomethane	**24.3**	0.50	ug/L	20		121	70-130			
2-Butanone (MEK)	**18.4**	10	ug/L	20		91.9	70-130			
tert-Butyl alcohol (TBA)	**89.5**	10	ug/L	100		89.5	70-130			
sec-Butylbenzene	**20.2**	0.50	ug/L	20		101	70-130			
tert-Butylbenzene	**22.4**	0.50	ug/L	20		112	70-130			
n-Butylbenzene	**20.7**	0.50	ug/L	20		104	70-130			
Carbon Disulfide	**21.9**	0.50	ug/L	20		110	70-130			
Carbon Tetrachloride	**20.8**	0.50	ug/L	20		104	70-130			
Chlorobenzene	**21.9**	0.50	ug/L	20		109	70-130			
Chloroethane	**23.3**	0.50	ug/L	20		117	70-130			
Chloroform	**20.5**	0.50	ug/L	20		102	70-130			
Chloromethane	**21.6**	0.50	ug/L	20		108	70-130			
2-Chlorotoluene	**21.1**	0.50	ug/L	20		105	70-130			
4-Chlorotoluene	**20.8**	0.50	ug/L	20		104	70-130			
1,2-Dibromo-3-chloropropane	**17.1**	1.0	ug/L	20		85.7	70-130			
Dibromochloromethane	**18.4**	0.50	ug/L	20		91.8	70-130			
1,2-Dibromoethane (EDB)	**17.4**	0.50	ug/L	20		87.2	70-130			
Dibromomethane	**19.0**	0.50	ug/L	20		94.9	70-130			
1,3-Dichlorobenzene	**21.6**	0.50	ug/L	20		108	70-130			
1,2-Dichlorobenzene	**22.0**	0.50	ug/L	20		110	70-130			
1,4-Dichlorobenzene	**21.9**	0.50	ug/L	20		109	70-130			
Dichlorodifluoromethane (R12)	**22.0**	0.50	ug/L	20		110	70-130			
1,1-Dichloroethane	**22.7**	0.50	ug/L	20		113	70-130			
1,2-Dichloroethane (EDC)	**19.1**	0.50	ug/L	20		95.4	70-130			
1,1-Dichloroethylene	**24.2**	0.50	ug/L	20		121	70-130			
trans-1,2-Dichloroethylene	**22.4**	0.50	ug/L	20		112	70-130			



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2214 - EPA 5030B										
Matrix Spike (B8F2214-MS1) Continued Source: 8F12016-01 Prepared: 06/22/18 Analyzed: 06/23/18										
cis-1,2-Dichloroethylene	**20.0**	0.50	ug/L	20		99.9	70-130			
1,2-Dichloropropane	**21.2**	0.50	ug/L	20		106	70-130			
2,2-Dichloropropane	**17.2**	0.50	ug/L	20		86.2	70-130			
1,3-Dichloropropane	**20.6**	0.50	ug/L	20		103	70-130			
cis-1,3-Dichloropropylene	**19.8**	0.50	ug/L	20		98.8	70-130			
trans-1,3-Dichloropropylene	**18.5**	0.50	ug/L	20		92.4	70-130			
1,1-Dichloropropylene	**21.1**	0.50	ug/L	20		105	70-130			
Diisopropyl ether (DIPE)	**19.3**	2.0	ug/L	20		96.6	70-130			
Ethylbenzene	**22.7**	0.50	ug/L	20		114	70-130			
Ethyl-tert-Butyl Ether (ETBE)	**19.3**	2.0	ug/L	20		96.5	70-130			
Hexachlorobutadiene	**18.7**	1.0	ug/L	20		93.6	70-130			
2-Hexanone (MBK)	**16.3**	10	ug/L	20		81.4	70-130			
Isopropylbenzene	**21.1**	0.50	ug/L	20		106	70-130			
4-Isopropyltoluene	**21.8**	1.0	ug/L	20		109	70-130			
Methyl-tert-Butyl Ether (MTBE)	**39.5**	2.0	ug/L	40		98.7	70-130			
Methylene Chloride	**27.5**	5.0	ug/L	20		138	70-130			QM-07
4-Methyl-2-pentanone (MIBK)	**13.4**	10	ug/L	20		66.8	70-130			QM-07
Naphthalene	**21.9**	2.0	ug/L	20	0.360	108	70-130			
n-Propylbenzene	**21.4**	0.50	ug/L	20		107	70-130			
Styrene	**20.9**	0.50	ug/L	20		104	70-130			
1,1,1,2-Tetrachloroethane	**22.0**	0.50	ug/L	20		110	70-130			
1,1,2,2-Tetrachloroethane	**21.3**	0.50	ug/L	20		106	70-130			
Tetrachloroethylene (PCE)	**22.0**	0.50	ug/L	20		110	70-130			
Toluene	**22.6**	0.50	ug/L	20		113	70-130			
1,2,3-Trichlorobenzene	**20.3**	0.50	ug/L	20		102	70-130			
1,2,4-Trichlorobenzene	**20.3**	0.50	ug/L	20		102	70-130			
1,1,1-Trichloroethane	**20.8**	0.50	ug/L	20		104	70-130			
1,1,2-Trichloroethane	**21.1**	0.50	ug/L	20		106	70-130			
Trichloroethylene (TCE)	**21.2**	0.50	ug/L	20		106	70-130			
Trichlorofluoromethane (R11)	**22.6**	0.50	ug/L	20		113	70-130			
1,2,3-Trichloropropane	**19.3**	0.50	ug/L	20		96.6	70-130			

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2214 - EPA 5030B										
Matrix Spike (B8F2214-MS1) Continued Source: 8F12016-01 Prepared: 06/22/18 Analyzed: 06/23/18										
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**21.8**	0.50	ug/L	20		109	70-130			
1,3,5-Trimethylbenzene	**20.7**	0.50	ug/L	20		104	70-130			
1,2,4-Trimethylbenzene	**20.7**	0.50	ug/L	20		104	70-130			
Vinyl chloride	**24.6**	0.50	ug/L	20		123	70-130			
o-Xylene	**21.9**	0.50	ug/L	20		110	70-130			
m,p-Xylenes	**44.2**	1.0	ug/L	40		111	70-130			
Surrogate: 4-Bromofluorobenzene	*50.7*		*ug/L*	*50*		*101*	*70-140*			
Surrogate: Dibromofluoromethane	*49.3*		*ug/L*	*50*		*98.6*	*70-140*			
Surrogate: Toluene-d8	*59.2*		*ug/L*	*50*		*118*	*70-140*			
Matrix Spike Dup (B8F2214-MSD1) **Source: 8F12016-01** Prepared: 06/22/18 Analyzed: 06/23/18										
Acetone	**36.6**	10	ug/L	20	25.2	57.2	70-130	26.4	30	QM-07
tert-Amyl Methyl Ether (TAME)	**22.0**	2.0	ug/L	20		110	70-130	18.1	30	
Benzene	**23.6**	0.50	ug/L	20		118	70-130	2.32	30	
Bromobenzene	**20.3**	0.50	ug/L	20		101	70-130	0.738	30	
Bromochloromethane	**22.7**	0.50	ug/L	20		113	70-130	12.3	30	
Bromodichloromethane	**22.2**	0.50	ug/L	20		111	70-130	13.1	30	
Bromoform	**16.2**	0.50	ug/L	20		81.1	70-130	5.77	30	
Bromomethane	**25.4**	0.50	ug/L	20		127	70-130	4.43	30	
2-Butanone (MEK)	**22.2**	10	ug/L	20		111	70-130	18.7	30	
tert-Butyl alcohol (TBA)	**90.6**	10	ug/L	100		90.6	70-130	1.24	30	
sec-Butylbenzene	**19.7**	0.50	ug/L	20		98.6	70-130	2.40	30	
tert-Butylbenzene	**21.9**	0.50	ug/L	20		110	70-130	2.48	30	
n-Butylbenzene	**19.8**	0.50	ug/L	20		98.8	70-130	4.74	30	
Carbon Disulfide	**21.3**	0.50	ug/L	20		106	70-130	3.10	30	
Carbon Tetrachloride	**21.0**	0.50	ug/L	20		105	70-130	1.01	30	
Chlorobenzene	**20.0**	0.50	ug/L	20		99.9	70-130	9.03	30	
Chloroethane	**22.6**	0.50	ug/L	20		113	70-130	3.18	30	
Chloroform	**21.8**	0.50	ug/L	20		109	70-130	6.38	30	
Chloromethane	**21.0**	0.50	ug/L	20		105	70-130	2.91	30	
2-Chlorotoluene	**20.5**	0.50	ug/L	20		103	70-130	2.69	30	



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2214 - EPA 5030B										
Matrix Spike Dup (B8F2214-MSD1) Continued	**Source: 8F12016-01** Prepared: 06/22/18 Analyzed: 06/23/18									
4-Chlorotoluene	**20.1**	0.50	ug/L	20		101	70-130	3.18	30	
1,2-Dibromo-3-chloropropane	**20.2**	1.0	ug/L	20		101	70-130	16.6	30	
Dibromochloromethane	**18.3**	0.50	ug/L	20		91.6	70-130	0.273	30	
1,2-Dibromoethane (EDB)	**18.7**	0.50	ug/L	20		93.5	70-130	6.97	30	
Dibromomethane	**22.8**	0.50	ug/L	20		114	70-130	18.4	30	
1,3-Dichlorobenzene	**20.8**	0.50	ug/L	20		104	70-130	3.63	30	
1,2-Dichlorobenzene	**22.4**	0.50	ug/L	20		112	70-130	1.44	30	
1,4-Dichlorobenzene	**21.9**	0.50	ug/L	20		110	70-130	0.183	30	
Dichlorodifluoromethane (R12)	**22.6**	0.50	ug/L	20		113	70-130	2.69	30	
1,1-Dichloroethane	**23.4**	0.50	ug/L	20		117	70-130	3.38	30	
1,2-Dichloroethane (EDC)	**22.6**	0.50	ug/L	20		113	70-130	16.7	30	
1,1-Dichloroethylene	**22.2**	0.50	ug/L	20		111	70-130	8.49	30	
trans-1,2-Dichloroethylene	**21.8**	0.50	ug/L	20		109	70-130	2.72	30	
cis-1,2-Dichloroethylene	**20.7**	0.50	ug/L	20		103	70-130	3.39	30	
1,2-Dichloropropane	**23.4**	0.50	ug/L	20		117	70-130	9.78	30	
2,2-Dichloropropane	**17.5**	0.50	ug/L	20		87.6	70-130	1.55	30	
1,3-Dichloropropane	**21.7**	0.50	ug/L	20		109	70-130	5.29	30	
cis-1,3-Dichloropropylene	**21.5**	0.50	ug/L	20		108	70-130	8.48	30	
trans-1,3-Dichloropropylene	**18.5**	0.50	ug/L	20		92.4	70-130	0.0541	30	
1,1-Dichloropropylene	**20.9**	0.50	ug/L	20		105	70-130	0.666	30	
Diisopropyl ether (DIPE)	**21.7**	2.0	ug/L	20		109	70-130	11.7	30	
Ethylbenzene	**19.9**	0.50	ug/L	20		99.7	70-130	13.0	30	
Ethyl-tert-Butyl Ether (ETBE)	**23.5**	2.0	ug/L	20		118	70-130	19.8	30	
Hexachlorobutadiene	**18.4**	1.0	ug/L	20		92.2	70-130	1.51	30	
2-Hexanone (MBK)	**17.0**	10	ug/L	20		85.0	70-130	4.27	30	
Isopropylbenzene	**20.5**	0.50	ug/L	20		103	70-130	2.93	30	
4-Isopropyltoluene	**21.0**	1.0	ug/L	20		105	70-130	3.37	30	
Methyl-tert-Butyl Ether (MTBE)	**48.6**	2.0	ug/L	40		121	70-130	20.7	30	
Methylene Chloride	**32.2**	5.0	ug/L	20		161	70-130	15.6	30	QM-07
4-Methyl-2-pentanone (MIBK)	**19.1**	10	ug/L	20		95.6	70-130	35.5	30	AA-C1
Naphthalene	**25.0**	2.0	ug/L	20	0.360	123	70-130	13.1	30	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2214 - EPA 5030B										
Matrix Spike Dup (B8F2214-MSD1) Continued				**Source: 8F12016-01**		Prepared: 06/22/18	Analyzed: 06/23/18			
n-Propylbenzene	**20.4**	0.50	ug/L	20		102	70-130	5.12	30	
Styrene	**18.8**	0.50	ug/L	20		93.8	70-130	10.8	30	
1,1,1,2-Tetrachloroethane	**20.4**	0.50	ug/L	20		102	70-130	7.63	30	
1,1,2,2-Tetrachloroethane	**24.7**	0.50	ug/L	20		124	70-130	14.9	30	
Tetrachloroethylene (PCE)	**18.2**	0.50	ug/L	20		91.0	70-130	19.1	30	
Toluene	**19.7**	0.50	ug/L	20		98.7	70-130	13.6	30	
1,2,3-Trichlorobenzene	**20.0**	0.50	ug/L	20		100	70-130	1.44	30	
1,2,4-Trichlorobenzene	**19.2**	0.50	ug/L	20		96.0	70-130	5.71	30	
1,1,1-Trichloroethane	**20.7**	0.50	ug/L	20		104	70-130	0.289	30	
1,1,2-Trichloroethane	**21.6**	0.50	ug/L	20		108	70-130	2.20	30	
Trichloroethylene (TCE)	**21.3**	0.50	ug/L	20		107	70-130	0.282	30	
Trichlorofluoromethane (R11)	**23.4**	0.50	ug/L	20		117	70-130	3.47	30	
1,2,3-Trichloropropane	**22.3**	0.50	ug/L	20		112	70-130	14.5	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**21.4**	0.50	ug/L	20		107	70-130	1.90	30	
1,3,5-Trimethylbenzene	**20.2**	0.50	ug/L	20		101	70-130	2.79	30	
1,2,4-Trimethylbenzene	**20.2**	0.50	ug/L	20		101	70-130	2.34	30	
Vinyl chloride	**24.1**	0.50	ug/L	20		120	70-130	2.06	30	
o-Xylene	**19.8**	0.50	ug/L	20		99.1	70-130	9.97	30	
m,p-Xylenes	**38.8**	1.0	ug/L	40		97.0	70-130	13.1	30	
Surrogate: 4-Bromofluorobenzene	*51.6*		*ug/L*	*50*		*103*	*70-140*			
Surrogate: Dibromofluoromethane	*54.0*		*ug/L*	*50*		*108*	*70-140*			
Surrogate: Toluene-d8	*53.6*		*ug/L*	*50*		*107*	*70-140*			
VOCs & OXYGENATES by GC/MS EPA 5035 - Quality Control										
Batch B8F2222 - EPA 5035										
Blank (B8F2222-BLK1)						Prepared & Analyzed: 06/22/18				
Acetone	<50	50	ug/kg							
tert-Amyl Methyl Ether (TAME)	<5.0	5.0	ug/kg							
Benzene	<2.0	2.0	ug/kg							
Bromobenzene	<5.0	5.0	ug/kg							

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS EPA 5035 - Quality Control										
Batch B8F2222 - EPA 5035										
Blank (B8F2222-BLK1) Continued				Prepared & Analyzed: 06/22/18						
Bromochloromethane	<5.0	5.0	ug/kg							
Bromodichloromethane	<5.0	5.0	ug/kg							
Bromoform	<5.0	5.0	ug/kg							
Bromomethane	<5.0	5.0	ug/kg							
2-Butanone (MEK)	<50	50	ug/kg							
tert-Butyl alcohol (TBA)	<20	20	ug/kg							
sec-Butylbenzene	<5.0	5.0	ug/kg							
tert-Butylbenzene	<5.0	5.0	ug/kg							
n-Butylbenzene	<5.0	5.0	ug/kg							
Carbon Disulfide	<5.0	5.0	ug/kg							
Carbon Tetrachloride	<5.0	5.0	ug/kg							
Chlorobenzene	<5.0	5.0	ug/kg							
Chloroethane	<5.0	5.0	ug/kg							
Chloroform	<5.0	5.0	ug/kg							
Chloromethane	<5.0	5.0	ug/kg							
2-Chlorotoluene	<5.0	5.0	ug/kg							
4-Chlorotoluene	<5.0	5.0	ug/kg							
1,2-Dibromo-3-chloropropane	<10	10	ug/kg							
Dibromochloromethane	<5.0	5.0	ug/kg							
1,2-Dibromoethane (EDB)	<5.0	5.0	ug/kg							
Dibromomethane	<5.0	5.0	ug/kg							
1,4-Dichlorobenzene	<5.0	5.0	ug/kg							
1,3-Dichlorobenzene	<5.0	5.0	ug/kg							
1,2-Dichlorobenzene	<5.0	5.0	ug/kg							
Dichlorodifluoromethane (R12)	<5.0	5.0	ug/kg							
1,1-Dichloroethane	<5.0	5.0	ug/kg							
1,2-Dichloroethane (EDC)	<5.0	5.0	ug/kg							
trans-1,2-Dichloroethylene	<5.0	5.0	ug/kg							
cis-1,2-Dichloroethylene	<5.0	5.0	ug/kg							
1,1-Dichloroethylene	<5.0	5.0	ug/kg							
2,2-Dichloropropane	<5.0	5.0	ug/kg							

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
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Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS EPA 5035 - Quality Control										
Batch B8F2222 - EPA 5035										
Blank (B8F2222-BLK1) Continued				Prepared & Analyzed: 06/22/18						
1,3-Dichloropropane	<5.0	5.0	ug/kg							
1,2-Dichloropropane	<5.0	5.0	ug/kg							
trans-1,3-Dichloropropylene	<5.0	5.0	ug/kg							
1,1-Dichloropropylene	<5.0	5.0	ug/kg							
cis-1,3-Dichloropropylene	<5.0	5.0	ug/kg							
Diisopropyl ether (DIPE)	<5.0	5.0	ug/kg							
Ethylbenzene	<2.0	2.0	ug/kg							
Ethyl-tert-Butyl Ether (ETBE)	<5.0	5.0	ug/kg							
Hexachlorobutadiene	<10	10	ug/kg							
2-Hexanone (MBK)	<50	50	ug/kg							
Isopropylbenzene	<5.0	5.0	ug/kg							
4-Isopropyltoluene	<5.0	5.0	ug/kg							
Methyl-tert-Butyl Ether (MTBE)	<5.0	5.0	ug/kg							
Methylene Chloride	<50	50	ug/kg							
4-Methyl-2-pentanone (MIBK)	<50	50	ug/kg							
Naphthalene	<10	10	ug/kg							
n-Propylbenzene	<5.0	5.0	ug/kg							
Styrene	<5.0	5.0	ug/kg							
1,1,1,2-Tetrachloroethane	<5.0	5.0	ug/kg							
1,1,2,2-Tetrachloroethane	<5.0	5.0	ug/kg							
Tetrachloroethylene (PCE)	<5.0	5.0	ug/kg							
Toluene	<2.0	2.0	ug/kg							
1,2,4-Trichlorobenzene	<5.0	5.0	ug/kg							
1,2,3-Trichlorobenzene	<5.0	5.0	ug/kg							
1,1,2-Trichloroethane	<5.0	5.0	ug/kg							
1,1,1-Trichloroethane	<5.0	5.0	ug/kg							
Trichloroethylene (TCE)	<5.0	5.0	ug/kg							
Trichlorofluoromethane (R11)	<5.0	5.0	ug/kg							
1,2,3-Trichloropropane	<5.0	5.0	ug/kg							
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<5.0	5.0	ug/kg							
1,3,5-Trimethylbenzene	<5.0	5.0	ug/kg							

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS EPA 5035 - Quality Control										
Batch B8F2222 - EPA 5035										
Blank (B8F2222-BLK1) Continued				Prepared & Analyzed: 06/22/18						
1,2,4-Trimethylbenzene	<5.0	5.0	ug/kg							
Vinyl chloride	<5.0	5.0	ug/kg							
o-Xylene	<2.0	2.0	ug/kg							
m,p-Xylenes	<2.0	2.0	ug/kg							
Surrogate: 4-Bromofluorobenzene	*94.8*		*ug/kg*	*100*		*94.8*	*70-140*			
Surrogate: Dibromofluoromethane	*118*		*ug/kg*	*100*		*118*	*70-140*			
Surrogate: Toluene-d8	*95.4*		*ug/kg*	*100*		*95.4*	*70-140*			
LCS (B8F2222-BS1)				Prepared & Analyzed: 06/22/18						
Acetone	**35.6**	50	ug/kg	40		89.1	70-130			
tert-Amyl Methyl Ether (TAME)	**36.8**	5.0	ug/kg	40		92.0	70-130			
Benzene	**38.0**	2.0	ug/kg	40		95.0	75-125			
Bromobenzene	**42.1**	5.0	ug/kg	40		105	70-130			
Bromochloromethane	**42.8**	5.0	ug/kg	40		107	70-130			
Bromodichloromethane	**40.3**	5.0	ug/kg	40		101	75-125			
Bromoform	**39.5**	5.0	ug/kg	40		98.8	75-125			
Bromomethane	**52.5**	5.0	ug/kg	40		131	75-125			**
2-Butanone (MEK)	**25.2**	50	ug/kg	40		62.9	70-130			***
tert-Butyl alcohol (TBA)	**166**	20	ug/kg	200		83.1	70-130			
sec-Butylbenzene	**41.5**	5.0	ug/kg	40		104	70-130			
tert-Butylbenzene	**41.6**	5.0	ug/kg	40		104	70-130			
n-Butylbenzene	**40.6**	5.0	ug/kg	40		102	70-130			
Carbon Disulfide	**39.9**	5.0	ug/kg	40		99.8	70-130			
Carbon Tetrachloride	**42.2**	5.0	ug/kg	40		106	75-125			
Chlorobenzene	**42.3**	5.0	ug/kg	40		106	75-125			
Chloroethane	**47.1**	5.0	ug/kg	40		118	75-125			
Chloroform	**42.6**	5.0	ug/kg	40		106	75-125			
Chloromethane	**40.2**	5.0	ug/kg	40		100	65-125			
2-Chlorotoluene	**40.9**	5.0	ug/kg	40		102	70-130			
4-Chlorotoluene	**41.7**	5.0	ug/kg	40		104	70-130			
1,2-Dibromo-3-chloropropane	**36.8**	10	ug/kg	40		91.9	70-130			
Dibromochloromethane	**40.9**	5.0	ug/kg	40		102	75-125			

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS EPA 5035 - Quality Control										
Batch B8F2222 - EPA 5035										
LCS (B8F2222-BS1) Continued				Prepared & Analyzed: 06/22/18						
1,2-Dibromoethane (EDB)	**38.4**	5.0	ug/kg	40		96.1	70-130			
Dibromomethane	**38.5**	5.0	ug/kg	40		96.3	70-130			
1,4-Dichlorobenzene	**40.7**	5.0	ug/kg	40		102	75-125			
1,3-Dichlorobenzene	**41.4**	5.0	ug/kg	40		103	70-130			
1,2-Dichlorobenzene	**42.6**	5.0	ug/kg	40		107	70-130			
Dichlorodifluoromethane (R12)	**32.4**	5.0	ug/kg	40		81.0	70-130			
1,1-Dichloroethane	**40.4**	5.0	ug/kg	40		101	70-125			
1,2-Dichloroethane (EDC)	**42.9**	5.0	ug/kg	40		107	75-125			
trans-1,2-Dichloroethylene	**42.6**	5.0	ug/kg	40		106	75-125			
cis-1,2-Dichloroethylene	**41.4**	5.0	ug/kg	40		104	75-125			
1,1-Dichloroethylene	**44.0**	5.0	ug/kg	40		110	70-130			
2,2-Dichloropropane	**40.3**	5.0	ug/kg	40		101	70-130			
1,3-Dichloropropane	**37.0**	5.0	ug/kg	40		92.4	70-130			
1,2-Dichloropropane	**39.1**	5.0	ug/kg	40		97.8	75-130			
trans-1,3-Dichloropropylene	**40.7**	5.0	ug/kg	40		102	70-130			
1,1-Dichloropropylene	**40.8**	5.0	ug/kg	40		102	70-130			
cis-1,3-Dichloropropylene	**40.4**	5.0	ug/kg	40		101	75-125			
Diisopropyl ether (DIPE)	**38.6**	5.0	ug/kg	40		96.4	70-130			
Ethylbenzene	**41.7**	2.0	ug/kg	40		104	75-125			
Ethyl-tert-Butyl Ether (ETBE)	**39.6**	5.0	ug/kg	40		99.0	70-130			
Hexachlorobutadiene	**40.9**	10	ug/kg	40		102	70-130			
2-Hexanone (MBK)	**32.6**	50	ug/kg	40		81.4	70-130			
Isopropylbenzene	**41.9**	5.0	ug/kg	40		105	70-130			
4-Isopropyltoluene	**42.3**	5.0	ug/kg	40		106	70-130			
Methyl-tert-Butyl Ether (MTBE)	**78.2**	5.0	ug/kg	80		97.8	75-125			
Methylene Chloride	**36.8**	50	ug/kg	40		92.0	75-130			
4-Methyl-2-pentanone (MIBK)	**38.0**	50	ug/kg	40		95.0	70-130			
Naphthalene	**40.8**	10	ug/kg	40		102	70-130			
n-Propylbenzene	**41.7**	5.0	ug/kg	40		104	70-130			
Styrene	**40.3**	5.0	ug/kg	40		101	70-130			
1,1,1,2-Tetrachloroethane	**42.0**	5.0	ug/kg	40		105	70-130			

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

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Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS EPA 5035 - Quality Control										
Batch B8F2222 - EPA 5035										
LCS (B8F2222-BS1) Continued				Prepared & Analyzed: 06/22/18						
1,1,2,2-Tetrachloroethane	**37.0**	5.0	ug/kg	40		92.5	70-135			
Tetrachloroethylene (PCE)	**41.0**	5.0	ug/kg	40		102	75-125			
Toluene	**41.7**	2.0	ug/kg	40		104	75-125			
1,2,4-Trichlorobenzene	**42.5**	5.0	ug/kg	40		106	70-130			
1,2,3-Trichlorobenzene	**42.0**	5.0	ug/kg	40		105	70-130			
1,1,2-Trichloroethane	**38.3**	5.0	ug/kg	40		95.8	75-125			
1,1,1-Trichloroethane	**42.7**	5.0	ug/kg	40		107	75-125			
Trichloroethylene (TCE)	**39.6**	5.0	ug/kg	40		99.1	75-125			
Trichlorofluoromethane (R11)	**42.4**	5.0	ug/kg	40		106	70-130			
1,2,3-Trichloropropane	**34.9**	5.0	ug/kg	40		87.2	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**40.7**	5.0	ug/kg	40		102	70-130			
1,3,5-Trimethylbenzene	**41.4**	5.0	ug/kg	40		103	70-130			
1,2,4-Trimethylbenzene	**40.8**	5.0	ug/kg	40		102	70-130			
Vinyl chloride	**42.1**	5.0	ug/kg	40		105	75-125			
o-Xylene	**40.6**	2.0	ug/kg	40		102	75-125			
m,p-Xylenes	**79.9**	2.0	ug/kg	80		99.8	70-130			
Surrogate: 4-Bromofluorobenzene	*96.6*		*ug/kg*	*100*		*96.6*	*70-140*			
Surrogate: Dibromofluoromethane	*95.8*		*ug/kg*	*100*		*95.8*	*70-140*			
Surrogate: Toluene-d8	*96.4*		*ug/kg*	*100*		*96.4*	*70-140*			
LCS Dup (B8F2222-BSD1)				Prepared & Analyzed: 06/22/18						
Acetone	**38.2**	50	ug/kg	40		95.6	70-130	7.04	30	
tert-Amyl Methyl Ether (TAME)	**36.4**	5.0	ug/kg	40		91.0	70-130	1.20	30	
Benzene	**36.9**	2.0	ug/kg	40		92.2	75-125	2.99	30	
Bromobenzene	**42.2**	5.0	ug/kg	40		106	70-130	0.332	30	
Bromochloromethane	**43.3**	5.0	ug/kg	40		108	70-130	1.11	30	
Bromodichloromethane	**40.1**	5.0	ug/kg	40		100	75-125	0.448	30	
Bromoform	**40.8**	5.0	ug/kg	40		102	75-125	3.09	30	
Bromomethane	**49.3**	5.0	ug/kg	40		123	75-125	6.25	30	
2-Butanone (MEK)	**26.2**	50	ug/kg	40		65.6	70-130	4.13	30	***
tert-Butyl alcohol (TBA)	**172**	20	ug/kg	200		86.1	70-130	3.52	30	



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS EPA 5035 - Quality Control										
Batch B8F2222 - EPA 5035										
LCS Dup (B8F2222-BSD1) Continued				Prepared & Analyzed: 06/22/18						
sec-Butylbenzene	**40.8**	5.0	ug/kg	40		102	70-130	1.75	30	
tert-Butylbenzene	**40.9**	5.0	ug/kg	40		102	70-130	1.79	30	
n-Butylbenzene	**39.3**	5.0	ug/kg	40		98.2	70-130	3.25	30	
Carbon Disulfide	**38.2**	5.0	ug/kg	40		95.4	70-130	4.46	30	
Carbon Tetrachloride	**41.1**	5.0	ug/kg	40		103	75-125	2.74	30	
Chlorobenzene	**41.1**	5.0	ug/kg	40		103	75-125	2.92	30	
Chloroethane	**47.2**	5.0	ug/kg	40		118	75-125	0.297	30	
Chloroform	**42.0**	5.0	ug/kg	40		105	75-125	1.32	30	
Chloromethane	**40.5**	5.0	ug/kg	40		101	65-125	0.744	30	
2-Chlorotoluene	**39.6**	5.0	ug/kg	40		99.0	70-130	3.13	30	
4-Chlorotoluene	**40.1**	5.0	ug/kg	40		100	70-130	3.96	30	
1,2-Dibromo-3-chloropropane	**39.9**	10	ug/kg	40		99.8	70-130	8.24	30	
Dibromochloromethane	**40.5**	5.0	ug/kg	40		101	75-125	0.884	30	
1,2-Dibromoethane (EDB)	**38.9**	5.0	ug/kg	40		97.2	70-130	1.09	30	
Dibromomethane	**39.8**	5.0	ug/kg	40		99.4	70-130	3.22	30	
1,4-Dichlorobenzene	**40.2**	5.0	ug/kg	40		100	75-125	1.38	30	
1,3-Dichlorobenzene	**40.4**	5.0	ug/kg	40		101	70-130	2.30	30	
1,2-Dichlorobenzene	**42.6**	5.0	ug/kg	40		107	70-130	0.0469	30	
Dichlorodifluoromethane (R12)	**30.9**	5.0	ug/kg	40		77.4	70-130	4.67	30	
1,1-Dichloroethane	**39.6**	5.0	ug/kg	40		99.0	70-125	2.15	30	
1,2-Dichloroethane (EDC)	**42.0**	5.0	ug/kg	40		105	75-125	2.17	30	
trans-1,2-Dichloroethylene	**41.2**	5.0	ug/kg	40		103	75-125	3.24	30	
cis-1,2-Dichloroethylene	**41.5**	5.0	ug/kg	40		104	75-125	0.241	30	
1,1-Dichloroethylene	**43.4**	5.0	ug/kg	40		109	70-130	1.33	30	
2,2-Dichloropropane	**36.3**	5.0	ug/kg	40		90.8	70-130	10.4	30	
1,3-Dichloropropane	**37.5**	5.0	ug/kg	40		93.8	70-130	1.56	30	
1,2-Dichloropropane	**38.2**	5.0	ug/kg	40		95.4	75-130	2.38	30	
trans-1,3-Dichloropropylene	**39.4**	5.0	ug/kg	40		98.4	70-130	3.30	30	
1,1-Dichloropropylene	**38.2**	5.0	ug/kg	40		95.6	70-130	6.48	30	
cis-1,3-Dichloropropylene	**38.5**	5.0	ug/kg	40		96.2	75-125	4.92	30	
Diisopropyl ether (DIPE)	**37.5**	5.0	ug/kg	40		93.8	70-130	2.79	30	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS EPA 5035 - Quality Control										
Batch B8F2222 - EPA 5035										
LCS Dup (B8F2222-BSD1) Continued				Prepared & Analyzed: 06/22/18						
Ethylbenzene	**41.1**	2.0	ug/kg	40		103	75-125	1.45	30	
Ethyl-tert-Butyl Ether (ETBE)	**38.7**	5.0	ug/kg	40		96.7	70-130	2.30	30	
Hexachlorobutadiene	**42.2**	10	ug/kg	40		106	70-130	3.23	30	
2-Hexanone (MBK)	**34.3**	50	ug/kg	40		85.8	70-130	5.32	30	
Isopropylbenzene	**40.6**	5.0	ug/kg	40		102	70-130	3.01	30	
4-Isopropyltoluene	**41.9**	5.0	ug/kg	40		105	70-130	0.903	30	
Methyl-tert-Butyl Ether (MTBE)	**78.0**	5.0	ug/kg	80		97.4	75-125	0.307	30	
Methylene Chloride	**40.9**	50	ug/kg	40		102	75-130	10.5	30	
4-Methyl-2-pentanone (MIBK)	**41.3**	50	ug/kg	40		103	70-130	8.32	30	
Naphthalene	**41.3**	10	ug/kg	40		103	70-130	1.22	30	
n-Propylbenzene	**40.8**	5.0	ug/kg	40		102	70-130	1.99	30	
Styrene	**39.4**	5.0	ug/kg	40		98.4	70-130	2.26	30	
1,1,1,2-Tetrachloroethane	**41.7**	5.0	ug/kg	40		104	70-130	0.812	30	
1,1,2,2-Tetrachloroethane	**39.0**	5.0	ug/kg	40		97.6	70-135	5.31	30	
Tetrachloroethylene (PCE)	**39.5**	5.0	ug/kg	40		98.8	75-125	3.58	30	
Toluene	**40.4**	2.0	ug/kg	40		101	75-125	3.02	30	
1,2,4-Trichlorobenzene	**42.7**	5.0	ug/kg	40		107	70-130	0.282	30	
1,2,3-Trichlorobenzene	**43.5**	5.0	ug/kg	40		109	70-130	3.60	30	
1,1,2-Trichloroethane	**38.4**	5.0	ug/kg	40		96.0	75-125	0.104	30	
1,1,1-Trichloroethane	**41.1**	5.0	ug/kg	40		103	75-125	3.68	30	
Trichloroethylene (TCE)	**39.3**	5.0	ug/kg	40		98.2	75-125	0.963	30	
Trichlorofluoromethane (R11)	**42.2**	5.0	ug/kg	40		106	70-130	0.284	30	
1,2,3-Trichloropropane	**37.0**	5.0	ug/kg	40		92.4	70-130	5.73	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**42.4**	5.0	ug/kg	40		106	70-130	4.19	30	
1,3,5-Trimethylbenzene	**39.9**	5.0	ug/kg	40		99.8	70-130	3.64	30	
1,2,4-Trimethylbenzene	**40.0**	5.0	ug/kg	40		100	70-130	1.98	30	
Vinyl chloride	**42.3**	5.0	ug/kg	40		106	75-125	0.474	30	
o-Xylene	**40.1**	2.0	ug/kg	40		100	75-125	1.34	30	
m,p-Xylenes	**77.9**	2.0	ug/kg	80		97.4	70-130	2.46	30	
Surrogate: 4-Bromofluorobenzene	*96.1*		*ug/kg*	*100*		*96.1*	*70-140*			

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS EPA 5035 - Quality Control										
Batch B8F2222 - EPA 5035										
LCS Dup (B8F2222-BSD1) Continued				Prepared & Analyzed: 06/22/18						
Surrogate: Dibromofluoromethane	*97.5*		*ug/kg*	*100*		*97.5*	*70-140*			
Surrogate: Toluene-d8	*95.0*		*ug/kg*	*100*		*95.0*	*70-140*			
Batch B8F2536 - EPA 5035										
Blank (B8F2536-BLK1)				Prepared & Analyzed: 06/25/18						
Acetone	<50	50	ug/kg							
tert-Amyl Methyl Ether (TAME)	<5.0	5.0	ug/kg							
Benzene	<2.0	2.0	ug/kg							
Bromobenzene	<5.0	5.0	ug/kg							
Bromochloromethane	<5.0	5.0	ug/kg							
Bromodichloromethane	<5.0	5.0	ug/kg							
Bromoform	<5.0	5.0	ug/kg							
Bromomethane	<5.0	5.0	ug/kg							
2-Butanone (MEK)	<50	50	ug/kg							
tert-Butyl alcohol (TBA)	<20	20	ug/kg							
sec-Butylbenzene	<5.0	5.0	ug/kg							
tert-Butylbenzene	<5.0	5.0	ug/kg							
n-Butylbenzene	<5.0	5.0	ug/kg							
Carbon Disulfide	<5.0	5.0	ug/kg							
Carbon Tetrachloride	<5.0	5.0	ug/kg							
Chlorobenzene	<5.0	5.0	ug/kg							
Chloroethane	<5.0	5.0	ug/kg							
Chloroform	<5.0	5.0	ug/kg							
Chloromethane	<5.0	5.0	ug/kg							
2-Chlorotoluene	<5.0	5.0	ug/kg							
4-Chlorotoluene	<5.0	5.0	ug/kg							
1,2-Dibromo-3-chloropropane	<10	10	ug/kg							
Dibromochloromethane	<5.0	5.0	ug/kg							
1,2-Dibromoethane (EDB)	<5.0	5.0	ug/kg							
Dibromomethane	<5.0	5.0	ug/kg							
1,4-Dichlorobenzene	<5.0	5.0	ug/kg							
1,3-Dichlorobenzene	<5.0	5.0	ug/kg							

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS EPA 5035 - Quality Control										
Batch B8F2536 - EPA 5035										
Blank (B8F2536-BLK1) Continued				Prepared & Analyzed: 06/25/18						
1,2-Dichlorobenzene	<5.0	5.0	ug/kg							
Dichlorodifluoromethane (R12)	<5.0	5.0	ug/kg							
1,1-Dichloroethane	<5.0	5.0	ug/kg							
1,2-Dichloroethane (EDC)	<5.0	5.0	ug/kg							
trans-1,2-Dichloroethylene	<5.0	5.0	ug/kg							
cis-1,2-Dichloroethylene	<5.0	5.0	ug/kg							
1,1-Dichloroethylene	<5.0	5.0	ug/kg							
2,2-Dichloropropane	<5.0	5.0	ug/kg							
1,3-Dichloropropane	<5.0	5.0	ug/kg							
1,2-Dichloropropane	<5.0	5.0	ug/kg							
trans-1,3-Dichloropropylene	<5.0	5.0	ug/kg							
1,1-Dichloropropylene	<5.0	5.0	ug/kg							
cis-1,3-Dichloropropylene	<5.0	5.0	ug/kg							
Diisopropyl ether (DIPE)	<5.0	5.0	ug/kg							
Ethylbenzene	<2.0	2.0	ug/kg							
Ethyl-tert-Butyl Ether (ETBE)	<5.0	5.0	ug/kg							
Hexachlorobutadiene	<10	10	ug/kg							
2-Hexanone (MBK)	<50	50	ug/kg							
Isopropylbenzene	<5.0	5.0	ug/kg							
4-Isopropyltoluene	<5.0	5.0	ug/kg							
Methyl-tert-Butyl Ether (MTBE)	<5.0	5.0	ug/kg							
Methylene Chloride	<50	50	ug/kg							
4-Methyl-2-pentanone (MIBK)	<50	50	ug/kg							
Naphthalene	<10	10	ug/kg							
n-Propylbenzene	<5.0	5.0	ug/kg							
Styrene	<5.0	5.0	ug/kg							
1,1,1,2-Tetrachloroethane	<5.0	5.0	ug/kg							
1,1,2,2-Tetrachloroethane	<5.0	5.0	ug/kg							
Tetrachloroethylene (PCE)	<5.0	5.0	ug/kg							
Toluene	<2.0	2.0	ug/kg							
1,2,4-Trichlorobenzene	<5.0	5.0	ug/kg							

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS EPA 5035 - Quality Control										
Batch B8F2536 - EPA 5035										
Blank (B8F2536-BLK1) Continued				Prepared & Analyzed: 06/25/18						
1,2,3-Trichlorobenzene	<5.0	5.0	ug/kg							
1,1,2-Trichloroethane	<5.0	5.0	ug/kg							
1,1,1-Trichloroethane	<5.0	5.0	ug/kg							
Trichloroethylene (TCE)	<5.0	5.0	ug/kg							
Trichlorofluoromethane (R11)	<5.0	5.0	ug/kg							
1,2,3-Trichloropropane	<5.0	5.0	ug/kg							
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<5.0	5.0	ug/kg							
1,3,5-Trimethylbenzene	<5.0	5.0	ug/kg							
1,2,4-Trimethylbenzene	<5.0	5.0	ug/kg							
Vinyl chloride	<5.0	5.0	ug/kg							
o-Xylene	<2.0	2.0	ug/kg							
m,p-Xylenes	<2.0	2.0	ug/kg							
Surrogate: 4-Bromofluorobenzene	*92.0*		*ug/kg*	*100*		*92.0*	*70-140*			
Surrogate: Dibromofluoromethane	*118*		*ug/kg*	*100*		*118*	*70-140*			
Surrogate: Toluene-d8	*93.5*		*ug/kg*	*100*		*93.5*	*70-140*			
LCS (B8F2536-BS1)				Prepared & Analyzed: 06/25/18						
Acetone	**30.6**	50	ug/kg	40		76.4	70-130			
tert-Amyl Methyl Ether (TAME)	**35.2**	5.0	ug/kg	40		88.0	70-130			
Benzene	**36.9**	2.0	ug/kg	40		92.3	75-125			
Bromobenzene	**41.1**	5.0	ug/kg	40		103	70-130			
Bromochloromethane	**43.1**	5.0	ug/kg	40		108	70-130			
Bromodichloromethane	**40.6**	5.0	ug/kg	40		101	75-125			
Bromoform	**39.4**	5.0	ug/kg	40		98.4	75-125			
Bromomethane	**47.9**	5.0	ug/kg	40		120	75-125			
2-Butanone (MEK)	**24.2**	50	ug/kg	40		60.6	70-130			***
tert-Butyl alcohol (TBA)	**183**	20	ug/kg	200		91.3	70-130			
sec-Butylbenzene	**38.2**	5.0	ug/kg	40		95.4	70-130			
tert-Butylbenzene	**38.2**	5.0	ug/kg	40		95.5	70-130			
n-Butylbenzene	**36.3**	5.0	ug/kg	40		90.8	70-130			
Carbon Disulfide	**37.5**	5.0	ug/kg	40		93.6	70-130			

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS EPA 5035 - Quality Control										
Batch B8F2536 - EPA 5035										
LCS (B8F2536-BS1) Continued				Prepared & Analyzed: 06/25/18						
Carbon Tetrachloride	**41.1**	5.0	ug/kg	40		103	75-125			
Chlorobenzene	**41.2**	5.0	ug/kg	40		103	75-125			
Chloroethane	**40.4**	5.0	ug/kg	40		101	75-125			
Chloroform	**41.3**	5.0	ug/kg	40		103	75-125			
Chloromethane	**37.8**	5.0	ug/kg	40		94.6	65-125			
2-Chlorotoluene	**38.2**	5.0	ug/kg	40		95.5	70-130			
4-Chlorotoluene	**39.3**	5.0	ug/kg	40		98.2	70-130			
1,2-Dibromo-3-chloropropane	**36.7**	10	ug/kg	40		91.7	70-130			
Dibromochloromethane	**40.2**	5.0	ug/kg	40		100	75-125			
1,2-Dibromoethane (EDB)	**38.1**	5.0	ug/kg	40		95.2	70-130			
Dibromomethane	**39.3**	5.0	ug/kg	40		98.2	70-130			
1,4-Dichlorobenzene	**39.1**	5.0	ug/kg	40		97.7	75-125			
1,3-Dichlorobenzene	**39.2**	5.0	ug/kg	40		98.0	70-130			
1,2-Dichlorobenzene	**41.2**	5.0	ug/kg	40		103	70-130			
Dichlorodifluoromethane (R12)	**25.1**	5.0	ug/kg	40		62.8	70-130			***
1,1-Dichloroethane	**39.9**	5.0	ug/kg	40		99.7	70-125			
1,2-Dichloroethane (EDC)	**41.7**	5.0	ug/kg	40		104	75-125			
trans-1,2-Dichloroethylene	**40.2**	5.0	ug/kg	40		100	75-125			
cis-1,2-Dichloroethylene	**40.1**	5.0	ug/kg	40		100	75-125			
1,1-Dichloroethylene	**43.7**	5.0	ug/kg	40		109	70-130			
2,2-Dichloropropane	**39.5**	5.0	ug/kg	40		98.8	70-130			
1,3-Dichloropropane	**37.7**	5.0	ug/kg	40		94.4	70-130			
1,2-Dichloropropane	**39.2**	5.0	ug/kg	40		97.9	75-130			
trans-1,3-Dichloropropylene	**40.0**	5.0	ug/kg	40		100	70-130			
1,1-Dichloropropylene	**38.5**	5.0	ug/kg	40		96.3	70-130			
cis-1,3-Dichloropropylene	**39.7**	5.0	ug/kg	40		99.3	75-125			
Diisopropyl ether (DIPE)	**37.4**	5.0	ug/kg	40		93.4	70-130			
Ethylbenzene	**39.7**	2.0	ug/kg	40		99.2	75-125			
Ethyl-tert-Butyl Ether (ETBE)	**39.1**	5.0	ug/kg	40		97.6	70-130			
Hexachlorobutadiene	**35.9**	10	ug/kg	40		89.8	70-130			
2-Hexanone (MBK)	**35.6**	50	ug/kg	40		89.0	70-130			



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS EPA 5035 - Quality Control										
Batch B8F2536 - EPA 5035										
LCS (B8F2536-BS1) Continued				Prepared & Analyzed: 06/25/18						
Isopropylbenzene	**38.7**	5.0	ug/kg	40		96.8	70-130			
4-Isopropyltoluene	**38.9**	5.0	ug/kg	40		97.4	70-130			
Methyl-tert-Butyl Ether (MTBE)	**75.8**	5.0	ug/kg	80		94.8	75-125			
Methylene Chloride	**36.2**	50	ug/kg	40		90.4	75-130			
4-Methyl-2-pentanone (MIBK)	**39.9**	50	ug/kg	40		99.6	70-130			
Naphthalene	**34.8**	10	ug/kg	40		86.9	70-130			
n-Propylbenzene	**38.4**	5.0	ug/kg	40		96.0	70-130			
Styrene	**39.3**	5.0	ug/kg	40		98.2	70-130			
1,1,1,2-Tetrachloroethane	**41.8**	5.0	ug/kg	40		104	70-130			
1,1,2,2-Tetrachloroethane	**36.7**	5.0	ug/kg	40		91.8	70-135			
Tetrachloroethylene (PCE)	**40.3**	5.0	ug/kg	40		101	75-125			
Toluene	**39.8**	2.0	ug/kg	40		99.4	75-125			
1,2,4-Trichlorobenzene	**39.6**	5.0	ug/kg	40		99.1	70-130			
1,2,3-Trichlorobenzene	**38.9**	5.0	ug/kg	40		97.3	70-130			
1,1,2-Trichloroethane	**38.0**	5.0	ug/kg	40		95.0	75-125			
1,1,1-Trichloroethane	**41.0**	5.0	ug/kg	40		102	75-125			
Trichloroethylene (TCE)	**38.1**	5.0	ug/kg	40		95.4	75-125			
Trichlorofluoromethane (R11)	**42.1**	5.0	ug/kg	40		105	70-130			
1,2,3-Trichloropropane	**34.8**	5.0	ug/kg	40		86.9	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**39.8**	5.0	ug/kg	40		99.5	70-130			
1,3,5-Trimethylbenzene	**38.1**	5.0	ug/kg	40		95.2	70-130			
1,2,4-Trimethylbenzene	**38.4**	5.0	ug/kg	40		96.0	70-130			
Vinyl chloride	**40.5**	5.0	ug/kg	40		101	75-125			
o-Xylene	**38.6**	2.0	ug/kg	40		96.6	75-125			
m,p-Xylenes	**76.0**	2.0	ug/kg	80		95.0	70-130			
Surrogate: 4-Bromofluorobenzene	*94.9*		*ug/kg*	*100*		*94.9*	*70-140*			
Surrogate: Dibromofluoromethane	*95.6*		*ug/kg*	*100*		*95.6*	*70-140*			
Surrogate: Toluene-d8	*94.8*		*ug/kg*	*100*		*94.8*	*70-140*			
LCS Dup (B8F2536-BSD1)				Prepared & Analyzed: 06/25/18						
Acetone	**32.1**	50	ug/kg	40		80.4	70-130	5.04	30	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS EPA 5035 - Quality Control										
Batch B8F2536 - EPA 5035										
LCS Dup (B8F2536-BSD1) Continued				Prepared & Analyzed: 06/25/18						
tert-Amyl Methyl Ether (TAME)	**36.4**	5.0	ug/kg	40		91.0	70-130	3.30	30	
Benzene	**38.1**	2.0	ug/kg	40		95.2	75-125	3.09	30	
Bromobenzene	**42.0**	5.0	ug/kg	40		105	70-130	2.02	30	
Bromochloromethane	**44.3**	5.0	ug/kg	40		111	70-130	2.88	30	
Bromodichloromethane	**41.2**	5.0	ug/kg	40		103	75-125	1.66	30	
Bromoform	**40.5**	5.0	ug/kg	40		101	75-125	2.75	30	
Bromomethane	**46.0**	5.0	ug/kg	40		115	75-125	4.09	30	
2-Butanone (MEK)	**24.7**	50	ug/kg	40		61.8	70-130	1.96	30	***
tert-Butyl alcohol (TBA)	**152**	20	ug/kg	200		76.1	70-130	18.2	30	
sec-Butylbenzene	**41.0**	5.0	ug/kg	40		103	70-130	7.17	30	
tert-Butylbenzene	**41.5**	5.0	ug/kg	40		104	70-130	8.18	30	
n-Butylbenzene	**39.6**	5.0	ug/kg	40		99.1	70-130	8.69	30	
Carbon Disulfide	**38.3**	5.0	ug/kg	40		95.8	70-130	2.22	30	
Carbon Tetrachloride	**41.8**	5.0	ug/kg	40		105	75-125	1.79	30	
Chlorobenzene	**41.3**	5.0	ug/kg	40		103	75-125	0.339	30	
Chloroethane	**38.9**	5.0	ug/kg	40		97.4	75-125	3.58	30	
Chloroform	**41.9**	5.0	ug/kg	40		105	75-125	1.59	30	
Chloromethane	**38.1**	5.0	ug/kg	40		95.2	65-125	0.685	30	
2-Chlorotoluene	**40.1**	5.0	ug/kg	40		100	70-130	4.90	30	
4-Chlorotoluene	**40.8**	5.0	ug/kg	40		102	70-130	3.89	30	
1,2-Dibromo-3-chloropropane	**39.1**	10	ug/kg	40		97.8	70-130	6.49	30	
Dibromochloromethane	**42.1**	5.0	ug/kg	40		105	75-125	4.62	30	
1,2-Dibromoethane (EDB)	**39.3**	5.0	ug/kg	40		98.3	70-130	3.26	30	
Dibromomethane	**39.3**	5.0	ug/kg	40		98.2	70-130	0.0509	30	
1,4-Dichlorobenzene	**40.6**	5.0	ug/kg	40		102	75-125	3.91	30	
1,3-Dichlorobenzene	**40.8**	5.0	ug/kg	40		102	70-130	4.05	30	
1,2-Dichlorobenzene	**42.0**	5.0	ug/kg	40		105	70-130	1.87	30	
Dichlorodifluoromethane (R12)	**28.8**	5.0	ug/kg	40		72.0	70-130	13.8	30	
1,1-Dichloroethane	**40.8**	5.0	ug/kg	40		102	70-125	2.23	30	
1,2-Dichloroethane (EDC)	**42.3**	5.0	ug/kg	40		106	75-125	1.62	30	
trans-1,2-Dichloroethylene	**41.1**	5.0	ug/kg	40		103	75-125	2.31	30	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS EPA 5035 - Quality Control										
Batch B8F2536 - EPA 5035										
LCS Dup (B8F2536-BSD1) Continued				Prepared & Analyzed: 06/25/18						
cis-1,2-Dichloroethylene	**40.8**	5.0	ug/kg	40		102	75-125	1.78	30	
1,1-Dichloroethylene	**41.1**	5.0	ug/kg	40		103	70-130	6.13	30	
2,2-Dichloropropane	**37.2**	5.0	ug/kg	40		92.9	70-130	6.16	30	
1,3-Dichloropropane	**38.6**	5.0	ug/kg	40		96.4	70-130	2.20	30	
1,2-Dichloropropane	**39.6**	5.0	ug/kg	40		99.0	75-130	1.17	30	
trans-1,3-Dichloropropylene	**40.5**	5.0	ug/kg	40		101	70-130	1.19	30	
1,1-Dichloropropylene	**39.6**	5.0	ug/kg	40		99.1	70-130	2.87	30	
cis-1,3-Dichloropropylene	**40.2**	5.0	ug/kg	40		101	75-125	1.25	30	
Diisopropyl ether (DIPE)	**38.2**	5.0	ug/kg	40		95.4	70-130	2.12	30	
Ethylbenzene	**41.5**	2.0	ug/kg	40		104	75-125	4.53	30	
Ethyl-tert-Butyl Ether (ETBE)	**39.9**	5.0	ug/kg	40		99.8	70-130	2.18	30	
Hexachlorobutadiene	**41.6**	10	ug/kg	40		104	70-130	14.6	30	
2-Hexanone (MBK)	**33.9**	50	ug/kg	40		84.6	70-130	4.95	30	
Isopropylbenzene	**41.0**	5.0	ug/kg	40		103	70-130	5.77	30	
4-Isopropyltoluene	**41.8**	5.0	ug/kg	40		104	70-130	6.99	30	
Methyl-tert-Butyl Ether (MTBE)	**78.8**	5.0	ug/kg	80		98.5	75-125	3.80	30	
Methylene Chloride	**37.1**	50	ug/kg	40		92.6	75-130	2.46	30	
4-Methyl-2-pentanone (MIBK)	**40.1**	50	ug/kg	40		100	70-130	0.501	30	
Naphthalene	**37.8**	10	ug/kg	40		94.4	70-130	8.33	30	
n-Propylbenzene	**41.1**	5.0	ug/kg	40		103	70-130	6.75	30	
Styrene	**39.6**	5.0	ug/kg	40		99.0	70-130	0.811	30	
1,1,1,2-Tetrachloroethane	**42.7**	5.0	ug/kg	40		107	70-130	2.22	30	
1,1,2,2-Tetrachloroethane	**37.6**	5.0	ug/kg	40		94.0	70-135	2.42	30	
Tetrachloroethylene (PCE)	**41.2**	5.0	ug/kg	40		103	75-125	2.11	30	
Toluene	**41.8**	2.0	ug/kg	40		104	75-125	4.91	30	
1,2,4-Trichlorobenzene	**42.1**	5.0	ug/kg	40		105	70-130	6.02	30	
1,2,3-Trichlorobenzene	**41.6**	5.0	ug/kg	40		104	70-130	6.70	30	
1,1,2-Trichloroethane	**40.9**	5.0	ug/kg	40		102	75-125	7.45	30	
1,1,1-Trichloroethane	**42.3**	5.0	ug/kg	40		106	75-125	3.12	30	
Trichloroethylene (TCE)	**39.6**	5.0	ug/kg	40		99.0	75-125	3.81	30	
Trichlorofluoromethane (R11)	**48.0**	5.0	ug/kg	40		120	70-130	13.2	30	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS EPA 5035 - Quality Control										
Batch B8F2536 - EPA 5035										
LCS Dup (B8F2536-BSD1) Continued				Prepared & Analyzed: 06/25/18						
1,2,3-Trichloropropane	**36.0**	5.0	ug/kg	40		90.0	70-130	3.56	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**39.7**	5.0	ug/kg	40		99.2	70-130	0.252	30	
1,3,5-Trimethylbenzene	**40.9**	5.0	ug/kg	40		102	70-130	7.09	30	
1,2,4-Trimethylbenzene	**40.4**	5.0	ug/kg	40		101	70-130	4.93	30	
Vinyl chloride	**38.2**	5.0	ug/kg	40		95.4	75-125	5.80	30	
o-Xylene	**39.2**	2.0	ug/kg	40		98.0	75-125	1.44	30	
m,p-Xylenes	**78.5**	2.0	ug/kg	80		98.2	70-130	3.29	30	
Surrogate: 4-Bromofluorobenzene	*95.6*		*ug/kg*	*100*		*95.6*	*70-140*			
Surrogate: Dibromofluoromethane	*96.3*		*ug/kg*	*100*		*96.3*	*70-140*			
Surrogate: Toluene-d8	*96.9*		*ug/kg*	*100*		*96.9*	*70-140*			
Carbon Chain by GC/FID - Quality Control										
Batch B8F2223 - EPA 3550B										
Blank (B8F2223-BLK1)				Prepared & Analyzed: 06/22/18						
C6-C8	<1.0	1.0	mg/kg							
C8-C10	<1.0	1.0	mg/kg							
C10-C12	<1.0	1.0	mg/kg							
C12-C14	<1.0	1.0	mg/kg							
C14-C16	<1.0	1.0	mg/kg							
C16-C18	<1.0	1.0	mg/kg							
C18-C20	<1.0	1.0	mg/kg							
C20-C22	<1.0	1.0	mg/kg							
C22-C24	<1.0	1.0	mg/kg							
C24-C26	<1.0	1.0	mg/kg							
C26-C28	<1.0	1.0	mg/kg							
C28-C32	<1.0	1.0	mg/kg							
C32-C34	<1.0	1.0	mg/kg							
C34-C36	<1.0	1.0	mg/kg							
C36-C40	<1.0	1.0	mg/kg							
C40-C44	<1.0	1.0	mg/kg							
TPH (C6-C44)	<10	10	mg/kg							

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Carbon Chain by GC/FID - Quality Control										
Batch B8F2223 - EPA 3550B										
Blank (B8F2223-BLK1) Continued				Prepared & Analyzed: 06/22/18						
Gasoline Range Organics (C6-C10)	<5.0	5.0	mg/kg							
Diesel Range Organics (C10-C23)	<5.0	5.0	mg/kg							
Oil Range Organics (C23-C44)	<5.0	5.0	mg/kg							
Surrogate: o-Terphenyl	*8.57*		*mg/kg*	*10*		*85.7*	*50-150*			
LCS (B8F2223-BS1)				Prepared & Analyzed: 06/22/18						
Diesel Range Organics as Diesel	**201**	10	mg/kg	200		100	75-125			
Surrogate: o-Terphenyl	*12.2*		*mg/kg*	*10*		*122*	*50-150*			
LCS Dup (B8F2223-BSD1)				Prepared: 06/22/18 Analyzed: 06/23/18						
Diesel Range Organics as Diesel	**198**	10	mg/kg	200		99.2	75-125	1.24	40	
Surrogate: o-Terphenyl	*12.3*		*mg/kg*	*10*		*123*	*50-150*			
Matrix Spike (B8F2223-MS1)		**Source: 8F20019-28**		Prepared: 06/22/18 Analyzed: 06/23/18						
Diesel Range Organics as Diesel	**192**	10	mg/kg	200	11.7	90.3	70-130			
Surrogate: o-Terphenyl	*11.3*		*mg/kg*	*10*		*113*	*50-150*			
Matrix Spike Dup (B8F2223-MSD1)		**Source: 8F20019-28**		Prepared: 06/22/18 Analyzed: 06/23/18						
Diesel Range Organics as Diesel	**199**	10	mg/kg	200	11.7	93.7	70-130	3.45	40	
Surrogate: o-Terphenyl	*10.8*		*mg/kg*	*10*		*108*	*50-150*			
Batch B8F2525 - EPA 3510C										
Blank (B8F2525-BLK1)				Prepared & Analyzed: 06/25/18						
C6-C8	<0.010	0.010	mg/L							
C8-C10	<0.010	0.010	mg/L							
C10-C12	<0.010	0.010	mg/L							
C12-C14	<0.010	0.010	mg/L							
C14-C16	<0.010	0.010	mg/L							
C16-C18	<0.010	0.010	mg/L							
C18-C20	<0.010	0.010	mg/L							
C20-C22	<0.010	0.010	mg/L							
C22-C24	<0.010	0.010	mg/L							
C24-C26	<0.010	0.010	mg/L							
C26-C28	<0.010	0.010	mg/L							

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Carbon Chain by GC/FID - Quality Control										
Batch B8F2525 - EPA 3510C										
Blank (B8F2525-BLK1) Continued				Prepared & Analyzed: 06/25/18						
C28-C32	<0.010	0.010	mg/L							
C32-C34	<0.010	0.010	mg/L							
C34-C36	<0.010	0.010	mg/L							
C36-C40	<0.010	0.010	mg/L							
C40-C44	<0.010	0.010	mg/L							
TPH (C6-C44)	<0.10	0.10	mg/L							
Gasoline Range Organics (C6-C10)	<0.10	0.10	mg/L							
Diesel Range Organics (C10-C23)	<0.10	0.10	mg/L							
Oil Range Organics (C23-C44)	<0.10	0.10	mg/L							
Surrogate: o-Terphenyl	*0.0310*		*mg/L*	*0.040*		*77.5*	*50-150*			
LCS (B8F2525-BS1)				Prepared & Analyzed: 06/25/18						
Diesel Range Organics as Diesel	**0.626**	0.10	mg/L	0.80		78.2	75-125			
Surrogate: o-Terphenyl	*0.0258*		*mg/L*	*0.040*		*64.4*	*50-150*			
LCS Dup (B8F2525-BSD1)				Prepared & Analyzed: 06/25/18						
Diesel Range Organics as Diesel	**0.772**	0.10	mg/L	0.80		96.5	75-125	20.9	30	
Surrogate: o-Terphenyl	*0.0414*		*mg/L*	*0.040*		*103*	*50-150*			
Batch B8F2909 - EPA 3550B										
Blank (B8F2909-BLK1)				Prepared & Analyzed: 06/29/18						
C6-C8	<1.0	1.0	mg/kg							
C8-C10	<1.0	1.0	mg/kg							
C10-C12	<1.0	1.0	mg/kg							
C12-C14	<1.0	1.0	mg/kg							
C14-C16	<1.0	1.0	mg/kg							
C16-C18	<1.0	1.0	mg/kg							
C18-C20	<1.0	1.0	mg/kg							
C20-C22	<1.0	1.0	mg/kg							
C22-C24	<1.0	1.0	mg/kg							
C24-C26	<1.0	1.0	mg/kg							
C26-C28	<1.0	1.0	mg/kg							
C28-C32	<1.0	1.0	mg/kg							

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Carbon Chain by GC/FID - Quality Control										
Batch B8F2909 - EPA 3550B										
Blank (B8F2909-BLK1) Continued				Prepared & Analyzed: 06/29/18						
C32-C34	<1.0	1.0	mg/kg							
C34-C36	<1.0	1.0	mg/kg							
C36-C40	<1.0	1.0	mg/kg							
C40-C44	<1.0	1.0	mg/kg							
TPH (C6-C44)	<10	10	mg/kg							
Gasoline Range Organics (C6-C10)	<5.0	5.0	mg/kg							
Diesel Range Organics (C10-C23)	<5.0	5.0	mg/kg							
Oil Range Organics (C23-C44)	<5.0	5.0	mg/kg							
Surrogate: o-Terphenyl	*8.92*		*mg/kg*	*10*		*89.2*	*50-150*			
LCS (B8F2909-BS1)				Prepared & Analyzed: 06/29/18						
Diesel Range Organics as Diesel	**240**	10	mg/kg	200		120	75-125			
Surrogate: o-Terphenyl	*13.1*		*mg/kg*	*10*		*131*	*50-150*			
LCS Dup (B8F2909-BSD1)				Prepared & Analyzed: 06/29/18						
Diesel Range Organics as Diesel	**246**	10	mg/kg	200		123	75-125	2.22	40	
Surrogate: o-Terphenyl	*13.7*		*mg/kg*	*10*		*137*	*50-150*			
Matrix Spike (B8F2909-MS1)		**Source: 8F20019-03**		Prepared & Analyzed: 06/29/18						
Diesel Range Organics as Diesel	**212**	10	mg/kg	200	51.6	80.4	70-130			
Surrogate: o-Terphenyl	*11.0*		*mg/kg*	*10*		*110*	*50-150*			
Matrix Spike Dup (B8F2909-MSD1)		**Source: 8F20019-03**		Prepared & Analyzed: 06/29/18						
Diesel Range Organics as Diesel	**216**	10	mg/kg	200	51.6	82.2	70-130	1.62	40	
Surrogate: o-Terphenyl	*11.6*		*mg/kg*	*10*		*116*	*50-150*			
Total Metals by ICP Atomic Emission Spectroscopy - Quality Control										
Batch B8F2910 - EPA 3050B										
Blank (B8F2910-BLK1)				Prepared: 06/28/18 Analyzed: 06/29/18						
Lead	<3.0	3.0	mg/kg							
LCS (B8F2910-BS1)				Prepared: 06/28/18 Analyzed: 06/29/18						
Lead	**49.3**	3.0	mg/kg	50		98.7	80-120			
LCS Dup (B8F2910-BSD1)				Prepared: 06/28/18 Analyzed: 06/29/18						

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Metals by ICP Atomic Emission Spectroscopy - Quality Control										
Batch B8F2910 - EPA 3050B										
LCS Dup (B8F2910-BSD1) Continued				Prepared: 06/28/18 Analyzed: 06/29/18						
Lead	**53.0**	3.0	mg/kg	50		106	80-120	7.14	20	
Matrix Spike (B8F2910-MS1)		**Source: 8F20019-02**		Prepared: 06/28/18 Analyzed: 06/29/18						
Lead	**53.6**	3.0	mg/kg	50	6.73	93.7	75-125			
Matrix Spike Dup (B8F2910-MSD1)		**Source: 8F20019-02**		Prepared: 06/28/18 Analyzed: 06/29/18						
Lead	**52.9**	3.0	mg/kg	50	6.73	92.3	75-125	1.30	40	
Total Metals by ICP/MS EPA 6020B - Quality Control										
Batch B8F2221 - EPA 3020A										
Blank (B8F2221-BLK1)				Prepared: 06/22/18 Analyzed: 06/25/18						
Antimony	<5.0	5.0	ug/L							
Arsenic	<5.0	5.0	ug/L							
Barium	<5.0	5.0	ug/L							
Beryllium	<5.0	5.0	ug/L							
Cadmium	<5.0	5.0	ug/L							
Chromium	<5.0	5.0	ug/L							
Cobalt	<5.0	5.0	ug/L							
Copper	<5.0	5.0	ug/L							
Lead	<5.0	5.0	ug/L							
Molybdenum	<5.0	5.0	ug/L							
Nickel	<5.0	5.0	ug/L							
Selenium	<20	20	ug/L							
Silver	<5.0	5.0	ug/L							
Thallium	<5.0	5.0	ug/L							
Vanadium	<20	20	ug/L							
Zinc	<20	20	ug/L							
LCS (B8F2221-BS1)				Prepared: 06/22/18 Analyzed: 06/25/18						
Antimony	**50.5**	5.0	ug/L	50		101	80-120			
Arsenic	**49.7**	5.0	ug/L	50		99.3	80-120			
Barium	**50.3**	5.0	ug/L	50		101	80-120			
Beryllium	**45.5**	5.0	ug/L	50		91.0	80-120			
Cadmium	**49.7**	5.0	ug/L	50		99.4	80-120			

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Operations Manager

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Client: AECOM (LA)
Project No: NA
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Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Metals by ICP/MS EPA 6020B - Quality Control										
Batch B8F2221 - EPA 3020A										
LCS (B8F2221-BS1) Continued				Prepared: 06/22/18 Analyzed: 06/25/18						
Chromium	**45.6**	5.0	ug/L	50		91.2	80-120			
Cobalt	**49.7**	5.0	ug/L	50		99.4	80-120			
Copper	**47.1**	5.0	ug/L	50		94.2	80-120			
Lead	**49.8**	5.0	ug/L	50		99.6	80-120			
Nickel	**50.5**	5.0	ug/L	50		101	80-120			
Selenium	**251**	20	ug/L	250		100	80-120			
Silver	**50.8**	5.0	ug/L	50		102	80-120			
Thallium	**49.6**	5.0	ug/L	50		99.1	80-120			
Vanadium	**60.0**	20	ug/L	50		120	80-120			
Zinc	**54.5**	20	ug/L	50		109	80-120			
LCS Dup (B8F2221-BSD1)				Prepared: 06/22/18 Analyzed: 06/25/18						
Antimony	**50.6**	5.0	ug/L	50		101	80-120	0.247	20	
Arsenic	**48.0**	5.0	ug/L	50		96.1	80-120	3.30	20	
Barium	**50.7**	5.0	ug/L	50		101	80-120	0.682	20	
Beryllium	**46.6**	5.0	ug/L	50		93.1	80-120	2.32	20	
Cadmium	**49.8**	5.0	ug/L	50		99.5	80-120	0.0503	20	
Chromium	**45.2**	5.0	ug/L	50		90.4	80-120	0.882	20	
Cobalt	**49.4**	5.0	ug/L	50		98.7	80-120	0.757	20	
Copper	**46.3**	5.0	ug/L	50		92.6	80-120	1.66	20	
Lead	**49.8**	5.0	ug/L	50		99.6	80-120	0.00	20	
Molybdenum	**50.2**	5.0	ug/L	50		100	80-120	0.892	20	
Nickel	**50.0**	5.0	ug/L	50		99.9	80-120	1.05	20	
Selenium	**243**	20	ug/L	250		97.2	80-120	3.04	20	
Silver	**48.0**	5.0	ug/L	50		96.1	80-120	5.47	20	
Thallium	**50.4**	5.0	ug/L	50		101	80-120	1.80	20	
Vanadium	**60.0**	20	ug/L	50		120	80-120	0.00	20	
Zinc	**48.2**	20	ug/L	50		96.4	80-120	12.2	20	
Duplicate (B8F2221-DUP1)				**Source: 8F20019-26** Prepared: 06/22/18 Analyzed: 06/25/18						
Antimony	**<5.0**	5.0	ug/L		<5.0				30	
Arsenic	**110**	5.0	ug/L		102			7.56	30	
Barium	**310**	5.0	ug/L		300			3.33	30	

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Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Metals by ICP/MS EPA 6020B - Quality Control										
Batch B8F2221 - EPA 3020A										
Duplicate (B8F2221-DUP1) Continued			**Source: 8F20019-26**			Prepared: 06/22/18		Analyzed: 06/25/18		
Beryllium	**47.5**	5.0	ug/L		<5.0				30	
Cadmium	**<5.0**	5.0	ug/L		<5.0				30	
Chromium	**21.9**	5.0	ug/L		26.2			18.0	30	
Cobalt	**6.15**	5.0	ug/L		5.95			3.31	30	
Copper	**17.0**	5.0	ug/L		17.1			0.587	30	
Lead	**11.4**	5.0	ug/L		11.0			4.02	30	
Molybdenum	**65.6**	5.0	ug/L		60.2			8.43	30	
Nickel	**56.4**	5.0	ug/L		48.5			15.1	30	
Selenium	**<20**	20	ug/L		<20				30	
Silver	**<5.0**	5.0	ug/L		<5.0				30	
Thallium	**<5.0**	5.0	ug/L		<5.0				30	
Vanadium	**32.3**	20	ug/L		34.7			7.09	30	
Zinc	**43.4**	20	ug/L		45.8			5.56	30	
Matrix Spike (B8F2221-MS1)			**Source: 8F20018-05**			Prepared: 06/22/18		Analyzed: 06/25/18		
Antimony	**52.4**	5.0	ug/L	50		105	75-125			
Arsenic	**54.3**	5.0	ug/L	50		109	75-125			
Barium	**200**	5.0	ug/L	50	49.7	301	75-125			QM-07
Beryllium	**38.0**	5.0	ug/L	50		76.0	75-125			
Cadmium	**49.2**	5.0	ug/L	50		98.3	75-125			
Chromium	**46.4**	5.0	ug/L	50		92.8	75-125			
Cobalt	**53.3**	5.0	ug/L	50		107	75-125			
Copper	**54.0**	5.0	ug/L	50	5.12	97.8	75-125			
Lead	**55.3**	5.0	ug/L	50		111	75-125			
Molybdenum	**59.3**	5.0	ug/L	50	11.6	95.4	75-125			
Nickel	**67.5**	5.0	ug/L	50	5.52	124	75-125			
Selenium	**340**	20	ug/L	250		136	75-125			QM-07
Silver	**47.0**	5.0	ug/L	50		93.9	75-125			
Thallium	**51.4**	5.0	ug/L	50		103	75-125			
Vanadium	**112**	20	ug/L	50	21.8	180	75-125			QM-07
Zinc	**74.8**	20	ug/L	50		150	75-125			QM-07
Matrix Spike Dup (B8F2221-MSD1)			**Source: 8F20018-05**			Prepared: 06/22/18		Analyzed: 06/25/18		



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Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Metals by ICP/MS EPA 6020B - Quality Control										
Batch B8F2221 - EPA 3020A										
Matrix Spike Dup (B8F2221-MSD1) Continued				**Source: 8F20018-05**		Prepared: 06/22/18	Analyzed: 06/25/18			
Antimony	**53.7**	5.0	ug/L	50		107	75-125	2.55	30	
Arsenic	**54.2**	5.0	ug/L	50		108	75-125	0.184	30	
Barium	**200**	5.0	ug/L	50	49.7	301	75-125	0.175	30	QM-07
Beryllium	**38.8**	5.0	ug/L	50		77.5	75-125	1.89	30	
Cadmium	**50.6**	5.0	ug/L	50		101	75-125	2.91	30	
Chromium	**47.4**	5.0	ug/L	50		94.8	75-125	2.08	30	
Cobalt	**53.8**	5.0	ug/L	50		108	75-125	0.980	30	
Copper	**52.0**	5.0	ug/L	50	5.12	93.6	75-125	3.96	30	
Lead	**56.5**	5.0	ug/L	50		113	75-125	2.24	30	
Molybdenum	**59.2**	5.0	ug/L	50	11.6	95.2	75-125	0.169	30	
Nickel	**67.6**	5.0	ug/L	50	5.52	124	75-125	0.111	30	
Selenium	**282**	20	ug/L	250		113	75-125	18.6	30	
Silver	**46.9**	5.0	ug/L	50		93.8	75-125	0.160	30	
Thallium	**52.7**	5.0	ug/L	50		105	75-125	2.45	30	
Vanadium	**115**	20	ug/L	50	21.8	186	75-125	2.89	30	QM-07
Zinc	**78.2**	20	ug/L	50		156	75-125	4.48	30	QM-07
Total Metals CAM 17 - Quality Control										
Batch B8F2220 - EPA 3050B										
Blank (B8F2220-BLK1)						Prepared: 06/22/18	Analyzed: 06/25/18			
Antimony	<10	10	mg/kg							
Arsenic	<0.50	0.50	mg/kg							
Barium	<10	10	mg/kg							
Beryllium	<1.0	1.0	mg/kg							
Cadmium	<1.0	1.0	mg/kg							
Chromium	<3.0	3.0	mg/kg							
Cobalt	<3.0	3.0	mg/kg							
Copper	<3.0	3.0	mg/kg							
Lead	<3.0	3.0	mg/kg							
Molybdenum	<5.0	5.0	mg/kg							
Nickel	<3.0	3.0	mg/kg							

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Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

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Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Metals CAM 17 - Quality Control										
Batch B8F2220 - EPA 3050B										
Blank (B8F2220-BLK1) Continued				Prepared: 06/22/18 Analyzed: 06/25/18						
Selenium	<0.50	0.50	mg/kg							
Silver	<1.0	1.0	mg/kg							
Thallium	<5.0	5.0	mg/kg							
Vanadium	<10	10	mg/kg							
Zinc	<3.0	3.0	mg/kg							
LCS (B8F2220-BS1)				Prepared: 06/22/18 Analyzed: 06/25/18						
Antimony	**54.5**	10	mg/kg	50		109	80-120			
Arsenic	**52.5**	0.50	mg/kg	50		105	80-120			
Barium	**52.4**	10	mg/kg	50		105	80-120			
Beryllium	**56.7**	1.0	mg/kg	50		113	80-120			
Cadmium	**57.1**	1.0	mg/kg	50		114	80-120			
Chromium	**53.7**	3.0	mg/kg	50		107	80-120			
Cobalt	**55.1**	3.0	mg/kg	50		110	80-120			
Copper	**51.5**	3.0	mg/kg	50		103	80-120			
Lead	**52.9**	3.0	mg/kg	50		106	80-120			
Molybdenum	**56.8**	5.0	mg/kg	50		114	80-120			
Nickel	**55.3**	3.0	mg/kg	50		111	80-120			
Selenium	**55.0**	0.50	mg/kg	50		110	80-120			
Silver	**51.6**	1.0	mg/kg	50		103	80-120			
Thallium	**55.7**	5.0	mg/kg	50		111	80-120			
Vanadium	**54.9**	10	mg/kg	50		110	80-120			
Zinc	**58.0**	3.0	mg/kg	50		116	80-120			
LCS Dup (B8F2220-BSD1)				Prepared: 06/22/18 Analyzed: 06/25/18						
Antimony	**51.0**	10	mg/kg	50		102	80-120	6.62	20	
Arsenic	**49.3**	0.50	mg/kg	50		98.6	80-120	6.25	20	
Barium	**49.5**	10	mg/kg	50		99.1	80-120	5.71	20	
Beryllium	**53.7**	1.0	mg/kg	50		107	80-120	5.45	20	
Cadmium	**53.9**	1.0	mg/kg	50		108	80-120	5.71	20	
Chromium	**50.4**	3.0	mg/kg	50		101	80-120	6.22	20	
Cobalt	**51.9**	3.0	mg/kg	50		104	80-120	6.04	20	
Copper	**48.0**	3.0	mg/kg	50		96.1	80-120	6.90	20	

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LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
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Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Metals CAM 17 - Quality Control										
Batch B8F2220 - EPA 3050B										
LCS Dup (B8F2220-BSD1) Continued				Prepared: 06/22/18 Analyzed: 06/25/18						
Lead	**50.2**	3.0	mg/kg	50		100	80-120	5.18	20	
Molybdenum	**53.3**	5.0	mg/kg	50		107	80-120	6.34	20	
Nickel	**52.2**	3.0	mg/kg	50		104	80-120	5.77	20	
Selenium	**51.3**	0.50	mg/kg	50		103	80-120	6.94	20	
Silver	**48.9**	1.0	mg/kg	50		97.8	80-120	5.49	20	
Thallium	**51.9**	5.0	mg/kg	50		104	80-120	7.19	20	
Vanadium	**51.5**	10	mg/kg	50		103	80-120	6.30	20	
Zinc	**55.5**	3.0	mg/kg	50		111	80-120	4.42	20	
Duplicate (B8F2220-DUP1)			**Source: 8F21005-01**	Prepared: 06/22/18 Analyzed: 06/25/18						
Antimony	**<10**	10	mg/kg						40	
Arsenic	**2.48**	0.50	mg/kg		2.75			10.3	40	
Barium	**47.4**	10	mg/kg		42.0			12.2	40	
Beryllium	**<1.0**	1.0	mg/kg						40	
Cadmium	**<1.0**	1.0	mg/kg						40	
Chromium	**12.3**	3.0	mg/kg		11.8			3.65	40	
Cobalt	**3.63**	3.0	mg/kg		3.58			1.39	40	
Copper	**<3.0**	3.0	mg/kg		3.13				40	
Lead	**47.2**	3.0	mg/kg		27.8			51.6	40	AA-C1
Molybdenum	**<5.0**	5.0	mg/kg						40	
Nickel	**10.0**	3.0	mg/kg		10.3			3.15	40	
Selenium	**<0.50**	0.50	mg/kg						40	
Silver	**<1.0**	1.0	mg/kg						40	
Thallium	**<5.0**	5.0	mg/kg						40	
Vanadium	**27.9**	10	mg/kg		26.4			5.46	40	
Zinc	**60.5**	3.0	mg/kg		56.5			6.80	40	
Matrix Spike (B8F2220-MS1)			**Source: 8F20019-01**	Prepared: 06/22/18 Analyzed: 06/25/18						
Antimony	**25.9**	10	mg/kg	50	<10	51.7	75-125			QM-07
Arsenic	**47.5**	0.50	mg/kg	50	2.99	89.1	75-125			
Barium	**112**	10	mg/kg	50	53.8	116	75-125			
Beryllium	**45.5**	1.0	mg/kg	50	<1.0	91.0	75-125			
Cadmium	**39.4**	1.0	mg/kg	50	<1.0	78.8	75-125			

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Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Metals CAM 17 - Quality Control										
Batch B8F2220 - EPA 3050B										
Matrix Spike (B8F2220-MS1) Continued Source: 8F20019-01 Prepared: 06/22/18 Analyzed: 06/25/18										
Chromium	**60.4**	3.0	mg/kg	50	12.7	95.3	75-125			
Cobalt	**48.3**	3.0	mg/kg	50	3.18	90.2	75-125			
Copper	**82.7**	3.0	mg/kg	50	10.3	145	75-125			QM-07
Lead	**79.6**	3.0	mg/kg	50	34.2	90.7	75-125			
Molybdenum	**49.5**	5.0	mg/kg	50	<5.0	99.0	75-125			
Nickel	**53.7**	3.0	mg/kg	50	9.18	89.0	75-125			
Selenium	**39.6**	0.50	mg/kg	50	<0.50	79.2	75-125			
Silver	**50.0**	1.0	mg/kg	50	<1.0	100	75-125			
Thallium	**38.3**	5.0	mg/kg	50	<5.0	76.5	60-140			
Vanadium	**78.2**	10	mg/kg	50	25.0	106	75-125			
Zinc	**127**	3.0	mg/kg	50	74.1	105	75-125			
Matrix Spike Dup (B8F2220-MSD1) **Source: 8F20019-01** Prepared: 06/22/18 Analyzed: 06/25/18										
Antimony	**26.4**	10	mg/kg	50	<10	52.9	75-125	2.18	40	QM-07
Arsenic	**47.9**	0.50	mg/kg	50	2.99	89.9	75-125	0.880	40	
Barium	**106**	10	mg/kg	50	53.8	104	75-125	5.52	40	
Beryllium	**46.1**	1.0	mg/kg	50	<1.0	92.2	75-125	1.31	40	
Cadmium	**40.1**	1.0	mg/kg	50	<1.0	80.2	75-125	1.76	40	
Chromium	**60.6**	3.0	mg/kg	50	12.7	95.7	75-125	0.347	40	
Cobalt	**48.6**	3.0	mg/kg	50	3.18	90.8	75-125	0.702	40	
Copper	**65.7**	3.0	mg/kg	50	10.3	111	75-125	22.9	40	
Lead	**81.6**	3.0	mg/kg	50	34.2	94.6	75-125	2.47	40	
Molybdenum	**49.8**	5.0	mg/kg	50	<5.0	99.7	75-125	0.725	40	
Nickel	**53.6**	3.0	mg/kg	50	9.18	88.9	75-125	0.0373	40	
Selenium	**42.3**	0.50	mg/kg	50	<0.50	84.6	75-125	6.57	40	
Silver	**51.4**	1.0	mg/kg	50	<1.0	103	75-125	2.78	40	
Thallium	**36.8**	5.0	mg/kg	50	<5.0	73.6	60-140	3.92	40	
Vanadium	**75.8**	10	mg/kg	50	25.0	102	75-125	3.18	40	
Zinc	**117**	3.0	mg/kg	50	74.1	86.3	75-125	7.70	40	
Total Metals CAM 17 - Quality Control										
Batch B8F2125 - EPA 7470A Prep										
Blank (B8F2125-BLK1) Prepared: 06/21/18 Analyzed: 06/22/18										



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LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94898
Date Received: 06/20/18
Date Reported: 06/29/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Metals CAM 17 - Quality Control										
Batch B8F2125 - EPA 7470A Prep										
Blank (B8F2125-BLK1) Continued				Prepared: 06/21/18 Analyzed: 06/22/18						
Mercury	<0.00050	0.00050	mg/L							
LCS (B8F2125-BS1)				Prepared: 06/21/18 Analyzed: 06/22/18						
Mercury	**0.0100**	0.00050	mg/L	0.010		100	80-120			
LCS Dup (B8F2125-BSD1)				Prepared: 06/21/18 Analyzed: 06/22/18						
Mercury	**0.0100**	0.00050	mg/L	0.010		100	80-120	0.150	20	
Duplicate (B8F2125-DUP1)			**Source: 8F20018-01**	Prepared: 06/21/18 Analyzed: 06/22/18						
Mercury	**<0.00050**	0.00050	mg/L						25	
Matrix Spike (B8F2125-MS1)			**Source: 8F20018-07**	Prepared: 06/21/18 Analyzed: 06/22/18						
Mercury	**0.00957**	0.00050	mg/L	0.010		95.7	75-125			
Matrix Spike Dup (B8F2125-MSD1)			**Source: 8F20018-07**	Prepared: 06/21/18 Analyzed: 06/22/18						
Mercury	**0.00988**	0.00050	mg/L	0.010		98.8	75-125	3.24	20	
Batch B8F2534 - EPA 7471A Prep										
Blank (B8F2534-BLK1)				Prepared & Analyzed: 06/25/18						
Mercury	<0.020	0.020	mg/kg							
LCS (B8F2534-BS1)				Prepared & Analyzed: 06/25/18						
Mercury	**0.518**	0.020	mg/kg	0.50		104	80-120			
LCS Dup (B8F2534-BSD1)				Prepared & Analyzed: 06/25/18						
Mercury	**0.526**	0.020	mg/kg	0.50		105	80-120	1.34	25	
Duplicate (B8F2534-DUP1)			**Source: 8F21005-01**	Prepared & Analyzed: 06/25/18						
Mercury	**0.0680**	0.020	mg/kg		0.0790			15.0	25	
Matrix Spike (B8F2534-MS1)			**Source: 8F20019-01**	Prepared & Analyzed: 06/25/18						
Mercury	**0.728**	0.020	mg/kg	0.50	0.248	96.0	75-125			
Matrix Spike Dup (B8F2534-MSD1)			**Source: 8F20019-01**	Prepared & Analyzed: 06/25/18						
Mercury	**0.757**	0.020	mg/kg	0.50	0.248	102	75-125	3.91	25	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client:	AECOM (LA)	**AA Project No:**	A94898
Project No:	NA	**Date Received:**	06/20/18
Project Name:	128 Hurricane - Soil & GW	**Date Reported:**	06/29/18

Special Notes

[1] = * : Subcontracted to a DOHS State-Certified Laboratory

[2] = ** : Exceeds upper control limit.

[3] = *** : Exceeds lower control limit.

[4] = **AA-C1** : Exceeds RPD limit.

[5] = **QM-07** : The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

[6] = **S-04** : The surrogate recovery for this sample is outside of established control limits due to a sample matrix effect.

[7] = **S-GC** : Surrogate recovery outside of control limits. The data was accepted based on valid recovery of the remaining surrogate(s).

Viorel Vasile
Operations Manager

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Ordered By

American Analytics
9765 Eton Avenue
Chatsworth, CA 91311-4306

Number of Pages	**3**
Date Received	**06/22/2018**
Date Reported	**06/25/2018**

Telephone: (818)998-5547
Attention: Viorel Vasile

Job Number	Order Date	Client
93058	06/22/2018	AA

Project ID: A94898/8F20019
Project Name: PO# SUB03582-A94898

Enclosed please find results of analyses of 2 soil samples which were analyzed as specified on the attached chain of custody. If there are any questions, please do not hesitate to call.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

AETL

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

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Tel: 818-998-5547 FAX: 818-998-7258

93058

A.A. COC No.: 70051689

Page 1 of 1

Client: AMERICAN ANALYTICS	Project Name / No.: A94898/8F20019	Sampler's Name:	
Project Manager: Viorel Vasile	Site Address:	Sampler's Signature:	
Phone:	City:	P.O. No.: SUB03582-A94898	
Fax:	State & Zip:	Quote No.:	

TAT Turnaround Codes **

(1) = Same Day Rush
(2) = 24 Hour Rush
(3) = 48 Hour Rush
(4) = 72 Hour Rush
(5) = 5 Day Rush
X = 10 Working Days (Standard TAT)

ANALYSIS REQUESTED (Test Name)

Please enter the TAT Turnaround Codes ** below

Client I.D.	A.A. I.D.	Date	Time	Sample Matrix	No. of Cont	Hexavalent Cr										Special Instructions
8F20019-08	93058-01	6/20/18	1100	SOIL	1	X										by EPA 8151A
-20	93058.02	-"-	1415	-"-	1	X										48-Hr Rush

For Laboratory Use	Relinquished by	Date	Time	Received by
	Relinquished by	06/22/18	0950	Received by: Jean Claude
A.A. Project No.:	Relinquished by	Date	Time	Received by

Note: By relinquishing samples to American Analytics, client agrees to pay for the services requested on this chain of custody form and any additional client-requested analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 45 days following the submittal of the sample(s) to American Analytics.

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COOLER RECEIPT FORM

Client Name: American Analytical
Project Name:
AETL Job Number: 93058
Date Received: 06/22/18 Received by: Jean Claude
Carrier: ☐ AETL Courier ☒ Client ☐ GSO ☐ FedEx ☐ UPS
☐ Others:

Samples were received in: ☒ Cooler (1) ☐ Other (Specify):
Inside temperature of shipping container No 1: 3.3°C, No 2: _____, No 3: _____
Type of sample containers: ☐ VOA, ☐ Glass bottles, ☒ Wide mouth jars, ☐ HDPE bottles, ☐ Metal sleeves, ☐ Others (Specify):
How are samples preserved: ☐ None, ☐ Ice, ☒ Blue Ice, ☐ Dry Ice
X None, _ HNO_3, _ NaOH, _ ZnOAc, _ HCl, _ $Na_2S_2O_3$, _ MeOH
_ Other (Specify):

	Yes	No, explain below	Name, if client was notified.
1. Are the COCs Correct?	X		
2. Are the Sample labels legible?	X		
3. Do samples match the COC?	X		
4. Are the required analyses clear?	X		
5. Is there enough samples for required analysis?	X		
6. Are samples sealed with evidence tape?	NA		
7. Are sample containers in good condition?	X		
8. Are samples preserved?	X		
9. Are samples preserved properly for the intended analysis?	X		
10. Are the VOAs free of headspace?	NA		
11. Are the jars free of headspace?	↓		

Explain all "No" answers for above questions:

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Ordered By

American Analytics
9765 Eton Avenue
Chatsworth, CA 91311-4306

Project ID: A94898/8F20019
Date Received 06/22/2018
Date Reported 06/25/2018

Telephone: (818)998-5547
Attention: Viorel Vasile

Job Number	Order Date	Client
93058	06/22/2018	AA

CERTIFICATE OF ANALYSIS
CASE NARRATIVE

AETL received 2 samples with the following specification on 06/22/2018.

Lab ID	Sample ID	Sample Date	Matrix	Quantity Of Containers
93058.01	8F20019-08	06/20/2018	Soil	1
93058.02	8F20019-20	06/20/2018	Soil	1

Method ^ Submethod	Req Date	Priority	TAT	Units
(8151A)	06/25/2018	3	Rush	ug/Kg

The samples were analyzed as specified on the enclosed chain of custody.
No analytical non-conformances were encountered.

Unless otherwise noted, all results of soil and solid samples are based on wet weight.

Checked By: _____ Approved By: C. Razmara

Cyrus Razmara, Ph.D.
Laboratory Director

American Environmental Testing Laboratory Inc.
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ANALYTICAL RESULTS

Ordered By

American Analytics
9765 Eton Avenue
Chatsworth, CA 91311-4306

Telephone: (818)998-5547
Attn: Viorel Vasile
Page: **2**

Project ID: A94898/8F20019
Project Name: PO# SUB03582-A94898

AETL Job Number	Submitted	Client
93058	06/22/2018	AA

Method: (8151A), Chlorinated Herbicides by GC/ECD

QC Batch No: 062518MB1

Our Lab I.D.			Method Blank	**93058.01**	**93058.02**		
Client Sample I.D.				8F20019-08	8F20019-20		
Date Sampled				**06/20/2018**	**06/20/2018**		
Date Prepared			**06/25/2018**	**06/25/2018**	**06/25/2018**		
Preparation Method			**3550B**	**3550B**	**3550B**		
Date Analyzed			**06/25/2018**	**06/25/2018**	**06/25/2018**		
Matrix			Soil	Soil	Soil		
Units			ug/Kg	ug/Kg	ug/Kg		
Dilution Factor			1	1	1		
Analytes	**MDL**	**PQL**	**Results**	**Results**	**Results**		
Acifluorfen	**20**	**20**	**ND**	**ND**	**ND**		
Bentazon	**10**	**10**	**ND**	**ND**	**ND**		
Chloramben	**10**	**10**	**ND**	**ND**	**ND**		
2,4-D	**10**	**10**	**ND**	**ND**	**ND**		
Dalapon	**20**	**20**	**ND**	**ND**	**ND**		
2,4-DB	**10**	**10**	**ND**	**ND**	**ND**		
DCPA diacid	**20**	**20**	**ND**	**ND**	**ND**		
Dicamba	**10**	**10**	**ND**	**ND**	**ND**		
3,5-Dichlorobenzoic acid	**10**	**10**	**ND**	**ND**	**ND**		
Dichloroprop	**10**	**10**	**ND**	**ND**	**ND**		
Dinoseb (DNBP, 2-sec-Butyl-4, 6-dinitrophenol)	**20**	**20**	**ND**	**ND**	**ND**		
MCPA	**2000**	**2000**	**ND**	**ND**	**ND**		
MCPP	**2000**	**2000**	**ND**	**ND**	**ND**		
4-Nitrophenol	**10**	**10**	**ND**	**ND**	**ND**		
Pentachlorophenol (PCP)	**10**	**10**	**ND**	**ND**	**ND**		
Picloram	**10**	**10**	**ND**	**ND**	**ND**		
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)	**10**	**10**	**ND**	**ND**	**ND**		
2,4,5-TP	**10**	**10**	**ND**	**ND**	**ND**		
Our Lab I.D.			Method Blank	**93058.01**	**93058.02**		
Surrogates	**%Rec.Limit**		**% Rec.**	**% Rec.**	**% Rec.**		
DCAA	**40-150**		**47.8**	**49.0**	**71.0**		

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QUALITY CONTROL RESULTS

Ordered By

American Analytics
9765 Eton Avenue
Chatsworth, CA 91311-4306

Telephone: (818)998-5547
Attn: Viorel Vasile
Page: **3**

Project ID: A94898/8F20019
Project Name: PO# SUB03582-A94898

AETL Job Number	Submitted	Client
93058	06/22/2018	AA

Method: (8151A), Chlorinated Herbicides by GC/ECD

QC Batch No: 062518MB1; Dup or Spiked Sample: 93022.01; LCS: Clean Sand; QC Prepared: 06/25/2018; QC Analyzed: 06/25/2018; Units: ug/Kg

Analytes	Sample Result	MS Concen	MS Recov	MS % REC	MS DUP Concen	MS DUP Recov	MS DUP % REC	RPD %	MS/MSD % Limit	MS RPD % Limit
2,4-D	0.00	25.0	12.8	51.2	25.0	11.0	44.0	15.1	40-140	<40
Dinoseb (DNBP, 2-sec-Butyl-4, 6-dinitrophenol)	0.00	25.0	19.2	76.8	25.0	16.4	65.6	15.7	40-140	<40
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)	0.00	25.0	10.2	40.8	25.0	13.0	52.0	24.1	40-140	<40
Surrogates										
DCAA	0.00	50.0	30.1	60.2	50.0	21.5	43.0	33.3	40-140	<40

QC Batch No: 062518MB1; Dup or Spiked Sample: 93022.01; LCS: Clean Sand; QC Prepared: 06/25/2018; QC Analyzed: 06/25/2018; Units: ug/Kg

Analytes	LCS Concen	LCS Recov	LCS % REC	LCS DUP Concen	LCS DUP Recov	LCS DUP % REC	LCS RPD % REC	LCS/LCSD % Limit	LCS RPD % Limit	
2,4-D	25.0	24.4	97.6	25.0	18.2	72.8	29.1	50-140	<40	
Dinoseb (DNBP, 2-sec-Butyl-4, 6-dinitrophenol)	25.0	19.4	77.6	25.0	19.9	79.6	2.5	50-140	<40	
2,4,5-T (2,4,5-Trichlorophenoxyacetic acid)	25.0	19.4	77.6	25.0	19.3	77.2	<1	50-140	<40	
LCS										
Dalapon	25.0	32.5	130	25.0	32.0	128	1.6	50-140	<40	
2,4-DB	25.0	23.5	94.0	25.0	15.7	62.8	39.8	50-140	<40	
Dicamba	25.0	20.5	82.0	25.0	21.8	87.2	6.1	50-140	<40	
Dichloroprop	25.0	14.6	58.4	25.0	20.3	81.2	32.7	50-140	<40	
MCPA	2,500	2,190	87.4	2,500	2,260	90.4	3.4	50-140	<40	
MCPP	2,500	2,270	90.7	2,500	2,350	93.9	3.5	50-140	<40	
2,4,5-TP	25.0	20.9	83.6	25.0	21.7	86.8	3.8	50-140	<40	
Surrogates										
DCAA	50.0	37.9	75.8	50.0	34.9	69.8	8.2	50-140	<40	

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Data Qualifiers and Descriptors

Data Qualifier:

#:	Recovery is not within acceptable control limits.
*:	In the QC section, sample results have been taken directly from the ICP reading. No preparation factor has been applied.
B:	Analyte was present in the Method Blank.
D:	Result is from a diluted analysis.
E:	Result is beyond calibration limits and is estimated.
H:	Analysis was performed over the allowed holding time due to circumstances which were beyond laboratory control.
J:	Analyte was detected . However, the analyte concentration is an estimated value, which is between the Method Detection Limit (MDL) and the Practical Quantitation Limit (PQL).
M:	Matrix spike recovery is outside control limits due to matrix interference. Laboratory Control Sample recovery was acceptable.
MCL:	Maximum Contaminant Level
NS:	No Standard Available
S6:	Surrogate recovery is outside control limits due to matrix interference.
S8:	The analysis of the sample required a dilution such that the surrogate concentration was diluted below the method acceptance criteria.
X:	Results represent LCS and LCSD data.

Definition:

%Limi:	Percent acceptable limits.
%REC:	Percent recovery.
Con.L:	Acceptable Control Limits
Conce:	Added concentration to the sample.
LCS:	Laboratory Control Sample
MDL:	Method Detection Limit is a statistically derived number which is specific for each instrument, each method, and each compound. It indicates a distinctively detectable quantity with 99% probability.

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Data Qualifiers and Descriptors

MS:	Matrix Spike
MS DU:	Matrix Spike Duplicate
ND:	Analyte was not detected in the sample at or above MDL.
PQL:	Practical Quantitation Limit or ML (Minimum Level as per RWQCB) is the minimum concentration that can be quantified with more than 99% confidence. Taking into account all aspects of the entire analytical instrumentation and practice.
Recov:	Recovered concentration in the sample.
RPD:	Relative Percent Difference

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311
Tel: 818-998-5547 FAX: 818-998-7258

A.A. COC No.: 1583
70051779
Page 1 of 2

Client: AECOM	Project Name / No.: 128 Hurricane St., Marina Del Ray 60558849	Sampler's Name: A. Vigna
Project Manager: Kalena Johnson	Site Address:	Sampler's Signature:
Phone:	City:	P.O. No.:
Fax:	State & Zip:	Quote No.:

TAT Turnaround Codes **

(1) = Same Day Rush
(2) = 24 Hour Rush
(3) = 48 Hour Rush
(4) = 72 Hour Rush
(5) = 5 Day Rush
X = 10 Working Days (Standard TAT)

* → (3)

ANALYSIS REQUESTED (Test Name)

Please enter the TAT Turnaround Codes ** below

Client I.D.	A.A. I.D.	Date	Time	Sample Matrix	No. of Cont	TPH (418.1)	TPH cc (8015m)	Metals (6010)	VOCs (8260B 5035)	OCPs/PCBs (8081A)	Herbicides (8151A)	SVOCs (8270C)	OCPs	Lab	Hold
SB-4-0.5	8F20019-01	6/20/18	0900	Soil	3	X	X	X							
SB-4-1	-02		0905		4	X	X		X						
SB-4-2.5	-03		0912		6										X
SB-4-3.5	-04		0918		5	X	X	X	X			X			
SB-4-5	-05		0930		5		X	X	X			X			
SB-4-10	-06		1002		5		X	X	X						
SB-4-15	-07		1020		4		X		X						
SB-6-6.5	-08		1100		3		X	X		X	X				
SB-6-1	-09		1105		4	X	X		X						
SB-6-2.5	-10		1120		3		X	X							
SB-6-5	-11		1130		6		X		X						
SB-5-0.5	-12		1140		1			X							
SB-5-1	-13		1150		4			X	X						
SB-5-2.5	-14		1200		1			X							
SB-5-5	-15		1225		5		X	X	X						

Special Instructions
* : 48-hr Rush
6/22/18 48-hr Rush
Cl reported by Kena 6/24/18

For Laboratory Use

REVIEWED
Date 8/21/18 Time 0630
TAT N Days Sign:

A.A. Project No.: A948098 / 8F20019

	Date	Time	
Relinquished by	6/20/18	1615	Received by
Relinquished by	6-20-18	622	Received by
Relinquished by	Date	Time	Received by

Note: By relinquishing samples to American Analytics, client agrees to pay for the services requested on this chain of custody form and any additional client-requested analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 45 days following the submittal of the sample(s) to American Analytics.

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

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A.A. COC No.: 15832
70051780
Page 2 of 2

Client: AECOM | Project Name / No.: 128 Hurricane St, Marina Del Rey 60553849 | Sampler's Name: A. Vigna
Project Manager: Kaleena Johnson | Site Address: | Sampler's Signature:
Phone: | City: | P.O. No.:
Fax: | State & Zip: | Quote No.:

TAT Turnaround Codes **

(1) = Same Day Rush
(2) = 24 Hour Rush
(3) = 48 Hour Rush
(4) = 72 Hour Rush
(5) = 5 Day Rush
X = 10 Working Days (Standard TAT)

ANALYSIS REQUESTED (Test Name)

Please enter the TAT Turnaround Codes ** below

Client I.D.	A.A. I.D.	Date	Time	Sample Matrix	No. of Cont	TPH (HFT)	TPHcc (8015M)	Metals (6010B)	VOCs (8260B 5035)	oPCBs/PCBs (8082A)	Herbicides (8151A)	Metals (6020A 7000)	VOCs (8260B)	OCPs	Lead	Special Instructions
SB-3-0.5	8F20019-16	6/20/18	1330	Soil	1			X						⊙		
SB-3-1	-17		1340		4	X	⊗		X							
SB-3-2.5	-18		1350		1		⊙	X								
SB-3-5	-19		1400		5		X		X						⊙	
SB-1-0.5	-20		1415		3		X	X		X	X					
SB-1-1	-21		1430		4	X	⊗		⊗							TPHcc and VOCs
SB-1-2.5	-22		1445		3		X	X								
SB-2-0.5	-23		1455		2		X	X								
SB-2-1	-24	↓	1500	↓	4	X	⊗		X							
TB-062018	-25	6/20/18	0800	Water								X				
SB-4	-26	6/20/18	1520	Water	5		X					X	X			
SB-1-1DUP	-27	↓	1500	Soil	4	X	⊗		X							
SB-3-5DUP	-28	↓	1400	Soil	5		X		X							

For Laboratory Use

REVIEWED
Date 8/21/18 Time 0630
TAT N Days Sign:

A.A. Project No.: A94898 / 8F20019

	Relinquished by	Date	Time	Received by
1		6/20/18	1615	
2		6-20-18	622	
3				

Note: By relinquishing samples to American Analytics, client agrees to pay for the services requested on this chain of custody form and any additional client-requested analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 45 days following the submittal of the sample(s) to American Analytics.

AMERICAN ANALYTICS

9765 Eton Avenue
Chatsworth
California 91311
Tel: (818) 998-5547
Fax: (818) 998-7258

June 26, 2018

Kaleena Johnson

AECOM (LA)

300 S. Grand Ave., Suite 800

Los Angeles, CA 90017

Re : 128 Hurricane - Soil & GW

A94899 / 8F21005

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received on 06/21/18 14:03 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Program Manual, applicable standard operating procedures, and other related documentation. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report or require additional information please call me at American Analytics.

Sincerely,



Viorel Vasile

Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94899
Date Received: 06/21/18
Date Reported: 06/26/18

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
8260B+OXYGENATES					
EB-062018	8F21005-06	Water	2	06/20/18 16:30	06/21/18 14:03
CAM Metals Less Hg 6000/7000					
TP-1-1.5	8F21005-01	Soil	2	06/21/18 09:10	06/21/18 14:03
TP-1-2.5	8F21005-02	Soil	2	06/21/18 09:20	06/21/18 14:03
TP-2-0.5	8F21005-03	Soil	2	06/21/18 10:10	06/21/18 14:03
TP-2-2.5	8F21005-04	Soil	2	06/21/18 10:20	06/21/18 14:03
TP-2-2.5 DUP	8F21005-05	Soil	2	06/21/18 10:20	06/21/18 14:03
Carbon Chain Characterization 8015M					
TP-1-1.5	8F21005-01	Soil	2	06/21/18 09:10	06/21/18 14:03
TP-1-2.5	8F21005-02	Soil	2	06/21/18 09:20	06/21/18 14:03
TP-2-0.5	8F21005-03	Soil	2	06/21/18 10:10	06/21/18 14:03
TP-2-2.5	8F21005-04	Soil	2	06/21/18 10:20	06/21/18 14:03
TP-2-2.5 DUP	8F21005-05	Soil	2	06/21/18 10:20	06/21/18 14:03
EB-062018	8F21005-06	Water	2	06/20/18 16:30	06/21/18 14:03
Mercury Total EPA 7470A/7471A					
TP-1-1.5	8F21005-01	Soil	2	06/21/18 09:10	06/21/18 14:03
TP-1-2.5	8F21005-02	Soil	2	06/21/18 09:20	06/21/18 14:03

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Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94899
Date Received: 06/21/18
Date Reported: 06/26/18

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
TP-2-0.5	8F21005-03	Soil	2	06/21/18 10:10	06/21/18 14:03
TP-2-2.5	8F21005-04	Soil	2	06/21/18 10:20	06/21/18 14:03
TP-2-2.5 DUP	8F21005-05	Soil	2	06/21/18 10:20	06/21/18 14:03
EB-062018	8F21005-06	Water	2	06/20/18 16:30	06/21/18 14:03
Metals Total 6020B					
EB-062018	8F21005-06	Water	2	06/20/18 16:30	06/21/18 14:03

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LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Carbon Chain by GC/FID

AA Project No: A94899
Date Received: 06/21/18
Date Reported: 06/26/18
Units: mg/kg

Date Sampled:	06/21/18	06/21/18	06/21/18	06/21/18	
Date Prepared:	06/25/18	06/25/18	06/25/18	06/25/18	
Date Analyzed:	06/25/18	06/25/18	06/25/18	06/25/18	
AA ID No:	8F21005-01	8F21005-02	8F21005-03	8F21005-04	
Client ID No:	TP-1-1.5	TP-1-2.5	TP-2-0.5	TP-2-2.5	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	10	5	5	MRL
Carbon Chain Characterization 8015M (EPA 8015M)					
C6-C8	<1.0	<10	<5.0	<5.0	1.0
C8-C10	<1.0	<10	<5.0	<5.0	1.0
C10-C12	<1.0	<10	<5.0	<5.0	1.0
C12-C14	<1.0	<10	<5.0	<5.0	1.0
C14-C16	<1.0	**21**	<5.0	<5.0	1.0
C16-C18	<1.0	**99**	<5.0	<5.0	1.0
C18-C20	**2.7**	**160**	<5.0	<5.0	1.0
C20-C22	**5.9**	**230**	<5.0	<5.0	1.0
C22-C24	**12**	**360**	<5.0	<5.0	1.0
C24-C26	**4.1**	**420**	<5.0	<5.0	1.0
C26-C28	**34**	**590**	<5.0	<5.0	1.0
C28-C32	**75**	**1400**	<5.0	**7.9**	1.0
C32-C34	**21**	**510**	<5.0	<5.0	1.0
C34-C36	**22**	**310**	<5.0	<5.0	1.0
C36-C40	**33**	**520**	<5.0	<5.0	1.0
C40-C44	**29**	**350**	<5.0	<5.0	1.0
TPH (C6-C44)	**240**	**5000**	<50	<50	10
Gasoline Range Organics (C6-C10)	<5.0	<50	<25	<25	5.0
Diesel Range Organics (C10-C23)	**14**	**690**	<25	<25	5.0
Oil Range Organics (C23-C44)	**220**	**4300**	<25	<25	5.0
Surrogates					**%REC Limits**
o-Terphenyl	90%	65%	85%	92%	50-150

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Operations Manager

LABORATORY ANALYSIS RESULTS

Client:	AECOM (LA)	**AA Project No:**	A94899
Project No:	NA	**Date Received:**	06/21/18
Project Name:	128 Hurricane - Soil & GW	**Date Reported:**	06/26/18
Method:	Carbon Chain by GC/FID	**Units:**	mg/kg

Date Sampled:	06/21/18	
Date Prepared:	06/25/18	
Date Analyzed:	06/25/18	
AA ID No:	8F21005-05	
Client ID No:	TP-2-2.5 DUP	
Matrix:	Soil	
Dilution Factor:	5	MRL

Carbon Chain Characterization 8015M (EPA 8015M)

C6-C8	<5.0	1.0
C8-C10	<5.0	1.0
C10-C12	<5.0	1.0
C12-C14	<5.0	1.0
C14-C16	<5.0	1.0
C16-C18	<5.0	1.0
C18-C20	<5.0	1.0
C20-C22	<5.0	1.0
C22-C24	<5.0	1.0
C24-C26	<5.0	1.0
C26-C28	<5.0	1.0
C28-C32	<5.0	1.0
C32-C34	<5.0	1.0
C34-C36	<5.0	1.0
C36-C40	<5.0	1.0
C40-C44	<5.0	1.0
TPH (C6-C44)	<50	10
Gasoline Range Organics (C6-C10)	<25	5.0
Diesel Range Organics (C10-C23)	<25	5.0
Oil Range Organics (C23-C44)	<25	5.0

Surrogates		**%REC Limits**
o-Terphenyl	88%	50-150

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Operations Manager

LABORATORY ANALYSIS RESULTS

Client:	AECOM (LA)	**AA Project No:**	A94899
Project No:	NA	**Date Received:**	06/21/18
Project Name:	128 Hurricane - Soil & GW	**Date Reported:**	06/26/18
Method:	Carbon Chain by GC/FID	**Units:**	mg/L

Date Sampled:	06/20/18	
Date Prepared:	06/25/18	
Date Analyzed:	06/25/18	
AA ID No:	8F21005-06	
Client ID No:	EB-062018	
Matrix:	Water	
Dilution Factor:	1	MRL

Carbon Chain Characterization 8015M (EPA 8015M)

C6-C8	<0.010	0.010
C8-C10	<0.010	0.010
C10-C12	<0.010	0.010
C12-C14	<0.010	0.010
C14-C16	<0.010	0.010
C16-C18	<0.010	0.010
C18-C20	<0.010	0.010
C20-C22	<0.010	0.010
C22-C24	<0.010	0.010
C24-C26	<0.010	0.010
C26-C28	<0.010	0.010
C28-C32	<0.010	0.010
C32-C34	<0.010	0.010
C34-C36	<0.010	0.010
C36-C40	<0.010	0.010
C40-C44	<0.010	0.010
TPH (C6-C44)	<0.10	0.10
Gasoline Range Organics (C6-C10)	<0.10	0.10
Diesel Range Organics (C10-C23)	<0.10	0.10
Oil Range Organics (C23-C44)	<0.10	0.10

Surrogates		**%REC Limits**
o-Terphenyl	82%	50-150

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Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Total Metals CAM 17

AA Project No: A94899
Date Received: 06/21/18
Date Reported: 06/26/18
Units: mg/kg

Date Sampled:	06/21/18	06/21/18	06/21/18	06/21/18	
Date Prepared:	06/25/18	06/25/18	06/25/18	06/25/18	
Date Analyzed:	06/25/18	06/25/18	06/25/18	06/25/18	
AA ID No:	8F21005-01	8F21005-02	8F21005-03	8F21005-04	
Client ID No:	TP-1-1.5	TP-1-2.5	TP-2-0.5	TP-2-2.5	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL
Mercury Total EPA 7470A/7471A (EPA 7471A)					
Mercury	**0.079**	**0.078**	**0.36**	**0.027**	0.020

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Operations Manager

LABORATORY ANALYSIS RESULTS

Client:	AECOM (LA)	**AA Project No:**	A94899
Project No:	NA	**Date Received:**	06/21/18
Project Name:	128 Hurricane - Soil & GW	**Date Reported:**	06/26/18
Method:	Total Metals CAM 17	**Units:**	mg/kg

Date Sampled:	06/21/18	
Date Prepared:	06/25/18	
Date Analyzed:	06/25/18	
AA ID No:	8F21005-05	
Client ID No:	TP-2-2.5 DUP	
Matrix:	Soil	
Dilution Factor:	1	MRL
Mercury Total EPA 7470A/7471A (EPA 7471A)		
Mercury	**0.022**	0.020

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LABORATORY ANALYSIS RESULTS

Client:	AECOM (LA)	**AA Project No:**	A94899
Project No:	NA	**Date Received:**	06/21/18
Project Name:	128 Hurricane - Soil & GW	**Date Reported:**	06/26/18
Method:	Total Metals by ICP/MS EPA 6020B	**Units:**	ug/L

Date Sampled:	06/20/18	
Date Prepared:	06/22/18	
Date Analyzed:	06/25/18	
AA ID No:	8F21005-06	
Client ID No:	EB-062018	
Matrix:	Water	
Dilution Factor:	1	MRL

Metals Total 6020B (EPA 6020B)

Antimony	<5.0	5.0
Arsenic	<5.0	5.0
Barium	<5.0	5.0
Beryllium	<5.0	5.0
Cadmium	<5.0	5.0
Chromium	<5.0	5.0
Cobalt	<5.0	5.0
Copper	<5.0	5.0
Lead	<5.0	5.0
Molybdenum	<5.0	5.0
Nickel	<5.0	5.0
Selenium	<20	20
Silver	<5.0	5.0
Thallium	<5.0	5.0
Vanadium	<20	20
Zinc	<20	20

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Operations Manager

LABORATORY ANALYSIS RESULTS

Client:	AECOM (LA)	**AA Project No:**	A94899
Project No:	NA	**Date Received:**	06/21/18
Project Name:	128 Hurricane - Soil & GW	**Date Reported:**	06/26/18
Method:	Total Metals CAM 17	**Units:**	mg/L

Date Sampled:	06/20/18	
Date Prepared:	06/22/18	
Date Analyzed:	06/22/18	
AA ID No:	8F21005-06	
Client ID No:	EB-062018	
Matrix:	Water	
Dilution Factor:	1	MRL

Mercury Total EPA 7470A/7471A (EPA 7470A)

Mercury	<0.00050	0.00050

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LABORATORY ANALYSIS RESULTS

Client:	AECOM (LA)	**AA Project No:**	A94899
Project No:	NA	**Date Received:**	06/21/18
Project Name:	128 Hurricane - Soil & GW	**Date Reported:**	06/26/18
Method:	Total Metals CAM 17	**Units:**	mg/kg

Date Sampled:	06/21/18	06/21/18	06/21/18	06/21/18	
Date Prepared:	06/22/18	06/22/18	06/22/18	06/22/18	
Date Analyzed:	06/25/18	06/25/18	06/25/18	06/25/18	
AA ID No:	8F21005-01	8F21005-02	8F21005-03	8F21005-04	
Client ID No:	TP-1-1.5	TP-1-2.5	TP-2-0.5	TP-2-2.5	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL
CAM Metals Less Hg 6000/7000 (EPA 6010B/7000)					
Antimony	<10	<10	<10	<10	10
Arsenic	**2.8**	**4.3**	**4.3**	**2.4**	0.50
Barium	**42**	**81**	**57**	**35**	10
Beryllium	<1.0	<1.0	<1.0	<1.0	1.0
Cadmium	<1.0	<1.0	<1.0	<1.0	1.0
Chromium	**12**	**15**	**12**	**11**	3.0
Cobalt	**3.6**	**5.4**	**3.8**	<3.0	3.0
Copper	**3.1**	**11**	**3.8**	<3.0	3.0
Lead	**28**	**130**	**5.2**	**4.5**	3.0
Molybdenum	<5.0	<5.0	<5.0	<5.0	5.0
Nickel	**10**	**26**	**8.5**	**8.8**	3.0
Selenium	<0.50	<0.50	<0.50	<0.50	0.50
Silver	<1.0	<1.0	<1.0	<1.0	1.0
Thallium	<5.0	<5.0	<5.0	<5.0	5.0
Vanadium	**26**	**51**	**25**	**21**	10
Zinc	**57**	**160**	**20**	**18**	3.0

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Operations Manager

LABORATORY ANALYSIS RESULTS

Client:	AECOM (LA)	**AA Project No:**	A94899
Project No:	NA	**Date Received:**	06/21/18
Project Name:	128 Hurricane - Soil & GW	**Date Reported:**	06/26/18
Method:	Total Metals CAM 17	**Units:**	mg/kg

Date Sampled:	06/21/18	
Date Prepared:	06/22/18	
Date Analyzed:	06/25/18	
AA ID No:	8F21005-05	
Client ID No:	TP-2-2.5 DUP	
Matrix:	Soil	
Dilution Factor:	1	MRL

CAM Metals Less Hg 6000/7000 (EPA 6010B/7000)

Antimony	<10	10
Arsenic	**2.2**	0.50
Barium	**51**	10
Beryllium	<1.0	1.0
Cadmium	<1.0	1.0
Chromium	**16**	3.0
Cobalt	**4.4**	3.0
Copper	**3.4**	3.0
Lead	<3.0	3.0
Molybdenum	<5.0	5.0
Nickel	**13**	3.0
Selenium	<0.50	0.50
Silver	<1.0	1.0
Thallium	<5.0	5.0
Vanadium	**30**	10
Zinc	**23**	3.0

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Operations Manager

LABORATORY ANALYSIS RESULTS

Client:	AECOM (LA)	**AA Project No:**	A94899
Project No:	NA	**Date Received:**	06/21/18
Project Name:	128 Hurricane - Soil & GW	**Date Reported:**	06/26/18
Method:	VOCs & OXYGENATES by GC/MS	**Units:**	ug/L

Date Sampled:	06/20/18	
Date Prepared:	06/22/18	
Date Analyzed:	06/22/18	
AA ID No:	8F21005-06	
Client ID No:	EB-062018	
Matrix:	Water	
Dilution Factor:	1	MRL

8260B+OXYGENATES (EPA 8260B)

Acetone	<10	10
tert-Amyl Methyl Ether (TAME)	<2.0	2.0
Benzene	<0.50	0.50
Bromobenzene	<0.50	0.50
Bromochloromethane	<0.50	0.50
Bromodichloromethane	<0.50	0.50
Bromoform	<0.50	0.50
Bromomethane	<0.50	0.50
2-Butanone (MEK)	<10	10
tert-Butyl alcohol (TBA)	<10	10
sec-Butylbenzene	<0.50	0.50
tert-Butylbenzene	<0.50	0.50
n-Butylbenzene	<0.50	0.50
Carbon Disulfide	<0.50	0.50
Carbon Tetrachloride	<0.50	0.50
Chlorobenzene	<0.50	0.50
Chloroethane	<0.50	0.50
Chloroform	<0.50	0.50
Chloromethane	<0.50	0.50
2-Chlorotoluene	<0.50	0.50
4-Chlorotoluene	<0.50	0.50
1,2-Dibromo-3-chloropropane	<1.0	1.0
Dibromochloromethane	<0.50	0.50
1,2-Dibromoethane (EDB)	<0.50	0.50
Dibromomethane	<0.50	0.50
1,3-Dichlorobenzene	<0.50	0.50
1,2-Dichlorobenzene	<0.50	0.50

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Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: VOCs & OXYGENATES by GC/MS

AA Project No: A94899
Date Received: 06/21/18
Date Reported: 06/26/18
Units: ug/L

Date Sampled:	06/20/18	
Date Prepared:	06/22/18	
Date Analyzed:	06/22/18	
AA ID No:	8F21005-06	
Client ID No:	EB-062018	
Matrix:	Water	
Dilution Factor:	1	MRL

8260B+OXYGENATES (EPA 8260B) (continued)

1,4-Dichlorobenzene	<0.50	0.50
Dichlorodifluoromethane (R12)	<0.50	0.50
1,1-Dichloroethane	<0.50	0.50
1,2-Dichloroethane (EDC)	<0.50	0.50
1,1-Dichloroethylene	<0.50	0.50
trans-1,2-Dichloroethylene	<0.50	0.50
cis-1,2-Dichloroethylene	<0.50	0.50
1,2-Dichloropropane	<0.50	0.50
2,2-Dichloropropane	<0.50	0.50
1,3-Dichloropropane	<0.50	0.50
cis-1,3-Dichloropropylene	<0.50	0.50
trans-1,3-Dichloropropylene	<0.50	0.50
1,1-Dichloropropylene	<0.50	0.50
Diisopropyl ether (DIPE)	<2.0	2.0
Ethylbenzene	<0.50	0.50
Ethyl-tert-Butyl Ether (ETBE)	<2.0	2.0
Hexachlorobutadiene	<1.0	1.0
2-Hexanone (MBK)	<10	10
Isopropylbenzene	<0.50	0.50
4-Isopropyltoluene	<1.0	1.0
Methyl-tert-Butyl Ether (MTBE)	<2.0	2.0
Methylene Chloride	<5.0	5.0
4-Methyl-2-pentanone (MIBK)	<10	10
Naphthalene	<2.0	2.0
n-Propylbenzene	<0.50	0.50
Styrene	<0.50	0.50
1,1,1,2-Tetrachloroethane	<0.50	0.50

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Operations Manager

LABORATORY ANALYSIS RESULTS

Client:	AECOM (LA)	**AA Project No:**	A94899
Project No:	NA	**Date Received:**	06/21/18
Project Name:	128 Hurricane - Soil & GW	**Date Reported:**	06/26/18
Method:	VOCs & OXYGENATES by GC/MS	**Units:**	ug/L

Date Sampled:	06/20/18	
Date Prepared:	06/22/18	
Date Analyzed:	06/22/18	
AA ID No:	8F21005-06	
Client ID No:	EB-062018	
Matrix:	Water	
Dilution Factor:	1	MRL

8260B+OXYGENATES (EPA 8260B) (continued)

1,1,2,2-Tetrachloroethane	<0.50	0.50
Tetrachloroethylene (PCE)	<0.50	0.50
Toluene	<0.50	0.50
1,2,3-Trichlorobenzene	<0.50	0.50
1,2,4-Trichlorobenzene	<0.50	0.50
1,1,1-Trichloroethane	<0.50	0.50
1,1,2-Trichloroethane	<0.50	0.50
Trichloroethylene (TCE)	<0.50	0.50
Trichlorofluoromethane (R11)	<0.50	0.50
1,2,3-Trichloropropane	<0.50	0.50
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.50	0.50
1,3,5-Trimethylbenzene	<0.50	0.50
1,2,4-Trimethylbenzene	<0.50	0.50
Vinyl chloride	<0.50	0.50
o-Xylene	<0.50	0.50
m,p-Xylenes	<1.0	1.0

Surrogates		**%REC Limits**
4-Bromofluorobenzene	103%	70-140
Dibromofluoromethane	129%	70-140
Toluene-d8	104%	70-140

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Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94899
Date Received: 06/21/18
Date Reported: 06/26/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2214 - EPA 5030B										
Blank (B8F2214-BLK1)				Prepared & Analyzed: 06/22/18						
Acetone	<10	10	ug/L							
tert-Amyl Methyl Ether (TAME)	<2.0	2.0	ug/L							
Benzene	<0.50	0.50	ug/L							
Bromobenzene	<0.50	0.50	ug/L							
Bromochloromethane	<0.50	0.50	ug/L							
Bromodichloromethane	<0.50	0.50	ug/L							
Bromoform	<0.50	0.50	ug/L							
Bromomethane	<0.50	0.50	ug/L							
2-Butanone (MEK)	<10	10	ug/L							
tert-Butyl alcohol (TBA)	<10	10	ug/L							
sec-Butylbenzene	<0.50	0.50	ug/L							
tert-Butylbenzene	<0.50	0.50	ug/L							
n-Butylbenzene	<0.50	0.50	ug/L							
Carbon Disulfide	<0.50	0.50	ug/L							
Carbon Tetrachloride	<0.50	0.50	ug/L							
Chlorobenzene	<0.50	0.50	ug/L							
Chloroethane	<0.50	0.50	ug/L							
Chloroform	<0.50	0.50	ug/L							
Chloromethane	<0.50	0.50	ug/L							
2-Chlorotoluene	<0.50	0.50	ug/L							
4-Chlorotoluene	<0.50	0.50	ug/L							
1,2-Dibromo-3-chloropropane	<1.0	1.0	ug/L							
Dibromochloromethane	<0.50	0.50	ug/L							
1,2-Dibromoethane (EDB)	<0.50	0.50	ug/L							
Dibromomethane	<0.50	0.50	ug/L							
1,3-Dichlorobenzene	<0.50	0.50	ug/L							
1,2-Dichlorobenzene	<0.50	0.50	ug/L							
1,4-Dichlorobenzene	<0.50	0.50	ug/L							
Dichlorodifluoromethane (R12)	<0.50	0.50	ug/L							
1,1-Dichloroethane	<0.50	0.50	ug/L							
1,2-Dichloroethane (EDC)	<0.50	0.50	ug/L							



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94899
Date Received: 06/21/18
Date Reported: 06/26/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2214 - EPA 5030B										
Blank (B8F2214-BLK1) Continued				Prepared & Analyzed: 06/22/18						
1,1-Dichloroethylene	<0.50	0.50	ug/L							
trans-1,2-Dichloroethylene	<0.50	0.50	ug/L							
cis-1,2-Dichloroethylene	<0.50	0.50	ug/L							
1,2-Dichloropropane	<0.50	0.50	ug/L							
2,2-Dichloropropane	<0.50	0.50	ug/L							
1,3-Dichloropropane	<0.50	0.50	ug/L							
cis-1,3-Dichloropropylene	<0.50	0.50	ug/L							
trans-1,3-Dichloropropylene	<0.50	0.50	ug/L							
1,1-Dichloropropylene	<0.50	0.50	ug/L							
Diisopropyl ether (DIPE)	<2.0	2.0	ug/L							
Ethylbenzene	<0.50	0.50	ug/L							
Ethyl-tert-Butyl Ether (ETBE)	<2.0	2.0	ug/L							
Hexachlorobutadiene	<1.0	1.0	ug/L							
2-Hexanone (MBK)	<10	10	ug/L							
Isopropylbenzene	<0.50	0.50	ug/L							
4-Isopropyltoluene	<1.0	1.0	ug/L							
Methyl-tert-Butyl Ether (MTBE)	<2.0	2.0	ug/L							
Methylene Chloride	<5.0	5.0	ug/L							
4-Methyl-2-pentanone (MIBK)	<10	10	ug/L							
Naphthalene	<2.0	2.0	ug/L							
n-Propylbenzene	<0.50	0.50	ug/L							
Styrene	<0.50	0.50	ug/L							
1,1,1,2-Tetrachloroethane	<0.50	0.50	ug/L							
1,1,2,2-Tetrachloroethane	<0.50	0.50	ug/L							
Tetrachloroethylene (PCE)	<0.50	0.50	ug/L							
Toluene	<0.50	0.50	ug/L							
1,2,3-Trichlorobenzene	<0.50	0.50	ug/L							
1,2,4-Trichlorobenzene	<0.50	0.50	ug/L							
1,1,1-Trichloroethane	<0.50	0.50	ug/L							
1,1,2-Trichloroethane	<0.50	0.50	ug/L							
Trichloroethylene (TCE)	<0.50	0.50	ug/L							

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94899
Date Received: 06/21/18
Date Reported: 06/26/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2214 - EPA 5030B										
Blank (B8F2214-BLK1) Continued				Prepared & Analyzed: 06/22/18						
Trichlorofluoromethane (R11)	<0.50	0.50	ug/L							
1,2,3-Trichloropropane	<0.50	0.50	ug/L							
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<0.50	0.50	ug/L							
1,3,5-Trimethylbenzene	<0.50	0.50	ug/L							
1,2,4-Trimethylbenzene	<0.50	0.50	ug/L							
Vinyl chloride	<0.50	0.50	ug/L							
o-Xylene	<0.50	0.50	ug/L							
m,p-Xylenes	<1.0	1.0	ug/L							
Surrogate: 4-Bromofluorobenzene	*48.1*		*ug/L*	*50*		*96.3*	*70-140*			
Surrogate: Dibromofluoromethane	*60.2*		*ug/L*	*50*		*120*	*70-140*			
Surrogate: Toluene-d8	*50.8*		*ug/L*	*50*		*102*	*70-140*			
LCS (B8F2214-BS1)				Prepared & Analyzed: 06/22/18						
Acetone	**20.8**	10	ug/L	20		104	70-130			
tert-Amyl Methyl Ether (TAME)	**19.9**	2.0	ug/L	20		99.3	70-130			
Benzene	**19.5**	0.50	ug/L	20		97.5	75-125			
Bromobenzene	**21.3**	0.50	ug/L	20		106	70-130			
Bromochloromethane	**19.9**	0.50	ug/L	20		99.4	70-130			
Bromodichloromethane	**18.4**	0.50	ug/L	20		91.8	75-125			
Bromoform	**18.0**	0.50	ug/L	20		90.0	75-125			
Bromomethane	**21.1**	0.50	ug/L	20		106	75-125			
2-Butanone (MEK)	**23.4**	10	ug/L	20		117	70-130			
tert-Butyl alcohol (TBA)	**110**	10	ug/L	100		110	70-130			
sec-Butylbenzene	**18.5**	0.50	ug/L	20		92.7	70-130			
tert-Butylbenzene	**20.7**	0.50	ug/L	20		104	70-130			
n-Butylbenzene	**19.4**	0.50	ug/L	20		97.1	70-130			
Carbon Disulfide	**18.7**	0.50	ug/L	20		93.6	70-130			
Carbon Tetrachloride	**18.0**	0.50	ug/L	20		89.8	75-125			
Chlorobenzene	**19.8**	0.50	ug/L	20		98.8	75-125			
Chloroethane	**18.4**	0.50	ug/L	20		91.9	75-125			
Chloroform	**18.1**	0.50	ug/L	20		90.3	75-125			



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94899
Date Received: 06/21/18
Date Reported: 06/26/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2214 - EPA 5030B										
LCS (B8F2214-BS1) Continued				Prepared & Analyzed: 06/22/18						
Chloromethane	**18.0**	0.50	ug/L	20		90.2	65-125			
2-Chlorotoluene	**19.3**	0.50	ug/L	20		96.4	70-130			
4-Chlorotoluene	**19.4**	0.50	ug/L	20		97.0	70-130			
1,2-Dibromo-3-chloropropane	**23.8**	1.0	ug/L	20		119	70-130			
Dibromochloromethane	**19.0**	0.50	ug/L	20		95.0	75-125			
1,2-Dibromoethane (EDB)	**19.0**	0.50	ug/L	20		94.9	70-130			
Dibromomethane	**19.9**	0.50	ug/L	20		99.3	70-130			
1,3-Dichlorobenzene	**21.5**	0.50	ug/L	20		107	70-130			
1,2-Dichlorobenzene	**23.6**	0.50	ug/L	20		118	70-130			
1,4-Dichlorobenzene	**22.7**	0.50	ug/L	20		114	75-125			
Dichlorodifluoromethane (R12)	**19.4**	0.50	ug/L	20		97.0	70-130			
1,1-Dichloroethane	**19.1**	0.50	ug/L	20		95.5	70-125			
1,2-Dichloroethane (EDC)	**18.3**	0.50	ug/L	20		91.3	75-125			
1,1-Dichloroethylene	**16.3**	0.50	ug/L	20		81.7	70-130			
trans-1,2-Dichloroethylene	**18.5**	0.50	ug/L	20		92.4	75-125			
cis-1,2-Dichloroethylene	**17.7**	0.50	ug/L	20		88.4	75-125			
1,2-Dichloropropane	**18.7**	0.50	ug/L	20		93.3	75-130			
2,2-Dichloropropane	**16.8**	0.50	ug/L	20		84.2	70-130			
1,3-Dichloropropane	**20.7**	0.50	ug/L	20		103	70-130			
cis-1,3-Dichloropropylene	**19.5**	0.50	ug/L	20		97.6	75-125			
trans-1,3-Dichloropropylene	**19.4**	0.50	ug/L	20		96.8	70-130			
1,1-Dichloropropylene	**17.8**	0.50	ug/L	20		89.2	70-130			
Diisopropyl ether (DIPE)	**17.7**	2.0	ug/L	20		88.6	70-130			
Ethylbenzene	**19.1**	0.50	ug/L	20		95.4	75-125			
Ethyl-tert-Butyl Ether (ETBE)	**19.8**	2.0	ug/L	20		99.0	70-130			
Hexachlorobutadiene	**21.4**	1.0	ug/L	20		107	70-130			
2-Hexanone (MBK)	**20.0**	10	ug/L	20		100	70-130			
Isopropylbenzene	**18.8**	0.50	ug/L	20		94.2	70-130			
4-Isopropyltoluene	**20.5**	1.0	ug/L	20		103	70-130			
Methyl-tert-Butyl Ether (MTBE)	**43.1**	2.0	ug/L	40		108	75-125			
Methylene Chloride	**17.2**	5.0	ug/L	20		85.9	75-130			

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94899
Date Received: 06/21/18
Date Reported: 06/26/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2214 - EPA 5030B										
LCS (B8F2214-BS1) Continued				Prepared & Analyzed: 06/22/18						
4-Methyl-2-pentanone (MIBK)	**21.6**	10	ug/L	20		108	70-130			
Naphthalene	**25.9**	2.0	ug/L	20		130	70-130			
n-Propylbenzene	**19.0**	0.50	ug/L	20		94.8	70-130			
Styrene	**19.8**	0.50	ug/L	20		99.0	70-130			
1,1,1,2-Tetrachloroethane	**20.8**	0.50	ug/L	20		104	70-130			
1,1,2,2-Tetrachloroethane	**24.6**	0.50	ug/L	20		123	70-135			
Tetrachloroethylene (PCE)	**19.1**	0.50	ug/L	20		95.4	75-125			
Toluene	**18.9**	0.50	ug/L	20		94.4	75-125			
1,2,3-Trichlorobenzene	**24.4**	0.50	ug/L	20		122	70-130			
1,2,4-Trichlorobenzene	**24.0**	0.50	ug/L	20		120	70-130			
1,1,1-Trichloroethane	**17.8**	0.50	ug/L	20		88.8	75-125			
1,1,2-Trichloroethane	**21.5**	0.50	ug/L	20		108	75-125			
Trichloroethylene (TCE)	**18.8**	0.50	ug/L	20		93.8	75-125			
Trichlorofluoromethane (R11)	**19.8**	0.50	ug/L	20		98.8	70-130			
1,2,3-Trichloropropane	**23.5**	0.50	ug/L	20		118	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**17.2**	0.50	ug/L	20		86.2	70-130			
1,3,5-Trimethylbenzene	**18.9**	0.50	ug/L	20		94.6	70-130			
1,2,4-Trimethylbenzene	**18.8**	0.50	ug/L	20		94.0	70-130			
Vinyl chloride	**16.5**	0.50	ug/L	20		82.6	75-125			
o-Xylene	**19.4**	0.50	ug/L	20		96.8	75-125			
m,p-Xylenes	**38.3**	1.0	ug/L	40		95.7	70-130			
Surrogate: 4-Bromofluorobenzene	*47.6*		*ug/L*	*50*		*95.2*	*70-140*			
Surrogate: Dibromofluoromethane	*49.4*		*ug/L*	*50*		*98.8*	*70-140*			
Surrogate: Toluene-d8	*52.4*		*ug/L*	*50*		*105*	*70-140*			
LCS Dup (B8F2214-BSD1)				Prepared & Analyzed: 06/22/18						
Acetone	**19.8**	10	ug/L	20		98.8	70-130	5.22	30	
tert-Amyl Methyl Ether (TAME)	**18.8**	2.0	ug/L	20		94.2	70-130	5.27	30	
Benzene	**21.2**	0.50	ug/L	20		106	75-125	8.45	30	
Bromobenzene	**21.5**	0.50	ug/L	20		107	70-130	0.935	30	
Bromochloromethane	**22.0**	0.50	ug/L	20		110	70-130	10.2	30	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94899
Date Received: 06/21/18
Date Reported: 06/26/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2214 - EPA 5030B										
LCS Dup (B8F2214-BSD1) Continued				Prepared & Analyzed: 06/22/18						
Bromodichloromethane	**19.5**	0.50	ug/L	20		97.6	75-125	6.23	30	
Bromoform	**17.2**	0.50	ug/L	20		85.8	75-125	4.78	30	
Bromomethane	**18.0**	0.50	ug/L	20		90.2	75-125	15.8	30	
2-Butanone (MEK)	**19.7**	10	ug/L	20		98.6	70-130	17.2	30	
tert-Butyl alcohol (TBA)	**82.7**	10	ug/L	100		82.7	70-130	28.5	30	
sec-Butylbenzene	**19.5**	0.50	ug/L	20		97.4	70-130	4.89	30	
tert-Butylbenzene	**22.0**	0.50	ug/L	20		110	70-130	5.85	30	
n-Butylbenzene	**20.0**	0.50	ug/L	20		100	70-130	3.19	30	
Carbon Disulfide	**15.6**	0.50	ug/L	20		78.0	70-130	18.2	30	
Carbon Tetrachloride	**20.6**	0.50	ug/L	20		103	75-125	13.9	30	
Chlorobenzene	**21.4**	0.50	ug/L	20		107	75-125	7.83	30	
Chloroethane	**18.2**	0.50	ug/L	20		91.1	75-125	0.874	30	
Chloroform	**20.0**	0.50	ug/L	20		100	75-125	10.1	30	
Chloromethane	**16.0**	0.50	ug/L	20		80.1	65-125	11.9	30	
2-Chlorotoluene	**20.4**	0.50	ug/L	20		102	70-130	5.45	30	
4-Chlorotoluene	**20.0**	0.50	ug/L	20		100	70-130	3.10	30	
1,2-Dibromo-3-chloropropane	**16.3**	1.0	ug/L	20		81.4	70-130	37.7	30	AA-C1
Dibromochloromethane	**19.1**	0.50	ug/L	20		95.4	75-125	0.473	30	
1,2-Dibromoethane (EDB)	**18.4**	0.50	ug/L	20		92.2	70-130	2.89	30	
Dibromomethane	**19.4**	0.50	ug/L	20		97.2	70-130	2.14	30	
1,3-Dichlorobenzene	**22.4**	0.50	ug/L	20		112	70-130	4.42	30	
1,2-Dichlorobenzene	**22.9**	0.50	ug/L	20		114	70-130	3.31	30	
1,4-Dichlorobenzene	**22.4**	0.50	ug/L	20		112	75-125	1.64	30	
Dichlorodifluoromethane (R12)	**17.8**	0.50	ug/L	20		89.2	70-130	8.38	30	
1,1-Dichloroethane	**21.2**	0.50	ug/L	20		106	70-125	10.3	30	
1,2-Dichloroethane (EDC)	**19.0**	0.50	ug/L	20		94.8	75-125	3.76	30	
1,1-Dichloroethylene	**17.3**	0.50	ug/L	20		86.6	70-130	5.82	30	
trans-1,2-Dichloroethylene	**22.0**	0.50	ug/L	20		110	75-125	17.3	30	
cis-1,2-Dichloroethylene	**20.3**	0.50	ug/L	20		101	75-125	13.6	30	
1,2-Dichloropropane	**19.4**	0.50	ug/L	20		96.8	75-130	3.63	30	
2,2-Dichloropropane	**18.5**	0.50	ug/L	20		92.7	70-130	9.67	30	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94899
Date Received: 06/21/18
Date Reported: 06/26/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2214 - EPA 5030B										
LCS Dup (B8F2214-BSD1) Continued				Prepared & Analyzed: 06/22/18						
1,3-Dichloropropane	**20.0**	0.50	ug/L	20		100	70-130	3.29	30	
cis-1,3-Dichloropropylene	**19.8**	0.50	ug/L	20		98.8	75-125	1.22	30	
trans-1,3-Dichloropropylene	**19.1**	0.50	ug/L	20		95.4	70-130	1.46	30	
1,1-Dichloropropylene	**19.7**	0.50	ug/L	20		98.5	70-130	9.91	30	
Diisopropyl ether (DIPE)	**18.2**	2.0	ug/L	20		91.2	70-130	3.00	30	
Ethylbenzene	**21.1**	0.50	ug/L	20		106	75-125	10.1	30	
Ethyl-tert-Butyl Ether (ETBE)	**19.1**	2.0	ug/L	20		95.4	70-130	3.71	30	
Hexachlorobutadiene	**24.0**	1.0	ug/L	20		120	70-130	11.6	30	
2-Hexanone (MBK)	**17.9**	10	ug/L	20		89.6	70-130	11.1	30	
Isopropylbenzene	**20.7**	0.50	ug/L	20		103	70-130	9.31	30	
4-Isopropyltoluene	**21.5**	1.0	ug/L	20		108	70-130	4.90	30	
Methyl-tert-Butyl Ether (MTBE)	**40.7**	2.0	ug/L	40		102	75-125	5.77	30	
Methylene Chloride	**15.9**	5.0	ug/L	20		79.5	75-130	7.74	30	
4-Methyl-2-pentanone (MIBK)	**16.4**	10	ug/L	20		81.9	70-130	27.7	30	
Naphthalene	**21.0**	2.0	ug/L	20		105	70-130	21.1	30	
n-Propylbenzene	**20.2**	0.50	ug/L	20		101	70-130	6.19	30	
Styrene	**20.5**	0.50	ug/L	20		103	70-130	3.62	30	
1,1,1,2-Tetrachloroethane	**22.0**	0.50	ug/L	20		110	70-130	5.61	30	
1,1,2,2-Tetrachloroethane	**20.6**	0.50	ug/L	20		103	70-135	17.5	30	
Tetrachloroethylene (PCE)	**22.6**	0.50	ug/L	20		113	75-125	16.8	30	
Toluene	**21.2**	0.50	ug/L	20		106	75-125	11.4	30	
1,2,3-Trichlorobenzene	**22.0**	0.50	ug/L	20		110	70-130	10.1	30	
1,2,4-Trichlorobenzene	**22.9**	0.50	ug/L	20		114	70-130	4.48	30	
1,1,1-Trichloroethane	**19.8**	0.50	ug/L	20		98.8	75-125	10.6	30	
1,1,2-Trichloroethane	**20.3**	0.50	ug/L	20		102	75-125	5.69	30	
Trichloroethylene (TCE)	**20.4**	0.50	ug/L	20		102	75-125	8.48	30	
Trichlorofluoromethane (R11)	**18.3**	0.50	ug/L	20		91.4	70-130	7.78	30	
1,2,3-Trichloropropane	**19.1**	0.50	ug/L	20		95.5	70-130	20.7	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**16.0**	0.50	ug/L	20		80.0	70-130	7.40	30	
1,3,5-Trimethylbenzene	**20.2**	0.50	ug/L	20		101	70-130	6.70	30	
1,2,4-Trimethylbenzene	**20.2**	0.50	ug/L	20		101	70-130	7.23	30	



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94899
Date Received: 06/21/18
Date Reported: 06/26/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2214 - EPA 5030B										
LCS Dup (B8F2214-BSD1) Continued				Prepared & Analyzed: 06/22/18						
Vinyl chloride	**21.4**	0.50	ug/L	20		107	75-125	25.9	30	
o-Xylene	**20.6**	0.50	ug/L	20		103	75-125	6.40	30	
m,p-Xylenes	**42.1**	1.0	ug/L	40		105	70-130	9.50	30	
Surrogate: 4-Bromofluorobenzene	*47.6*		*ug/L*	*50*		*95.2*	*70-140*			
Surrogate: Dibromofluoromethane	*47.6*		*ug/L*	*50*		*95.2*	*70-140*			
Surrogate: Toluene-d8	*51.8*		*ug/L*	*50*		*104*	*70-140*			
Matrix Spike (B8F2214-MS1)		**Source: 8F12016-01**		Prepared: 06/22/18		Analyzed: 06/23/18				
Acetone	**28.1**	10	ug/L	20	25.2	14.5	70-130			QM-07
tert-Amyl Methyl Ether (TAME)	**18.4**	2.0	ug/L	20		92.0	70-130			
Benzene	**23.0**	0.50	ug/L	20		115	70-130			
Bromobenzene	**20.4**	0.50	ug/L	20		102	70-130			
Bromochloromethane	**20.0**	0.50	ug/L	20		100	70-130			
Bromodichloromethane	**19.5**	0.50	ug/L	20		97.6	70-130			
Bromoform	**15.3**	0.50	ug/L	20		76.6	70-130			
Bromomethane	**24.3**	0.50	ug/L	20		121	70-130			
2-Butanone (MEK)	**18.4**	10	ug/L	20		91.9	70-130			
tert-Butyl alcohol (TBA)	**89.5**	10	ug/L	100		89.5	70-130			
sec-Butylbenzene	**20.2**	0.50	ug/L	20		101	70-130			
tert-Butylbenzene	**22.4**	0.50	ug/L	20		112	70-130			
n-Butylbenzene	**20.7**	0.50	ug/L	20		104	70-130			
Carbon Disulfide	**21.9**	0.50	ug/L	20		110	70-130			
Carbon Tetrachloride	**20.8**	0.50	ug/L	20		104	70-130			
Chlorobenzene	**21.9**	0.50	ug/L	20		109	70-130			
Chloroethane	**23.3**	0.50	ug/L	20		117	70-130			
Chloroform	**20.5**	0.50	ug/L	20		102	70-130			
Chloromethane	**21.6**	0.50	ug/L	20		108	70-130			
2-Chlorotoluene	**21.1**	0.50	ug/L	20		105	70-130			
4-Chlorotoluene	**20.8**	0.50	ug/L	20		104	70-130			
1,2-Dibromo-3-chloropropane	**17.1**	1.0	ug/L	20		85.7	70-130			
Dibromochloromethane	**18.4**	0.50	ug/L	20		91.8	70-130			
1,2-Dibromoethane (EDB)	**17.4**	0.50	ug/L	20		87.2	70-130			



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94899
Date Received: 06/21/18
Date Reported: 06/26/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2214 - EPA 5030B										
Matrix Spike (B8F2214-MS1) Continued Source: 8F12016-01 Prepared: 06/22/18 Analyzed: 06/23/18										
Dibromomethane	**19.0**	0.50	ug/L	20		94.9	70-130			
1,3-Dichlorobenzene	**21.6**	0.50	ug/L	20		108	70-130			
1,2-Dichlorobenzene	**22.0**	0.50	ug/L	20		110	70-130			
1,4-Dichlorobenzene	**21.9**	0.50	ug/L	20		109	70-130			
Dichlorodifluoromethane (R12)	**22.0**	0.50	ug/L	20		110	70-130			
1,1-Dichloroethane	**22.7**	0.50	ug/L	20		113	70-130			
1,2-Dichloroethane (EDC)	**19.1**	0.50	ug/L	20		95.4	70-130			
1,1-Dichloroethylene	**24.2**	0.50	ug/L	20		121	70-130			
trans-1,2-Dichloroethylene	**22.4**	0.50	ug/L	20		112	70-130			
cis-1,2-Dichloroethylene	**20.0**	0.50	ug/L	20		99.9	70-130			
1,2-Dichloropropane	**21.2**	0.50	ug/L	20		106	70-130			
2,2-Dichloropropane	**17.2**	0.50	ug/L	20		86.2	70-130			
1,3-Dichloropropane	**20.6**	0.50	ug/L	20		103	70-130			
cis-1,3-Dichloropropylene	**19.8**	0.50	ug/L	20		98.8	70-130			
trans-1,3-Dichloropropylene	**18.5**	0.50	ug/L	20		92.4	70-130			
1,1-Dichloropropylene	**21.1**	0.50	ug/L	20		105	70-130			
Diisopropyl ether (DIPE)	**19.3**	2.0	ug/L	20		96.6	70-130			
Ethylbenzene	**22.7**	0.50	ug/L	20		114	70-130			
Ethyl-tert-Butyl Ether (ETBE)	**19.3**	2.0	ug/L	20		96.5	70-130			
Hexachlorobutadiene	**18.7**	1.0	ug/L	20		93.6	70-130			
2-Hexanone (MBK)	**16.3**	10	ug/L	20		81.4	70-130			
Isopropylbenzene	**21.1**	0.50	ug/L	20		106	70-130			
4-Isopropyltoluene	**21.8**	1.0	ug/L	20		109	70-130			
Methyl-tert-Butyl Ether (MTBE)	**39.5**	2.0	ug/L	40		98.7	70-130			
Methylene Chloride	**27.5**	5.0	ug/L	20		138	70-130			QM-07
4-Methyl-2-pentanone (MIBK)	**13.4**	10	ug/L	20		66.8	70-130			QM-07
Naphthalene	**21.9**	2.0	ug/L	20	0.360	108	70-130			
n-Propylbenzene	**21.4**	0.50	ug/L	20		107	70-130			
Styrene	**20.9**	0.50	ug/L	20		104	70-130			
1,1,1,2-Tetrachloroethane	**22.0**	0.50	ug/L	20		110	70-130			
1,1,2,2-Tetrachloroethane	**21.3**	0.50	ug/L	20		106	70-130			

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94899
Date Received: 06/21/18
Date Reported: 06/26/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2214 - EPA 5030B										
Matrix Spike (B8F2214-MS1) Continued Source: 8F12016-01 Prepared: 06/22/18 Analyzed: 06/23/18										
Tetrachloroethylene (PCE)	**22.0**	0.50	ug/L	20		110	70-130			
Toluene	**22.6**	0.50	ug/L	20		113	70-130			
1,2,3-Trichlorobenzene	**20.3**	0.50	ug/L	20		102	70-130			
1,2,4-Trichlorobenzene	**20.3**	0.50	ug/L	20		102	70-130			
1,1,1-Trichloroethane	**20.8**	0.50	ug/L	20		104	70-130			
1,1,2-Trichloroethane	**21.1**	0.50	ug/L	20		106	70-130			
Trichloroethylene (TCE)	**21.2**	0.50	ug/L	20		106	70-130			
Trichlorofluoromethane (R11)	**22.6**	0.50	ug/L	20		113	70-130			
1,2,3-Trichloropropane	**19.3**	0.50	ug/L	20		96.6	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**21.8**	0.50	ug/L	20		109	70-130			
1,3,5-Trimethylbenzene	**20.7**	0.50	ug/L	20		104	70-130			
1,2,4-Trimethylbenzene	**20.7**	0.50	ug/L	20		104	70-130			
Vinyl chloride	**24.6**	0.50	ug/L	20		123	70-130			
o-Xylene	**21.9**	0.50	ug/L	20		110	70-130			
m,p-Xylenes	**44.2**	1.0	ug/L	40		111	70-130			
Surrogate: 4-Bromofluorobenzene	*50.7*		*ug/L*	*50*		*101*	*70-140*			
Surrogate: Dibromofluoromethane	*49.3*		*ug/L*	*50*		*98.6*	*70-140*			
Surrogate: Toluene-d8	*59.2*		*ug/L*	*50*		*118*	*70-140*			
Matrix Spike Dup (B8F2214-MSD1) **Source: 8F12016-01** Prepared: 06/22/18 Analyzed: 06/23/18										
Acetone	**36.6**	10	ug/L	20	25.2	57.2	70-130	26.4	30	QM-07
tert-Amyl Methyl Ether (TAME)	**22.0**	2.0	ug/L	20		110	70-130	18.1	30	
Benzene	**23.6**	0.50	ug/L	20		118	70-130	2.32	30	
Bromobenzene	**20.3**	0.50	ug/L	20		101	70-130	0.738	30	
Bromochloromethane	**22.7**	0.50	ug/L	20		113	70-130	12.3	30	
Bromodichloromethane	**22.2**	0.50	ug/L	20		111	70-130	13.1	30	
Bromoform	**16.2**	0.50	ug/L	20		81.1	70-130	5.77	30	
Bromomethane	**25.4**	0.50	ug/L	20		127	70-130	4.43	30	
2-Butanone (MEK)	**22.2**	10	ug/L	20		111	70-130	18.7	30	
tert-Butyl alcohol (TBA)	**90.6**	10	ug/L	100		90.6	70-130	1.24	30	
sec-Butylbenzene	**19.7**	0.50	ug/L	20		98.6	70-130	2.40	30	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94899
Date Received: 06/21/18
Date Reported: 06/26/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2214 - EPA 5030B										
Matrix Spike Dup (B8F2214-MSD1) Continued	**Source: 8F12016-01**			Prepared: 06/22/18		Analyzed: 06/23/18				
tert-Butylbenzene	**21.9**	0.50	ug/L	20		110	70-130	2.48	30	
n-Butylbenzene	**19.8**	0.50	ug/L	20		98.8	70-130	4.74	30	
Carbon Disulfide	**21.3**	0.50	ug/L	20		106	70-130	3.10	30	
Carbon Tetrachloride	**21.0**	0.50	ug/L	20		105	70-130	1.01	30	
Chlorobenzene	**20.0**	0.50	ug/L	20		99.9	70-130	9.03	30	
Chloroethane	**22.6**	0.50	ug/L	20		113	70-130	3.18	30	
Chloroform	**21.8**	0.50	ug/L	20		109	70-130	6.38	30	
Chloromethane	**21.0**	0.50	ug/L	20		105	70-130	2.91	30	
2-Chlorotoluene	**20.5**	0.50	ug/L	20		103	70-130	2.69	30	
4-Chlorotoluene	**20.1**	0.50	ug/L	20		101	70-130	3.18	30	
1,2-Dibromo-3-chloropropane	**20.2**	1.0	ug/L	20		101	70-130	16.6	30	
Dibromochloromethane	**18.3**	0.50	ug/L	20		91.6	70-130	0.273	30	
1,2-Dibromoethane (EDB)	**18.7**	0.50	ug/L	20		93.5	70-130	6.97	30	
Dibromomethane	**22.8**	0.50	ug/L	20		114	70-130	18.4	30	
1,3-Dichlorobenzene	**20.8**	0.50	ug/L	20		104	70-130	3.63	30	
1,2-Dichlorobenzene	**22.4**	0.50	ug/L	20		112	70-130	1.44	30	
1,4-Dichlorobenzene	**21.9**	0.50	ug/L	20		110	70-130	0.183	30	
Dichlorodifluoromethane (R12)	**22.6**	0.50	ug/L	20		113	70-130	2.69	30	
1,1-Dichloroethane	**23.4**	0.50	ug/L	20		117	70-130	3.38	30	
1,2-Dichloroethane (EDC)	**22.6**	0.50	ug/L	20		113	70-130	16.7	30	
1,1-Dichloroethylene	**22.2**	0.50	ug/L	20		111	70-130	8.49	30	
trans-1,2-Dichloroethylene	**21.8**	0.50	ug/L	20		109	70-130	2.72	30	
cis-1,2-Dichloroethylene	**20.7**	0.50	ug/L	20		103	70-130	3.39	30	
1,2-Dichloropropane	**23.4**	0.50	ug/L	20		117	70-130	9.78	30	
2,2-Dichloropropane	**17.5**	0.50	ug/L	20		87.6	70-130	1.55	30	
1,3-Dichloropropane	**21.7**	0.50	ug/L	20		109	70-130	5.29	30	
cis-1,3-Dichloropropylene	**21.5**	0.50	ug/L	20		108	70-130	8.48	30	
trans-1,3-Dichloropropylene	**18.5**	0.50	ug/L	20		92.4	70-130	0.0541	30	
1,1-Dichloropropylene	**20.9**	0.50	ug/L	20		105	70-130	0.666	30	
Diisopropyl ether (DIPE)	**21.7**	2.0	ug/L	20		109	70-130	11.7	30	
Ethylbenzene	**19.9**	0.50	ug/L	20		99.7	70-130	13.0	30	



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94899
Date Received: 06/21/18
Date Reported: 06/26/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2214 - EPA 5030B										
Matrix Spike Dup (B8F2214-MSD1) Continued	**Source: 8F12016-01** Prepared: 06/22/18 Analyzed: 06/23/18									
Ethyl-tert-Butyl Ether (ETBE)	**23.5**	2.0	ug/L	20		118	70-130	19.8	30	
Hexachlorobutadiene	**18.4**	1.0	ug/L	20		92.2	70-130	1.51	30	
2-Hexanone (MBK)	**17.0**	10	ug/L	20		85.0	70-130	4.27	30	
Isopropylbenzene	**20.5**	0.50	ug/L	20		103	70-130	2.93	30	
4-Isopropyltoluene	**21.0**	1.0	ug/L	20		105	70-130	3.37	30	
Methyl-tert-Butyl Ether (MTBE)	**48.6**	2.0	ug/L	40		121	70-130	20.7	30	
Methylene Chloride	**32.2**	5.0	ug/L	20		161	70-130	15.6	30	QM-07
4-Methyl-2-pentanone (MIBK)	**19.1**	10	ug/L	20		95.6	70-130	35.5	30	AA-C1
Naphthalene	**25.0**	2.0	ug/L	20	0.360	123	70-130	13.1	30	
n-Propylbenzene	**20.4**	0.50	ug/L	20		102	70-130	5.12	30	
Styrene	**18.8**	0.50	ug/L	20		93.8	70-130	10.8	30	
1,1,1,2-Tetrachloroethane	**20.4**	0.50	ug/L	20		102	70-130	7.63	30	
1,1,2,2-Tetrachloroethane	**24.7**	0.50	ug/L	20		124	70-130	14.9	30	
Tetrachloroethylene (PCE)	**18.2**	0.50	ug/L	20		91.0	70-130	19.1	30	
Toluene	**19.7**	0.50	ug/L	20		98.7	70-130	13.6	30	
1,2,3-Trichlorobenzene	**20.0**	0.50	ug/L	20		100	70-130	1.44	30	
1,2,4-Trichlorobenzene	**19.2**	0.50	ug/L	20		96.0	70-130	5.71	30	
1,1,1-Trichloroethane	**20.7**	0.50	ug/L	20		104	70-130	0.289	30	
1,1,2-Trichloroethane	**21.6**	0.50	ug/L	20		108	70-130	2.20	30	
Trichloroethylene (TCE)	**21.3**	0.50	ug/L	20		107	70-130	0.282	30	
Trichlorofluoromethane (R11)	**23.4**	0.50	ug/L	20		117	70-130	3.47	30	
1,2,3-Trichloropropane	**22.3**	0.50	ug/L	20		112	70-130	14.5	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**21.4**	0.50	ug/L	20		107	70-130	1.90	30	
1,3,5-Trimethylbenzene	**20.2**	0.50	ug/L	20		101	70-130	2.79	30	
1,2,4-Trimethylbenzene	**20.2**	0.50	ug/L	20		101	70-130	2.34	30	
Vinyl chloride	**24.1**	0.50	ug/L	20		120	70-130	2.06	30	
o-Xylene	**19.8**	0.50	ug/L	20		99.1	70-130	9.97	30	
m,p-Xylenes	**38.8**	1.0	ug/L	40		97.0	70-130	13.1	30	
Surrogate: 4-Bromofluorobenzene	*51.6*		*ug/L*	*50*		*103*	*70-140*			

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94899
Date Received: 06/21/18
Date Reported: 06/26/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2214 - EPA 5030B										
Matrix Spike Dup (B8F2214-MSD1) Continued				**Source: 8F12016-01**		Prepared: 06/22/18	Analyzed: 06/23/18			
Surrogate: Dibromofluoromethane	*54.0*		*ug/L*	*50*		*108*	*70-140*			
Surrogate: Toluene-d8	*53.6*		*ug/L*	*50*		*107*	*70-140*			
Carbon Chain by GC/FID - Quality Control										
Batch B8F2525 - EPA 3510C										
Blank (B8F2525-BLK1)						Prepared & Analyzed: 06/25/18				
C6-C8	<0.010	0.010	mg/L							
C8-C10	<0.010	0.010	mg/L							
C10-C12	<0.010	0.010	mg/L							
C12-C14	<0.010	0.010	mg/L							
C14-C16	<0.010	0.010	mg/L							
C16-C18	<0.010	0.010	mg/L							
C18-C20	<0.010	0.010	mg/L							
C20-C22	<0.010	0.010	mg/L							
C22-C24	<0.010	0.010	mg/L							
C24-C26	<0.010	0.010	mg/L							
C26-C28	<0.010	0.010	mg/L							
C28-C32	<0.010	0.010	mg/L							
C32-C34	<0.010	0.010	mg/L							
C34-C36	<0.010	0.010	mg/L							
C36-C40	<0.010	0.010	mg/L							
C40-C44	<0.010	0.010	mg/L							
TPH (C6-C44)	<0.10	0.10	mg/L							
Gasoline Range Organics (C6-C10)	<0.10	0.10	mg/L							
Diesel Range Organics (C10-C23)	<0.10	0.10	mg/L							
Oil Range Organics (C23-C44)	<0.10	0.10	mg/L							
Surrogate: o-Terphenyl	*0.0310*		*mg/L*	*0.040*		*77.5*	*50-150*			
LCS (B8F2525-BS1)						Prepared & Analyzed: 06/25/18				
Diesel Range Organics as Diesel	**0.626**	0.10	mg/L	0.80		78.2	75-125			
Surrogate: o-Terphenyl	*0.0258*		*mg/L*	*0.040*		*64.4*	*50-150*			

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94899
Date Received: 06/21/18
Date Reported: 06/26/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Carbon Chain by GC/FID - Quality Control										
Batch B8F2525 - EPA 3510C										
LCS Dup (B8F2525-BSD1)				Prepared & Analyzed: 06/25/18						
Diesel Range Organics as Diesel	**0.772**	0.10	mg/L	0.80		96.5	75-125	20.9	30	
Surrogate: o-Terphenyl	*0.0414*		*mg/L*	*0.040*		*103*	*50-150*			
Batch B8F2532 - EPA 3550B										
Blank (B8F2532-BLK1)				Prepared & Analyzed: 06/25/18						
C6-C8	<1.0	1.0	mg/kg							
C8-C10	<1.0	1.0	mg/kg							
C10-C12	<1.0	1.0	mg/kg							
C12-C14	<1.0	1.0	mg/kg							
C14-C16	<1.0	1.0	mg/kg							
C16-C18	<1.0	1.0	mg/kg							
C18-C20	<1.0	1.0	mg/kg							
C20-C22	<1.0	1.0	mg/kg							
C22-C24	<1.0	1.0	mg/kg							
C24-C26	<1.0	1.0	mg/kg							
C26-C28	<1.0	1.0	mg/kg							
C28-C32	<1.0	1.0	mg/kg							
C32-C34	<1.0	1.0	mg/kg							
C34-C36	<1.0	1.0	mg/kg							
C36-C40	<1.0	1.0	mg/kg							
C40-C44	<1.0	1.0	mg/kg							
TPH (C6-C44)	<10	10	mg/kg							
Gasoline Range Organics (C6-C10)	<5.0	5.0	mg/kg							
Diesel Range Organics (C10-C23)	<5.0	5.0	mg/kg							
Oil Range Organics (C23-C44)	<5.0	5.0	mg/kg							
Surrogate: o-Terphenyl	*8.56*		*mg/kg*	*10*		*85.6*	*50-150*			
LCS (B8F2532-BS1)				Prepared & Analyzed: 06/25/18						
Diesel Range Organics as Diesel	**199**	10	mg/kg	200		99.7	75-125			
Surrogate: o-Terphenyl	*12.6*		*mg/kg*	*10*		*126*	*50-150*			
LCS Dup (B8F2532-BSD1)				Prepared & Analyzed: 06/25/18						
Diesel Range Organics as Diesel	**211**	10	mg/kg	200		105	75-125	5.41	40	



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94899
Date Received: 06/21/18
Date Reported: 06/26/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Carbon Chain by GC/FID - Quality Control										
Batch B8F2532 - EPA 3550B										
LCS Dup (B8F2532-BSD1) Continued				Prepared & Analyzed: 06/25/18						
Surrogate: o-Terphenyl	*12.8*		*mg/kg*	*10*		*128*	*50-150*			
Matrix Spike (B8F2532-MS1)		**Source: 8F25015-01**		Prepared & Analyzed: 06/25/18						
Diesel Range Organics as Diesel	**176**	10	mg/kg	200		88.0	70-130			
Surrogate: o-Terphenyl	*11.0*		*mg/kg*	*10*		*110*	*50-150*			
Batch B8F2533 - EPA 3550B										
Blank (B8F2533-BLK1)				Prepared & Analyzed: 06/25/18						
C6-C8	<1.0	1.0	mg/kg							
C8-C10	<1.0	1.0	mg/kg							
C10-C12	<1.0	1.0	mg/kg							
C12-C14	<1.0	1.0	mg/kg							
C14-C16	<1.0	1.0	mg/kg							
C16-C18	<1.0	1.0	mg/kg							
C18-C20	<1.0	1.0	mg/kg							
C20-C22	<1.0	1.0	mg/kg							
C22-C24	<1.0	1.0	mg/kg							
C24-C26	<1.0	1.0	mg/kg							
C26-C28	<1.0	1.0	mg/kg							
C28-C32	<1.0	1.0	mg/kg							
C32-C34	<1.0	1.0	mg/kg							
C34-C36	<1.0	1.0	mg/kg							
C36-C40	<1.0	1.0	mg/kg							
C40-C44	<1.0	1.0	mg/kg							
TPH (C6-C44)	<10	10	mg/kg							
Gasoline Range Organics (C6-C10)	<5.0	5.0	mg/kg							
Diesel Range Organics (C10-C23)	<5.0	5.0	mg/kg							
Oil Range Organics (C23-C44)	<5.0	5.0	mg/kg							
Surrogate: o-Terphenyl	*7.63*		*mg/kg*	*10*		*76.3*	*50-150*			
LCS (B8F2533-BS1)				Prepared & Analyzed: 06/25/18						
Diesel Range Organics as Diesel	**210**	10	mg/kg	200		105	75-125			
Surrogate: o-Terphenyl	*10.6*		*mg/kg*	*10*		*106*	*50-150*			

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94899
Date Received: 06/21/18
Date Reported: 06/26/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Carbon Chain by GC/FID - Quality Control										
Batch B8F2533 - EPA 3550B										
LCS Dup (B8F2533-BSD1)				Prepared & Analyzed: 06/25/18						
Diesel Range Organics as Diesel	**225**	10	mg/kg	200		113	75-125	6.97	40	
Surrogate: o-Terphenyl	*10.9*		*mg/kg*	*10*		*109*	*50-150*			
Matrix Spike (B8F2533-MS1)		**Source: 8F25015-06**		Prepared & Analyzed: 06/25/18						
Diesel Range Organics as Diesel	**161**	10	mg/kg	200	13.5	73.7	70-130			
Surrogate: o-Terphenyl	*8.12*		*mg/kg*	*10*		*81.2*	*50-150*			
Matrix Spike Dup (B8F2533-MSD1)		**Source: 8F25015-06**		Prepared & Analyzed: 06/25/18						
Diesel Range Organics as Diesel	**204**	10	mg/kg	200	13.5	95.1	70-130	23.5	40	
Surrogate: o-Terphenyl	*8.89*		*mg/kg*	*10*		*88.9*	*50-150*			
Total Metals by ICP/MS EPA 6020B - Quality Control										
Batch B8F2221 - EPA 3020A										
Blank (B8F2221-BLK1)				Prepared: 06/22/18 Analyzed: 06/25/18						
Antimony	<5.0	5.0	ug/L							
Arsenic	<5.0	5.0	ug/L							
Barium	<5.0	5.0	ug/L							
Beryllium	<5.0	5.0	ug/L							
Cadmium	<5.0	5.0	ug/L							
Chromium	<5.0	5.0	ug/L							
Cobalt	<5.0	5.0	ug/L							
Copper	<5.0	5.0	ug/L							
Lead	<5.0	5.0	ug/L							
Molybdenum	<5.0	5.0	ug/L							
Nickel	<5.0	5.0	ug/L							
Selenium	<20	20	ug/L							
Silver	<5.0	5.0	ug/L							
Thallium	<5.0	5.0	ug/L							
Vanadium	<20	20	ug/L							
Zinc	<20	20	ug/L							
LCS (B8F2221-BS1)				Prepared: 06/22/18 Analyzed: 06/25/18						
Antimony	**50.5**	5.0	ug/L	50		101	80-120			

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94899
Date Received: 06/21/18
Date Reported: 06/26/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Metals by ICP/MS EPA 6020B - Quality Control										
Batch B8F2221 - EPA 3020A										
LCS (B8F2221-BS1) Continued				Prepared: 06/22/18 Analyzed: 06/25/18						
Arsenic	**49.7**	5.0	ug/L	50		99.3	80-120			
Barium	**50.3**	5.0	ug/L	50		101	80-120			
Beryllium	**45.5**	5.0	ug/L	50		91.0	80-120			
Cadmium	**49.7**	5.0	ug/L	50		99.4	80-120			
Chromium	**45.6**	5.0	ug/L	50		91.2	80-120			
Cobalt	**49.7**	5.0	ug/L	50		99.4	80-120			
Copper	**47.1**	5.0	ug/L	50		94.2	80-120			
Lead	**49.8**	5.0	ug/L	50		99.6	80-120			
Nickel	**50.5**	5.0	ug/L	50		101	80-120			
Selenium	**251**	20	ug/L	250		100	80-120			
Silver	**50.8**	5.0	ug/L	50		102	80-120			
Thallium	**49.6**	5.0	ug/L	50		99.1	80-120			
Vanadium	**60.0**	20	ug/L	50		120	80-120			
Zinc	**54.5**	20	ug/L	50		109	80-120			
LCS Dup (B8F2221-BSD1)				Prepared: 06/22/18 Analyzed: 06/25/18						
Antimony	**50.6**	5.0	ug/L	50		101	80-120	0.247	20	
Arsenic	**48.0**	5.0	ug/L	50		96.1	80-120	3.30	20	
Barium	**50.7**	5.0	ug/L	50		101	80-120	0.682	20	
Beryllium	**46.6**	5.0	ug/L	50		93.1	80-120	2.32	20	
Cadmium	**49.8**	5.0	ug/L	50		99.5	80-120	0.0503	20	
Chromium	**45.2**	5.0	ug/L	50		90.4	80-120	0.882	20	
Cobalt	**49.4**	5.0	ug/L	50		98.7	80-120	0.757	20	
Copper	**46.3**	5.0	ug/L	50		92.6	80-120	1.66	20	
Lead	**49.8**	5.0	ug/L	50		99.6	80-120	0.00	20	
Molybdenum	**50.2**	5.0	ug/L	50		100	80-120	0.892	20	
Nickel	**50.0**	5.0	ug/L	50		99.9	80-120	1.05	20	
Selenium	**243**	20	ug/L	250		97.2	80-120	3.04	20	
Silver	**48.0**	5.0	ug/L	50		96.1	80-120	5.47	20	
Thallium	**50.4**	5.0	ug/L	50		101	80-120	1.80	20	
Vanadium	**60.0**	20	ug/L	50		120	80-120	0.00	20	
Zinc	**48.2**	20	ug/L	50		96.4	80-120	12.2	20	

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Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94899
Date Received: 06/21/18
Date Reported: 06/26/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Metals by ICP/MS EPA 6020B - Quality Control										
Batch B8F2221 - EPA 3020A										
Duplicate (B8F2221-DUP1)	**Source: 8F20019-26**		Prepared: 06/22/18	Analyzed: 06/25/18						
Antimony	**<5.0**	5.0	ug/L						30	
Arsenic	**110**	5.0	ug/L		102			7.56	30	
Barium	**310**	5.0	ug/L		300			3.33	30	
Beryllium	**47.5**	5.0	ug/L						30	
Cadmium	**<5.0**	5.0	ug/L						30	
Chromium	**21.9**	5.0	ug/L		26.2			18.0	30	
Cobalt	**6.15**	5.0	ug/L		5.95			3.31	30	
Copper	**17.0**	5.0	ug/L		17.1			0.587	30	
Lead	**11.4**	5.0	ug/L		11.0			4.02	30	
Molybdenum	**65.6**	5.0	ug/L		60.2			8.43	30	
Nickel	**56.4**	5.0	ug/L		48.5			15.1	30	
Selenium	**<20**	20	ug/L						30	
Silver	**<5.0**	5.0	ug/L						30	
Thallium	**<5.0**	5.0	ug/L						30	
Vanadium	**32.3**	20	ug/L		34.7			7.09	30	
Zinc	**43.4**	20	ug/L		45.8			5.56	30	
Matrix Spike (B8F2221-MS1)	**Source: 8F20018-05**		Prepared: 06/22/18	Analyzed: 06/25/18						
Antimony	**52.4**	5.0	ug/L	50		105	75-125			
Arsenic	**54.3**	5.0	ug/L	50		109	75-125			
Barium	**200**	5.0	ug/L	50	49.7	301	75-125			QM-07
Beryllium	**38.0**	5.0	ug/L	50		76.0	75-125			
Cadmium	**49.2**	5.0	ug/L	50		98.3	75-125			
Chromium	**46.4**	5.0	ug/L	50		92.8	75-125			
Cobalt	**53.3**	5.0	ug/L	50		107	75-125			
Copper	**54.0**	5.0	ug/L	50	5.12	97.8	75-125			
Lead	**55.3**	5.0	ug/L	50		111	75-125			
Molybdenum	**59.3**	5.0	ug/L	50	11.6	95.4	75-125			
Nickel	**67.5**	5.0	ug/L	50	5.52	124	75-125			
Selenium	**340**	20	ug/L	250		136	75-125			QM-07
Silver	**47.0**	5.0	ug/L	50		93.9	75-125			
Thallium	**51.4**	5.0	ug/L	50		103	75-125			

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94899
Date Received: 06/21/18
Date Reported: 06/26/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Metals by ICP/MS EPA 6020B - Quality Control										
Batch B8F2221 - EPA 3020A										
Matrix Spike (B8F2221-MS1) Continued Source: 8F20018-05 Prepared: 06/22/18 Analyzed: 06/25/18										
Vanadium	**112**	20	ug/L	50	21.8	180	75-125			QM-07
Zinc	**74.8**	20	ug/L	50		150	75-125			QM-07
Matrix Spike Dup (B8F2221-MSD1) **Source: 8F20018-05** Prepared: 06/22/18 Analyzed: 06/25/18										
Antimony	**53.7**	5.0	ug/L	50		107	75-125	2.55	30	
Arsenic	**54.2**	5.0	ug/L	50		108	75-125	0.184	30	
Barium	**200**	5.0	ug/L	50	49.7	301	75-125	0.175	30	QM-07
Beryllium	**38.8**	5.0	ug/L	50		77.5	75-125	1.89	30	
Cadmium	**50.6**	5.0	ug/L	50		101	75-125	2.91	30	
Chromium	**47.4**	5.0	ug/L	50		94.8	75-125	2.08	30	
Cobalt	**53.8**	5.0	ug/L	50		108	75-125	0.980	30	
Copper	**52.0**	5.0	ug/L	50	5.12	93.6	75-125	3.96	30	
Lead	**56.5**	5.0	ug/L	50		113	75-125	2.24	30	
Molybdenum	**59.2**	5.0	ug/L	50	11.6	95.2	75-125	0.169	30	
Nickel	**67.6**	5.0	ug/L	50	5.52	124	75-125	0.111	30	
Selenium	**282**	20	ug/L	250		113	75-125	18.6	30	
Silver	**46.9**	5.0	ug/L	50		93.8	75-125	0.160	30	
Thallium	**52.7**	5.0	ug/L	50		105	75-125	2.45	30	
Vanadium	**115**	20	ug/L	50	21.8	186	75-125	2.89	30	QM-07
Zinc	**78.2**	20	ug/L	50		156	75-125	4.48	30	QM-07
Total Metals CAM 17 - Quality Control										
Batch B8F2220 - EPA 3050B										
Blank (B8F2220-BLK1) Prepared: 06/22/18 Analyzed: 06/25/18										
Antimony	<10	10	mg/kg							
Arsenic	<0.50	0.50	mg/kg							
Barium	<10	10	mg/kg							
Beryllium	<1.0	1.0	mg/kg							
Cadmium	<1.0	1.0	mg/kg							
Chromium	<3.0	3.0	mg/kg							
Cobalt	<3.0	3.0	mg/kg							
Copper	<3.0	3.0	mg/kg							
Lead	<3.0	3.0	mg/kg							



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94899
Date Received: 06/21/18
Date Reported: 06/26/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Metals CAM 17 - Quality Control										
Batch B8F2220 - EPA 3050B										
Blank (B8F2220-BLK1) Continued				Prepared: 06/22/18 Analyzed: 06/25/18						
Molybdenum	<5.0	5.0	mg/kg							
Nickel	<3.0	3.0	mg/kg							
Selenium	<0.50	0.50	mg/kg							
Silver	<1.0	1.0	mg/kg							
Thallium	<5.0	5.0	mg/kg							
Vanadium	<10	10	mg/kg							
Zinc	<3.0	3.0	mg/kg							
LCS (B8F2220-BS1)				Prepared: 06/22/18 Analyzed: 06/25/18						
Antimony	**54.5**	10	mg/kg	50		109	80-120			
Arsenic	**52.5**	0.50	mg/kg	50		105	80-120			
Barium	**52.4**	10	mg/kg	50		105	80-120			
Beryllium	**56.7**	1.0	mg/kg	50		113	80-120			
Cadmium	**57.1**	1.0	mg/kg	50		114	80-120			
Chromium	**53.7**	3.0	mg/kg	50		107	80-120			
Cobalt	**55.1**	3.0	mg/kg	50		110	80-120			
Copper	**51.5**	3.0	mg/kg	50		103	80-120			
Lead	**52.9**	3.0	mg/kg	50		106	80-120			
Molybdenum	**56.8**	5.0	mg/kg	50		114	80-120			
Nickel	**55.3**	3.0	mg/kg	50		111	80-120			
Selenium	**55.0**	0.50	mg/kg	50		110	80-120			
Silver	**51.6**	1.0	mg/kg	50		103	80-120			
Thallium	**55.7**	5.0	mg/kg	50		111	80-120			
Vanadium	**54.9**	10	mg/kg	50		110	80-120			
Zinc	**58.0**	3.0	mg/kg	50		116	80-120			
LCS Dup (B8F2220-BSD1)				Prepared: 06/22/18 Analyzed: 06/25/18						
Antimony	**51.0**	10	mg/kg	50		102	80-120	6.62	20	
Arsenic	**49.3**	0.50	mg/kg	50		98.6	80-120	6.25	20	
Barium	**49.5**	10	mg/kg	50		99.1	80-120	5.71	20	
Beryllium	**53.7**	1.0	mg/kg	50		107	80-120	5.45	20	
Cadmium	**53.9**	1.0	mg/kg	50		108	80-120	5.71	20	
Chromium	**50.4**	3.0	mg/kg	50		101	80-120	6.22	20	



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94899
Date Received: 06/21/18
Date Reported: 06/26/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Metals CAM 17 - Quality Control										
Batch B8F2220 - EPA 3050B										
LCS Dup (B8F2220-BSD1) Continued				Prepared: 06/22/18 Analyzed: 06/25/18						
Cobalt	**51.9**	3.0	mg/kg	50		104	80-120	6.04	20	
Copper	**48.0**	3.0	mg/kg	50		96.1	80-120	6.90	20	
Lead	**50.2**	3.0	mg/kg	50		100	80-120	5.18	20	
Molybdenum	**53.3**	5.0	mg/kg	50		107	80-120	6.34	20	
Nickel	**52.2**	3.0	mg/kg	50		104	80-120	5.77	20	
Selenium	**51.3**	0.50	mg/kg	50		103	80-120	6.94	20	
Silver	**48.9**	1.0	mg/kg	50		97.8	80-120	5.49	20	
Thallium	**51.9**	5.0	mg/kg	50		104	80-120	7.19	20	
Vanadium	**51.5**	10	mg/kg	50		103	80-120	6.30	20	
Zinc	**55.5**	3.0	mg/kg	50		111	80-120	4.42	20	
Duplicate (B8F2220-DUP1)				**Source: 8F21005-01** Prepared: 06/22/18 Analyzed: 06/25/18						
Antimony	**<10**	10	mg/kg		<10				40	
Arsenic	**2.48**	0.50	mg/kg		2.75			10.3	40	
Barium	**47.4**	10	mg/kg		42.0			12.2	40	
Beryllium	**<1.0**	1.0	mg/kg		<1.0				40	
Cadmium	**<1.0**	1.0	mg/kg		<1.0				40	
Chromium	**12.3**	3.0	mg/kg		11.8			3.65	40	
Cobalt	**3.63**	3.0	mg/kg		3.58			1.39	40	
Copper	**<3.0**	3.0	mg/kg		3.13				40	
Lead	**47.2**	3.0	mg/kg		27.8			51.6	40	AA-C1
Molybdenum	**<5.0**	5.0	mg/kg		<5.0				40	
Nickel	**10.0**	3.0	mg/kg		10.3			3.15	40	
Selenium	**<0.50**	0.50	mg/kg		<0.50				40	
Silver	**<1.0**	1.0	mg/kg		<1.0				40	
Thallium	**<5.0**	5.0	mg/kg		<5.0				40	
Vanadium	**27.9**	10	mg/kg		26.4			5.46	40	
Zinc	**60.5**	3.0	mg/kg		56.5			6.80	40	
Matrix Spike (B8F2220-MS1)				**Source: 8F20019-01** Prepared: 06/22/18 Analyzed: 06/25/18						
Antimony	**25.9**	10	mg/kg	50		51.7	75-125			QM-07
Arsenic	**47.5**	0.50	mg/kg	50	2.99	89.1	75-125			
Barium	**112**	10	mg/kg	50	53.8	116	75-125			

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94899
Date Received: 06/21/18
Date Reported: 06/26/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Metals CAM 17 - Quality Control										
Batch B8F2220 - EPA 3050B										
Matrix Spike (B8F2220-MS1) Continued Source: 8F20019-01 Prepared: 06/22/18 Analyzed: 06/25/18										
Beryllium	**45.5**	1.0	mg/kg	50		91.0	75-125			
Cadmium	**39.4**	1.0	mg/kg	50		78.8	75-125			
Chromium	**60.4**	3.0	mg/kg	50	12.7	95.3	75-125			
Cobalt	**48.3**	3.0	mg/kg	50	3.18	90.2	75-125			
Copper	**82.7**	3.0	mg/kg	50	10.3	145	75-125			QM-07
Lead	**79.6**	3.0	mg/kg	50	34.2	90.7	75-125			
Molybdenum	**49.5**	5.0	mg/kg	50		99.0	75-125			
Nickel	**53.7**	3.0	mg/kg	50	9.18	89.0	75-125			
Selenium	**39.6**	0.50	mg/kg	50		79.2	75-125			
Silver	**50.0**	1.0	mg/kg	50		100	75-125			
Thallium	**38.3**	5.0	mg/kg	50		76.5	60-140			
Vanadium	**78.2**	10	mg/kg	50	25.0	106	75-125			
Zinc	**127**	3.0	mg/kg	50	74.1	105	75-125			
Matrix Spike Dup (B8F2220-MSD1) **Source: 8F20019-01** Prepared: 06/22/18 Analyzed: 06/25/18										
Antimony	**26.4**	10	mg/kg	50		52.9	75-125	2.18	40	QM-07
Arsenic	**47.9**	0.50	mg/kg	50	2.99	89.9	75-125	0.880	40	
Barium	**106**	10	mg/kg	50	53.8	104	75-125	5.52	40	
Beryllium	**46.1**	1.0	mg/kg	50		92.2	75-125	1.31	40	
Cadmium	**40.1**	1.0	mg/kg	50		80.2	75-125	1.76	40	
Chromium	**60.6**	3.0	mg/kg	50	12.7	95.7	75-125	0.347	40	
Cobalt	**48.6**	3.0	mg/kg	50	3.18	90.8	75-125	0.702	40	
Copper	**65.7**	3.0	mg/kg	50	10.3	111	75-125	22.9	40	
Lead	**81.6**	3.0	mg/kg	50	34.2	94.6	75-125	2.47	40	
Molybdenum	**49.8**	5.0	mg/kg	50		99.7	75-125	0.725	40	
Nickel	**53.6**	3.0	mg/kg	50	9.18	88.9	75-125	0.0373	40	
Selenium	**42.3**	0.50	mg/kg	50		84.6	75-125	6.57	40	
Silver	**51.4**	1.0	mg/kg	50		103	75-125	2.78	40	
Thallium	**36.8**	5.0	mg/kg	50		73.6	60-140	3.92	40	
Vanadium	**75.8**	10	mg/kg	50	25.0	102	75-125	3.18	40	
Zinc	**117**	3.0	mg/kg	50	74.1	86.3	75-125	7.70	40	
Total Metals CAM 17 - Quality Control										

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A94899
Date Received: 06/21/18
Date Reported: 06/26/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Metals CAM 17 - Quality Control										
Batch B8F2219 - EPA 7470A Prep										
Blank (B8F2219-BLK1)				Prepared & Analyzed: 06/22/18						
Mercury	<0.00050	0.00050	mg/L							
LCS (B8F2219-BS1)				Prepared & Analyzed: 06/22/18						
Mercury	**0.0101**	0.00050	mg/L	0.010		101	80-120			
LCS Dup (B8F2219-BSD1)				Prepared & Analyzed: 06/22/18						
Mercury	**0.00999**	0.00050	mg/L	0.010		99.9	80-120	1.34	20	
Matrix Spike (B8F2219-MS1)		**Source: 8F21005-06**		Prepared & Analyzed: 06/22/18						
Mercury	**0.00963**	0.00050	mg/L	0.010	0.00050	96.3	75-125			
Matrix Spike Dup (B8F2219-MSD1)		**Source: 8F21005-06**		Prepared & Analyzed: 06/22/18						
Mercury	**0.00972**	0.00050	mg/L	0.010	0.00050	97.2	75-125	0.930	20	
Batch B8F2534 - EPA 7471A Prep										
Blank (B8F2534-BLK1)				Prepared & Analyzed: 06/25/18						
Mercury	<0.020	0.020	mg/kg							
LCS (B8F2534-BS1)				Prepared & Analyzed: 06/25/18						
Mercury	**0.518**	0.020	mg/kg	0.50		104	80-120			
LCS Dup (B8F2534-BSD1)				Prepared & Analyzed: 06/25/18						
Mercury	**0.526**	0.020	mg/kg	0.50		105	80-120	1.34	25	
Duplicate (B8F2534-DUP1)		**Source: 8F21005-01**		Prepared & Analyzed: 06/25/18						
Mercury	**0.0680**	0.020	mg/kg		0.0790			15.0	25	
Matrix Spike (B8F2534-MS1)		**Source: 8F20019-01**		Prepared & Analyzed: 06/25/18						
Mercury	**0.728**	0.020	mg/kg	0.50	0.248	96.0	75-125			
Matrix Spike Dup (B8F2534-MSD1)		**Source: 8F20019-01**		Prepared & Analyzed: 06/25/18						
Mercury	**0.757**	0.020	mg/kg	0.50	0.248	102	75-125	3.91	25	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client:	AECOM (LA)	**AA Project No:**	A94899
Project No:	NA	**Date Received:**	06/21/18
Project Name:	128 Hurricane - Soil & GW	**Date Reported:**	06/26/18

Special Notes

[1] = **AA-C1** : Exceeds RPD limit.

[2] = **QM-07** : The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

Viorel Vasile
Operations Manager

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311
Tel: 818-998-5547 FAX: 818-998-7258

A.A. COC No.: 70051783
Page 1 of 1

Client: AECOM	Project Name / No.: 125 Hurricane St. 60553849	Sampler's Name: A. Vigna
Project Manager: Kaleena Johnson	Site Address:	Sampler's Signature:
Phone:	City:	P.O. No.:
Fax:	State & Zip:	Quote No.:

TAT Turnaround Codes **

(1) = Same Day Rush
(2) = 24 Hour Rush
(3) = 48 Hour Rush
(4) = 72 Hour Rush
(5) = 5 Day Rush
X = 10 Working Days (Standard TAT)

* → (3)

ANALYSIS REQUESTED (Test Name)

Please enter the TAT Turnaround Codes ** below

Client I.D.	A.A. I.D.	Date	Time	Sample Matrix	No. of Cont	TPH (8015M)	Metals (6010B)	Metals (6020) 2006	VOCs (8260B)	Special Instructions
TP-1-1.5	8F21005-01	6/21/18	0910	Soil	3	X	X			*: 48-hr Rush as requested by K.J. on 6/22/18
TP-1-2.5	-02		0920		3	X	X			
TP-2-0.5	-03		1010		3	X	X			
TP-2-2.5	-04		1020		3	X	X			
TP-2-2.5DUP	-05		1020		3	X	X			
EB-062018	-06	6/20/18	1630	Water	5	X		X	X	

For Laboratory Use

REVIEWED
Date 6/21/18 Time 1530
TAT N Days Sign:

A.A. Project No.: A94899/8F21005

Relinquished by	Date	Time	Received by
	6/21/18	1245	
	6-21-18	203	
	Date	Time	Received by

Note: By relinquishing samples to American Analytics, client agrees to pay for the services requested on this chain of custody form and any additional client-requested analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 45 days following the submittal of the sample(s) to American Analytics.

AMERICAN ANALYTICS

9765 Eton Avenue
Chatsworth
California 91311
Tel: (818) 998-5547
Fax: (818) 998-7258

July 03, 2018

Kaleena Johnson

AECOM (LA)

300 S. Grand Ave., Suite 800

Los Angeles, CA 90017

Re : 128 Hurricane - Soil & GW

A948102 / 8F28008

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received on 06/28/18 17:36 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Program Manual, applicable standard operating procedures, and other related documentation. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report or require additional information please call me at American Analytics.

Sincerely,



Viorel Vasile

Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
Carbon Chain Characterization 8015M					
SO-1-2.5	8F28008-01	Soil	2	06/28/18 08:40	06/28/18 17:36
SO-2-2.5	8F28008-02	Soil	2	06/28/18 08:48	06/28/18 17:36
SO-2-3.5	8F28008-03	Soil	2	06/28/18 08:51	06/28/18 17:36
SO-2-5	8F28008-04	Soil	2	06/28/18 08:54	06/28/18 17:36
SO-3-2.5	8F28008-05	Soil	2	06/28/18 09:30	06/28/18 17:36
SO-3-3.5	8F28008-06	Soil	2	06/28/18 09:35	06/28/18 17:36
SO-3-5	8F28008-07	Soil	2	06/28/18 09:40	06/28/18 17:36
SO-3-10	8F28008-08	Soil	2	06/28/18 09:55	06/28/18 17:36
SO-3	8F28008-09	Water	2	06/28/18 10:00	06/28/18 17:36
SO-4-2.5	8F28008-10	Soil	2	06/28/18 10:22	06/28/18 17:36
SO-4-3.5	8F28008-11	Soil	2	06/28/18 10:25	06/28/18 17:36
SO-4-5	8F28008-12	Soil	2	06/28/18 10:28	06/28/18 17:36
SO-4-5DUP	8F28008-13	Soil	2	06/28/18 10:28	06/28/18 17:36
SO-5-2.5	8F28008-14	Soil	2	06/28/18 10:45	06/28/18 17:36
SO-5-3.5	8F28008-15	Soil	2	06/28/18 10:50	06/28/18 17:36
SO-5-5	8F28008-16	Soil	2	06/28/18 10:53	06/28/18 17:36
SO-6-0.5	8F28008-17	Soil	2	06/28/18 10:58	06/28/18 17:36
SO-6-2.5	8F28008-18	Soil	2	06/28/18 11:04	06/28/18 17:36
SO-6-3.5	8F28008-19	Soil	2	06/28/18 11:08	06/28/18 17:36



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
SO-6-5	8F28008-20	Soil	2	06/28/18 11:10	06/28/18 17:36
SO-7-2.5	8F28008-21	Soil	2	06/28/18 11:22	06/28/18 17:36
SO-7-3.5	8F28008-22	Soil	2	06/28/18 11:30	06/28/18 17:36
SO-7-5	8F28008-23	Soil	2	06/28/18 11:46	06/28/18 17:36
SO-7-5DUP	8F28008-24	Soil	2	06/28/18 11:46	06/28/18 17:36
SO-8-2.5	8F28008-25	Soil	2	06/28/18 12:40	06/28/18 17:36
SO-8-3.5	8F28008-26	Soil	2	06/28/18 12:50	06/28/18 17:36
SO-8-5	8F28008-27	Soil	2	06/28/18 12:55	06/28/18 17:36
SO-8-10	8F28008-28	Soil	2	06/28/18 13:05	06/28/18 17:36
SO-8	8F28008-29	Water	2	06/28/18 13:15	06/28/18 17:36
SO-9-2.5	8F28008-30	Soil	2	06/28/18 13:33	06/28/18 17:36
SO-9-3.5	8F28008-31	Soil	2	06/28/18 13:35	06/28/18 17:36
SO-9-5	8F28008-32	Soil	2	06/28/18 13:40	06/28/18 17:36
SO-12-2.5	8F28008-33	Soil	2	06/28/18 13:50	06/28/18 17:36
SO-12-3.5	8F28008-34	Soil	2	06/28/18 13:57	06/28/18 17:36
SO-12-5	8F28008-35	Soil	2	06/28/18 14:05	06/28/18 17:36
SO-10-2.5	8F28008-36	Soil	2	06/28/18 14:12	06/28/18 17:36
SO-10-3.5	8F28008-37	Soil	2	06/28/18 14:18	06/28/18 17:36
SO-11-2.5	8F28008-38	Soil	2	06/28/18 14:29	06/28/18 17:36
SO-11-3.5	8F28008-39	Soil	2	06/28/18 14:33	06/28/18 17:36



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
SO-13-2.5	8F28008-40	Soil	2	06/28/18 14:49	06/28/18 17:36
SO-13-3.5	8F28008-41	Soil	2	06/28/18 14:53	06/28/18 17:36
SO-13-5	8F28008-42	Soil	2	06/28/18 14:55	06/28/18 17:36
SO-13-10	8F28008-43	Soil	2	06/28/18 15:00	06/28/18 17:36
SO-13-5DUP	8F28008-44	Soil	2	06/28/18 14:55	06/28/18 17:36
SO-13	8F28008-45	Water	2	06/28/18 15:05	06/28/18 17:36
EB-062318	8F28008-46	Water	2	06/28/18 15:25	06/28/18 17:36
Chloride by Ion Chromatography					
SO-3	8F28008-09	Water	2	06/28/18 10:00	06/28/18 17:36
SO-8	8F28008-29	Water	2	06/28/18 13:15	06/28/18 17:36
SO-13	8F28008-45	Water	2	06/28/18 15:05	06/28/18 17:36
Conductivity SM2510 B					
SO-3	8F28008-09	Water	2	06/28/18 10:00	06/28/18 17:36
SO-8	8F28008-29	Water	2	06/28/18 13:15	06/28/18 17:36
SO-13	8F28008-45	Water	2	06/28/18 15:05	06/28/18 17:36
Hardness SM2340C					
SO-3	8F28008-09	Water	2	06/28/18 10:00	06/28/18 17:36
SO-8	8F28008-29	Water	2	06/28/18 13:15	06/28/18 17:36
SO-13	8F28008-45	Water	2	06/28/18 15:05	06/28/18 17:36



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
Lead Total EPA 6010B					
SO-1-2.5	8F28008-01	Soil	2	06/28/18 08:40	06/28/18 17:36
SO-2-2.5	8F28008-02	Soil	2	06/28/18 08:48	06/28/18 17:36
SO-2-3.5	8F28008-03	Soil	2	06/28/18 08:51	06/28/18 17:36
SO-2-5	8F28008-04	Soil	2	06/28/18 08:54	06/28/18 17:36
SO-3-2.5	8F28008-05	Soil	2	06/28/18 09:30	06/28/18 17:36
SO-3-3.5	8F28008-06	Soil	2	06/28/18 09:35	06/28/18 17:36
SO-3-5	8F28008-07	Soil	2	06/28/18 09:40	06/28/18 17:36
SO-3-10	8F28008-08	Soil	2	06/28/18 09:55	06/28/18 17:36
SO-4-2.5	8F28008-10	Soil	2	06/28/18 10:22	06/28/18 17:36
SO-4-3.5	8F28008-11	Soil	2	06/28/18 10:25	06/28/18 17:36
SO-4-5	8F28008-12	Soil	2	06/28/18 10:28	06/28/18 17:36
SO-4-5DUP	8F28008-13	Soil	2	06/28/18 10:28	06/28/18 17:36
SO-5-2.5	8F28008-14	Soil	2	06/28/18 10:45	06/28/18 17:36
SO-5-3.5	8F28008-15	Soil	2	06/28/18 10:50	06/28/18 17:36
SO-5-5	8F28008-16	Soil	2	06/28/18 10:53	06/28/18 17:36
SO-6-0.5	8F28008-17	Soil	2	06/28/18 10:58	06/28/18 17:36
SO-6-2.5	8F28008-18	Soil	2	06/28/18 11:04	06/28/18 17:36
SO-6-3.5	8F28008-19	Soil	2	06/28/18 11:08	06/28/18 17:36
SO-6-5	8F28008-20	Soil	2	06/28/18 11:10	06/28/18 17:36



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
SO-7-2.5	8F28008-21	Soil	2	06/28/18 11:22	06/28/18 17:36
SO-7-3.5	8F28008-22	Soil	2	06/28/18 11:30	06/28/18 17:36
SO-7-5	8F28008-23	Soil	2	06/28/18 11:46	06/28/18 17:36
SO-7-5DUP	8F28008-24	Soil	2	06/28/18 11:46	06/28/18 17:36
SO-8-2.5	8F28008-25	Soil	2	06/28/18 12:40	06/28/18 17:36
SO-8-3.5	8F28008-26	Soil	2	06/28/18 12:50	06/28/18 17:36
SO-8-5	8F28008-27	Soil	2	06/28/18 12:55	06/28/18 17:36
SO-8-10	8F28008-28	Soil	2	06/28/18 13:05	06/28/18 17:36
SO-9-2.5	8F28008-30	Soil	2	06/28/18 13:33	06/28/18 17:36
SO-9-3.5	8F28008-31	Soil	2	06/28/18 13:35	06/28/18 17:36
SO-9-5	8F28008-32	Soil	2	06/28/18 13:40	06/28/18 17:36
SO-12-2.5	8F28008-33	Soil	2	06/28/18 13:50	06/28/18 17:36
SO-12-3.5	8F28008-34	Soil	2	06/28/18 13:57	06/28/18 17:36
SO-12-5	8F28008-35	Soil	2	06/28/18 14:05	06/28/18 17:36
SO-10-2.5	8F28008-36	Soil	2	06/28/18 14:12	06/28/18 17:36
SO-10-3.5	8F28008-37	Soil	2	06/28/18 14:18	06/28/18 17:36
SO-11-2.5	8F28008-38	Soil	2	06/28/18 14:29	06/28/18 17:36
SO-11-3.5	8F28008-39	Soil	2	06/28/18 14:33	06/28/18 17:36
SO-13-2.5	8F28008-40	Soil	2	06/28/18 14:49	06/28/18 17:36
SO-13-3.5	8F28008-41	Soil	2	06/28/18 14:53	06/28/18 17:36



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
SO-13-5	8F28008-42	Soil	2	06/28/18 14:55	06/28/18 17:36
SO-13-10	8F28008-43	Soil	2	06/28/18 15:00	06/28/18 17:36
SO-13-5DUP	8F28008-44	Soil	2	06/28/18 14:55	06/28/18 17:36
Nitrate as N by Ion Chromatography					
SO-3	8F28008-09	Water	2	06/28/18 10:00	06/28/18 17:36
SO-8	8F28008-29	Water	2	06/28/18 13:15	06/28/18 17:36
SO-13	8F28008-45	Water	2	06/28/18 15:05	06/28/18 17:36
pH Measurement SM4500H+ B					
SO-3	8F28008-09	Water	2	06/28/18 10:00	06/28/18 17:36
SO-8	8F28008-29	Water	2	06/28/18 13:15	06/28/18 17:36
SO-13	8F28008-45	Water	2	06/28/18 15:05	06/28/18 17:36
Salinity SM 2520					
SO-3	8F28008-09	Water	2	06/28/18 10:00	06/28/18 17:36
SO-8	8F28008-29	Water	2	06/28/18 13:15	06/28/18 17:36
SO-13	8F28008-45	Water	2	06/28/18 15:05	06/28/18 17:36
Sulfate by Ion Chromatography					
SO-3	8F28008-09	Water	2	06/28/18 10:00	06/28/18 17:36
SO-8	8F28008-29	Water	2	06/28/18 13:15	06/28/18 17:36

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
SO-13	8F28008-45	Water	2	06/28/18 15:05	06/28/18 17:36
TDS SM2540C					
SO-3	8F28008-09	Water	2	06/28/18 10:00	06/28/18 17:36
SO-8	8F28008-29	Water	2	06/28/18 13:15	06/28/18 17:36
SO-13	8F28008-45	Water	2	06/28/18 15:05	06/28/18 17:36

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client:	AECOM (LA)	**AA Project No:**	A948102
Project No:	NA	**Date Received:**	06/28/18
Project Name:	128 Hurricane - Soil & GW	**Date Reported:**	07/03/18
Method:	Carbon Chain by GC/FID	**Units:**	mg/kg

Date Sampled:	06/28/18	06/28/18	06/28/18	06/28/18	
Date Prepared:	06/29/18	06/29/18	06/29/18	06/29/18	
Date Analyzed:	06/29/18	06/29/18	06/29/18	06/30/18	
AA ID No:	8F28008-01	8F28008-02	8F28008-03	8F28008-04	
Client ID No:	SO-1-2.5	SO-2-2.5	SO-2-3.5	SO-2-5	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	10	10	1	MRL
Carbon Chain Characterization 8015M (EPA 8015M)					
C6-C8	<1.0	<10	<10	<1.0	1.0
C8-C10	<1.0	<10	<10	<1.0	1.0
C10-C12	<1.0	<10	**19**	<1.0	1.0
C12-C14	<1.0	<10	**110**	<1.0	1.0
C14-C16	<1.0	<10	**180**	<1.0	1.0
C16-C18	<1.0	<10	**270**	<1.0	1.0
C18-C20	**1.8**	<10	**240**	<1.0	1.0
C20-C22	**4.4**	**53**	**280**	<1.0	1.0
C22-C24	**8.8**	**92**	**320**	<1.0	1.0
C24-C26	**10**	**80**	**260**	<1.0	1.0
C26-C28	**16**	**190**	**310**	<1.0	1.0
C28-C32	**45**	**430**	**560**	<1.0	1.0
C32-C34	**16**	**140**	**150**	<1.0	1.0
C34-C36	**13**	**140**	**130**	<1.0	1.0
C36-C40	**24**	**140**	**190**	**1.5**	1.0
C40-C44	**16**	**130**	**120**	**5.1**	1.0
TPH (C6-C44)	**160**	**1400**	**3100**	<10	10
Gasoline Range Organics (C6-C10)	<5.0	<50	<50	<5.0	5.0
Diesel Range Organics (C10-C23)	**11**	**99**	**1300**	<5.0	5.0
Oil Range Organics (C23-C44)	**150**	**1300**	**1900**	**6.6**	5.0
Surrogates					**%REC Limits**
o-Terphenyl	121%	105%	95%	95%	50-150

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Carbon Chain by GC/FID

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18
Units: mg/kg

Date Sampled:	06/28/18	06/28/18	06/28/18	06/28/18	
Date Prepared:	06/29/18	06/29/18	06/29/18	06/29/18	
Date Analyzed:	06/30/18	06/30/18	06/30/18	06/30/18	
AA ID No:	8F28008-05	8F28008-06	8F28008-07	8F28008-08	
Client ID No:	SO-3-2.5	SO-3-3.5	SO-3-5	SO-3-10	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL
Carbon Chain Characterization 8015M (EPA 8015M)					
C6-C8	<1.0	<1.0	<1.0	<1.0	1.0
C8-C10	<1.0	<1.0	<1.0	<1.0	1.0
C10-C12	<1.0	<1.0	<1.0	<1.0	1.0
C12-C14	<1.0	<1.0	<1.0	<1.0	1.0
C14-C16	<1.0	<1.0	<1.0	<1.0	1.0
C16-C18	<1.0	<1.0	<1.0	<1.0	1.0
C18-C20	<1.0	<1.0	<1.0	<1.0	1.0
C20-C22	<1.0	<1.0	<1.0	<1.0	1.0
C22-C24	<1.0	<1.0	<1.0	<1.0	1.0
C24-C26	<1.0	<1.0	<1.0	<1.0	1.0
C26-C28	**2.8**	<1.0	<1.0	<1.0	1.0
C28-C32	**7.8**	<1.0	**1.7**	<1.0	1.0
C32-C34	**1.8**	<1.0	<1.0	<1.0	1.0
C34-C36	**1.7**	<1.0	<1.0	<1.0	1.0
C36-C40	**3.4**	<1.0	<1.0	<1.0	1.0
C40-C44	**2.9**	<1.0	<1.0	**1.6**	1.0
TPH (C6-C44)	**20**	<10	<10	<10	10
Gasoline Range Organics (C6-C10)	<5.0	<5.0	<5.0	<5.0	5.0
Diesel Range Organics (C10-C23)	<5.0	<5.0	<5.0	<5.0	5.0
Oil Range Organics (C23-C44)	**20**	<5.0	<5.0	<5.0	5.0
Surrogates					**%REC Limits**
o-Terphenyl	95%	96%	98%	95%	50-150



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Carbon Chain by GC/FID

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18
Units: mg/kg

Date Sampled:	06/28/18	06/28/18	06/28/18	06/28/18	
Date Prepared:	06/29/18	06/29/18	06/29/18	06/29/18	
Date Analyzed:	07/02/18	06/30/18	07/02/18	06/30/18	
AA ID No:	8F28008-10	8F28008-11	8F28008-12	8F28008-13	
Client ID No:	SO-4-2.5	SO-4-3.5	SO-4-5	SO-4-5DUP	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL
Carbon Chain Characterization 8015M (EPA 8015M)					
C6-C8	<1.0	<1.0	<1.0	<1.0	1.0
C8-C10	<1.0	<1.0	<1.0	<1.0	1.0
C10-C12	<1.0	<1.0	<1.0	<1.0	1.0
C12-C14	<1.0	<1.0	<1.0	<1.0	1.0
C14-C16	<1.0	<1.0	<1.0	<1.0	1.0
C16-C18	**5.7**	<1.0	<1.0	<1.0	1.0
C18-C20	**11**	<1.0	<1.0	<1.0	1.0
C20-C22	**19**	<1.0	**4.2**	<1.0	1.0
C22-C24	**33**	<1.0	**13**	<1.0	1.0
C24-C26	**35**	<1.0	**19**	<1.0	1.0
C26-C28	**53**	<1.0	**41**	**1.3**	1.0
C28-C32	**130**	<1.0	**110**	**3.4**	1.0
C32-C34	**41**	<1.0	**35**	<1.0	1.0
C34-C36	**34**	<1.0	**32**	<1.0	1.0
C36-C40	**34**	<1.0	**49**	**1.8**	1.0
C40-C44	**28**	**2.6**	**39**	**1.0**	1.0
TPH (C6-C44)	**430**	<10	**340**	<10	10
Gasoline Range Organics (C6-C10)	<5.0	<5.0	<5.0	<5.0	5.0
Diesel Range Organics (C10-C23)	**53**	<5.0	**11**	<5.0	5.0
Oil Range Organics (C23-C44)	**370**	<5.0	**330**	**7.5**	5.0
Surrogates					**%REC Limits**
o-Terphenyl	78%	93%	93%	97%	50-150

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client:	AECOM (LA)	**AA Project No:**	A948102
Project No:	NA	**Date Received:**	06/28/18
Project Name:	128 Hurricane - Soil & GW	**Date Reported:**	07/03/18
Method:	Carbon Chain by GC/FID	**Units:**	mg/kg

Date Sampled:	06/28/18	06/28/18	06/28/18	06/28/18	
Date Prepared:	06/29/18	06/29/18	06/29/18	06/29/18	
Date Analyzed:	06/30/18	06/30/18	06/30/18	07/02/18	
AA ID No:	8F28008-14	8F28008-15	8F28008-16	8F28008-17	
Client ID No:	SO-5-2.5	SO-5-3.5	SO-5-5	SO-6-0.5	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL
Carbon Chain Characterization 8015M (EPA 8015M)					
C6-C8	<1.0	<1.0	<1.0	<1.0	1.0
C8-C10	<1.0	<1.0	<1.0	<1.0	1.0
C10-C12	<1.0	<1.0	<1.0	<1.0	1.0
C12-C14	<1.0	<1.0	<1.0	<1.0	1.0
C14-C16	<1.0	<1.0	<1.0	<1.0	1.0
C16-C18	<1.0	<1.0	<1.0	<1.0	1.0
C18-C20	<1.0	<1.0	<1.0	<1.0	1.0
C20-C22	<1.0	<1.0	<1.0	<1.0	1.0
C22-C24	<1.0	<1.0	<1.0	**2.3**	1.0
C24-C26	<1.0	<1.0	<1.0	**2.8**	1.0
C26-C28	<1.0	<1.0	<1.0	**8.3**	1.0
C28-C32	**2.7**	**2.2**	<1.0	**25**	1.0
C32-C34	<1.0	<1.0	<1.0	**9.1**	1.0
C34-C36	<1.0	<1.0	<1.0	**6.7**	1.0
C36-C40	<1.0	<1.0	<1.0	**15**	1.0
C40-C44	<1.0	<1.0	**1.7**	**9.5**	1.0
TPH (C6-C44)	<10	<10	<10	**79**	10
Gasoline Range Organics (C6-C10)	<5.0	<5.0	<5.0	<5.0	5.0
Diesel Range Organics (C10-C23)	<5.0	<5.0	<5.0	<5.0	5.0
Oil Range Organics (C23-C44)	<5.0	<5.0	<5.0	**78**	5.0
Surrogates					**%REC Limits**
o-Terphenyl	94%	96%	97%	92%	50-150

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Carbon Chain by GC/FID

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18
Units: mg/kg

Date Sampled:	06/28/18	06/28/18	06/28/18	06/28/18	
Date Prepared:	06/29/18	06/29/18	06/29/18	06/29/18	
Date Analyzed:	06/30/18	06/30/18	06/30/18	06/30/18	
AA ID No:	8F28008-18	8F28008-19	8F28008-20	8F28008-21	
Client ID No:	SO-6-2.5	SO-6-3.5	SO-6-5	SO-7-2.5	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	10	1	1	1	MRL
Carbon Chain Characterization 8015M (EPA 8015M)					
C6-C8	<10	<1.0	<1.0	<1.0	1.0
C8-C10	<10	<1.0	<1.0	<1.0	1.0
C10-C12	<10	<1.0	<1.0	<1.0	1.0
C12-C14	<10	<1.0	<1.0	<1.0	1.0
C14-C16	<10	<1.0	<1.0	<1.0	1.0
C16-C18	**24**	<1.0	<1.0	<1.0	1.0
C18-C20	**41**	<1.0	<1.0	<1.0	1.0
C20-C22	**63**	<1.0	<1.0	<1.0	1.0
C22-C24	**96**	<1.0	<1.0	<1.0	1.0
C24-C26	**110**	<1.0	<1.0	<1.0	1.0
C26-C28	**160**	<1.0	<1.0	<1.0	1.0
C28-C32	**360**	<1.0	<1.0	**2.9**	1.0
C32-C34	**100**	<1.0	<1.0	<1.0	1.0
C34-C36	**85**	<1.0	<1.0	<1.0	1.0
C36-C40	**120**	<1.0	<1.0	**1.7**	1.0
C40-C44	**79**	**1.5**	<1.0	**1.9**	1.0
TPH (C6-C44)	**1200**	<10	<10	<10	10
Gasoline Range Organics (C6-C10)	<50	<5.0	<5.0	<5.0	5.0
Diesel Range Organics (C10-C23)	**180**	<5.0	<5.0	<5.0	5.0
Oil Range Organics (C23-C44)	**1100**	<5.0	<5.0	**6.5**	5.0
Surrogates					**%REC Limits**
o-Terphenyl	89%	98%	99%	83%	50-150

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Carbon Chain by GC/FID

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18
Units: mg/kg

Date Sampled:	06/28/18	06/28/18	06/28/18	06/28/18	
Date Prepared:	06/29/18	06/29/18	06/29/18	06/29/18	
Date Analyzed:	06/30/18	06/30/18	06/30/18	06/30/18	
AA ID No:	8F28008-22	8F28008-23	8F28008-24	8F28008-25	
Client ID No:	SO-7-3.5	SO-7-5	SO-7-5DUP	SO-8-2.5	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	10	MRL
Carbon Chain Characterization 8015M (EPA 8015M)					
C6-C8	<1.0	<1.0	<1.0	<10	1.0
C8-C10	<1.0	<1.0	<1.0	<10	1.0
C10-C12	<1.0	<1.0	<1.0	**10**	1.0
C12-C14	<1.0	<1.0	<1.0	**65**	1.0
C14-C16	<1.0	<1.0	<1.0	**150**	1.0
C16-C18	<1.0	<1.0	<1.0	**270**	1.0
C18-C20	<1.0	**1.7**	<1.0	**360**	1.0
C20-C22	<1.0	**2.5**	<1.0	**480**	1.0
C22-C24	<1.0	**4.2**	**1.6**	**650**	1.0
C24-C26	<1.0	**4.3**	**1.4**	**560**	1.0
C26-C28	**1.7**	**6.3**	**3.8**	**830**	1.0
C28-C32	**4.5**	**15**	**8.4**	**1700**	1.0
C32-C34	<1.0	**3.6**	**2.3**	**490**	1.0
C34-C36	<1.0	**3.3**	**1.7**	**290**	1.0
C36-C40	**1.3**	**2.8**	**2.8**	**520**	1.0
C40-C44	**1.5**	**1.6**	**2.3**	**330**	1.0
TPH (C6-C44)	<10	**46**	**24**	**6800**	10
Gasoline Range Organics (C6-C10)	<5.0	<5.0	<5.0	<50	5.0
Diesel Range Organics (C10-C23)	<5.0	**6.4**	<5.0	**1700**	5.0
Oil Range Organics (C23-C44)	**9.0**	**39**	**24**	**5100**	5.0
Surrogates					**%REC Limits**
o-Terphenyl	78%	89%	86%	66%	50-150

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Carbon Chain by GC/FID

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18
Units: mg/kg

Date Sampled:	06/28/18	06/28/18	06/28/18	06/28/18	
Date Prepared:	06/29/18	06/29/18	06/29/18	06/29/18	
Date Analyzed:	06/30/18	06/30/18	06/30/18	06/30/18	
AA ID No:	8F28008-26	8F28008-27	8F28008-28	8F28008-30	
Client ID No:	SO-8-3.5	SO-8-5	SO-8-10	SO-9-2.5	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	10	MRL
Carbon Chain Characterization 8015M (EPA 8015M)					
C6-C8	<1.0	<1.0	<1.0	<10	1.0
C8-C10	<1.0	<1.0	<1.0	**58**	1.0
C10-C12	<1.0	<1.0	<1.0	**160**	1.0
C12-C14	<1.0	<1.0	<1.0	**460**	1.0
C14-C16	<1.0	<1.0	<1.0	**670**	1.0
C16-C18	<1.0	<1.0	<1.0	**860**	1.0
C18-C20	<1.0	<1.0	<1.0	**810**	1.0
C20-C22	<1.0	<1.0	<1.0	**1000**	1.0
C22-C24	<1.0	<1.0	<1.0	**1200**	1.0
C24-C26	<1.0	<1.0	<1.0	**1000**	1.0
C26-C28	<1.0	<1.0	<1.0	**1400**	1.0
C28-C32	**3.1**	<1.0	<1.0	**2700**	1.0
C32-C34	**1.2**	<1.0	<1.0	**690**	1.0
C34-C36	**1.3**	<1.0	<1.0	**560**	1.0
C36-C40	**5.5**	**1.6**	<1.0	**860**	1.0
C40-C44	**8.3**	**3.4**	**1.1**	**390**	1.0
TPH (C6-C44)	**19**	<10	<10	**13000**	10
Gasoline Range Organics (C6-C10)	<5.0	<5.0	<5.0	**58**	5.0
Diesel Range Organics (C10-C23)	<5.0	<5.0	<5.0	**4600**	5.0
Oil Range Organics (C23-C44)	**19**	**5.0**	<5.0	**8200**	5.0
Surrogates					**%REC Limits**
o-Terphenyl	91%	85%	87%	130%	50-150

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client:	AECOM (LA)	**AA Project No:**	A948102
Project No:	NA	**Date Received:**	06/28/18
Project Name:	128 Hurricane - Soil & GW	**Date Reported:**	07/03/18
Method:	Carbon Chain by GC/FID	**Units:**	mg/kg

Date Sampled:	06/28/18	06/28/18	06/28/18	06/28/18	
Date Prepared:	06/29/18	06/29/18	06/29/18	06/29/18	
Date Analyzed:	06/30/18	06/30/18	06/30/18	07/02/18	
AA ID No:	8F28008-31	8F28008-32	8F28008-33	8F28008-34	
Client ID No:	SO-9-3.5	SO-9-5	SO-12-2.5	SO-12-3.5	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	1	MRL
Carbon Chain Characterization 8015M (EPA 8015M)					
C6-C8	<1.0	<1.0	<1.0	<1.0	1.0
C8-C10	<1.0	<1.0	<1.0	**7.4**	1.0
C10-C12	<1.0	<1.0	<1.0	**10**	1.0
C12-C14	**2.9**	<1.0	<1.0	**15**	1.0
C14-C16	**5.3**	<1.0	<1.0	**18**	1.0
C16-C18	**9.8**	<1.0	<1.0	**24**	1.0
C18-C20	**13**	<1.0	**3.8**	**25**	1.0
C20-C22	**17**	<1.0	**8.8**	**36**	1.0
C22-C24	**26**	<1.0	**40**	**49**	1.0
C24-C26	**24**	<1.0	**82**	**50**	1.0
C26-C28	**32**	<1.0	**130**	**64**	1.0
C28-C32	**78**	<1.0	**300**	**110**	1.0
C32-C34	**24**	<1.0	**71**	**40**	1.0
C34-C36	**21**	<1.0	**64**	**32**	1.0
C36-C40	**24**	**2.7**	**140**	**60**	1.0
C40-C44	**25**	**5.6**	**89**	**35**	1.0
TPH (C6-C44)	**300**	<10	**920**	**580**	10
Gasoline Range Organics (C6-C10)	<5.0	<5.0	<5.0	**7.4**	5.0
Diesel Range Organics (C10-C23)	**61**	<5.0	**33**	**150**	5.0
Oil Range Organics (C23-C44)	**240**	**8.2**	**890**	**420**	5.0
Surrogates					**%REC Limits**
o-Terphenyl	81%	89%	88%	78%	50-150

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Carbon Chain by GC/FID

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18
Units: mg/kg

Date Sampled:	06/28/18	06/28/18	06/28/18	06/28/18	
Date Prepared:	06/29/18	06/29/18	06/29/18	06/29/18	
Date Analyzed:	07/02/18	06/30/18	06/30/18	06/30/18	
AA ID No:	8F28008-35	8F28008-36	8F28008-37	8F28008-38	
Client ID No:	SO-12-5	SO-10-2.5	SO-10-3.5	SO-11-2.5	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	1	1	10	MRL
Carbon Chain Characterization 8015M (EPA 8015M)					
C6-C8	<1.0	<1.0	<1.0	<10	1.0
C8-C10	<1.0	<1.0	<1.0	<10	1.0
C10-C12	**1.9**	<1.0	<1.0	<10	1.0
C12-C14	**1.1**	<1.0	<1.0	<10	1.0
C14-C16	**1.4**	<1.0	<1.0	<10	1.0
C16-C18	**4.1**	<1.0	<1.0	**33**	1.0
C18-C20	**17**	<1.0	<1.0	**59**	1.0
C20-C22	**68**	<1.0	<1.0	**94**	1.0
C22-C24	**150**	<1.0	<1.0	**130**	1.0
C24-C26	**200**	<1.0	<1.0	**120**	1.0
C26-C28	**260**	**2.7**	<1.0	**190**	1.0
C28-C32	**410**	**8.9**	<1.0	**460**	1.0
C32-C34	**140**	**2.5**	<1.0	**120**	1.0
C34-C36	**110**	**2.8**	<1.0	**81**	1.0
C36-C40	**220**	**7.6**	**3.2**	**140**	1.0
C40-C44	**160**	**7.3**	**4.2**	**110**	1.0
TPH (C6-C44)	**1700**	**32**	<10	**1500**	10
Gasoline Range Organics (C6-C10)	<5.0	<5.0	<5.0	<50	5.0
Diesel Range Organics (C10-C23)	**170**	<5.0	<5.0	**250**	5.0
Oil Range Organics (C23-C44)	**1600**	**32**	**7.5**	**1300**	5.0
Surrogates					**%REC Limits**
o-Terphenyl	74%	84%	87%	119%	50-150

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Carbon Chain by GC/FID

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18
Units: mg/kg

Date Sampled:	06/28/18	06/28/18	06/28/18	06/28/18	
Date Prepared:	06/29/18	06/29/18	06/29/18	06/29/18	
Date Analyzed:	07/02/18	06/30/18	06/30/18	06/30/18	
AA ID No:	8F28008-39	8F28008-40	8F28008-41	8F28008-42	
Client ID No:	SO-11-3.5	SO-13-2.5	SO-13-3.5	SO-13-5	
Matrix:	Soil	Soil	Soil	Soil	
Dilution Factor:	1	10	1	1	MRL
Carbon Chain Characterization 8015M (EPA 8015M)					
C6-C8	<1.0	<10	<1.0	<1.0	1.0
C8-C10	<1.0	<10	<1.0	<1.0	1.0
C10-C12	<1.0	**25**	<1.0	<1.0	1.0
C12-C14	<1.0	**120**	<1.0	<1.0	1.0
C14-C16	<1.0	**220**	<1.0	<1.0	1.0
C16-C18	<1.0	**340**	<1.0	<1.0	1.0
C18-C20	**1.1**	**360**	<1.0	<1.0	1.0
C20-C22	**3.0**	**530**	<1.0	<1.0	1.0
C22-C24	**5.6**	**590**	<1.0	<1.0	1.0
C24-C26	**5.0**	**550**	<1.0	<1.0	1.0
C26-C28	**11**	**660**	<1.0	<1.0	1.0
C28-C32	**32**	**1200**	<1.0	**1.1**	1.0
C32-C34	**9.8**	**320**	<1.0	<1.0	1.0
C34-C36	**12**	**210**	<1.0	<1.0	1.0
C36-C40	**26**	**340**	**3.8**	**1.8**	1.0
C40-C44	**23**	**140**	**5.9**	**3.8**	1.0
TPH (C6-C44)	**130**	**5600**	<10	<10	10
Gasoline Range Organics (C6-C10)	<5.0	<50	<5.0	<5.0	5.0
Diesel Range Organics (C10-C23)	**7.0**	**1900**	<5.0	<5.0	5.0
Oil Range Organics (C23-C44)	**120**	**3700**	**9.7**	**6.6**	5.0
Surrogates					**%REC Limits**
o-Terphenyl	89%	61%	89%	88%	50-150

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Carbon Chain by GC/FID

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18
Units: mg/kg

Date Sampled:	06/28/18	06/28/18	
Date Prepared:	06/29/18	06/29/18	
Date Analyzed:	06/30/18	07/01/18	
AA ID No:	8F28008-43	8F28008-44	
Client ID No:	SO-13-10	SO-13-5DUP	
Matrix:	Soil	Soil	
Dilution Factor:	1	1	MRL
Carbon Chain Characterization 8015M (EPA 8015M)			
C6-C8	<1.0	<1.0	1.0
C8-C10	<1.0	<1.0	1.0
C10-C12	<1.0	<1.0	1.0
C12-C14	<1.0	<1.0	1.0
C14-C16	<1.0	<1.0	1.0
C16-C18	<1.0	<1.0	1.0
C18-C20	<1.0	<1.0	1.0
C20-C22	<1.0	<1.0	1.0
C22-C24	<1.0	<1.0	1.0
C24-C26	<1.0	<1.0	1.0
C26-C28	<1.0	<1.0	1.0
C28-C32	<1.0	<1.0	1.0
C32-C34	<1.0	<1.0	1.0
C34-C36	<1.0	<1.0	1.0
C36-C40	<1.0	<1.0	1.0
C40-C44	**1.8**	**1.6**	1.0
TPH (C6-C44)	<10	<10	10
Gasoline Range Organics (C6-C10)	<5.0	<5.0	5.0
Diesel Range Organics (C10-C23)	<5.0	<5.0	5.0
Oil Range Organics (C23-C44)	<5.0	<5.0	5.0
Surrogates			**%REC Limits**
o-Terphenyl	90%	90%	50-150

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Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Chloride by Ion Chromatography

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18

AA I.D. No.	Client I.D. No.	Sampled	Prepared	Analyzed	Dilution	Result	Units	MRL
Chloride by Ion Chromatography (EPA 300.0)								
8F28008-09	SO-3	06/28/18	06/29/18	06/29/18	100	**1300**	mg/L	0.5
8F28008-29	SO-8	06/28/18	06/29/18	06/29/18	400	**3800**	mg/L	0.5
8F28008-45	SO-13	06/28/18	06/29/18	06/29/18	100	**1400**	mg/L	0.5



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LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Nitrate by Ion Chromatography

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18

AA I.D. No.	Client I.D. No.	Sampled	Prepared	Analyzed	Dilution	Result	Units	MRL
Nitrate as N by Ion Chromatography (EPA 300.0)								
8F28008-09	SO-3	06/28/18	06/29/18	06/29/18	1	**0.56**	mg/L	0.1
8F28008-29	SO-8	06/28/18	06/29/18	06/29/18	1	**0.60**	mg/L	0.1
8F28008-45	SO-13	06/28/18	06/29/18	06/29/18	1	**0.37**	mg/L	0.1

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LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Sulfate by Ion Chromatography

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18

AA I.D. No.	Client I.D. No.	Sampled	Prepared	Analyzed	Dilution	Result	Units	MRL
Sulfate by Ion Chromatography (EPA 300.0)								
8F28008-09	SO-3	06/28/18	06/29/18	06/29/18	20	**140**	mg/L	0.5
8F28008-29	SO-8	06/28/18	06/29/18	06/29/18	50	**560**	mg/L	0.5
8F28008-45	SO-13	06/28/18	06/29/18	06/29/18	20	**160**	mg/L	0.5



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LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: General Chemistry Analyses

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18

AA I.D. No.	Client I.D. No.	Sampled	Prepared	Analyzed	Dilution	Result	Units	MRL
Conductivity SM2510 B (SM2510 B)								
8F28008-09	SO-3	06/28/18	06/29/18	06/29/18	1	**5200**	umhos/cm	10
8F28008-29	SO-8	06/28/18	06/29/18	06/29/18	1	**14000**	umhos/cm	10
8F28008-45	SO-13	06/28/18	06/29/18	06/29/18	1	**5200**	umhos/cm	10
Hardness SM2340C (SM2340C)								
8F28008-09	SO-3	06/28/18	07/02/18	07/02/18	1	**680**	mg/L	2
8F28008-29	SO-8	06/28/18	07/02/18	07/02/18	1	**1600**	mg/L	2
8F28008-45	SO-13	06/28/18	07/02/18	07/02/18	1	**730**	mg/L	2
pH Measurement SM4500H+ B (SM4500H+ B) O-04								
8F28008-09	SO-3	06/28/18	06/29/18	06/29/18	1	**6.5**	pH Units	0.01
8F28008-29	SO-8	06/28/18	06/29/18	06/29/18	1	**6.5**	pH Units	0.01
8F28008-45	SO-13	06/28/18	06/29/18	06/29/18	1	**7.0**	pH Units	0.01
Salinity SM 2520 (SM 2520)								
8F28008-09	SO-3	06/28/18	06/29/18	06/29/18	1	**2.8**	Salinity units	0.1
8F28008-29	SO-8	06/28/18	06/29/18	06/29/18	1	**8.1**	Salinity units	0.1
8F28008-45	SO-13	06/28/18	06/29/18	06/29/18	1	**2.8**	Salinity units	0.1
TDS SM2540C (SM2540C)								
8F28008-09	SO-3	06/28/18	07/02/18	07/02/18	1	**3300**	mg/L	10
8F28008-29	SO-8	06/28/18	07/02/18	07/02/18	1	**8600**	mg/L	10

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LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: General Chemistry Analyses

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18

AA I.D. No.	Client I.D. No.	Sampled	Prepared	Analyzed	Dilution	Result	Units	MRL
TDS SM2540C (SM2540C)								
8F28008-45	SO-13	06/28/18	07/02/18	07/02/18	1	**3300**	mg/L	10

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LABORATORY ANALYSIS RESULTS

Client:	AECOM (LA)	**AA Project No:**	A948102
Project No:	NA	**Date Received:**	06/28/18
Project Name:	128 Hurricane - Soil & GW	**Date Reported:**	07/03/18
Method:	Carbon Chain by GC/FID	**Units:**	mg/L

Date Sampled:	06/28/18	06/28/18	06/28/18	06/28/18	
Date Prepared:	06/29/18	06/29/18	06/29/18	06/29/18	
Date Analyzed:	06/29/18	06/29/18	06/29/18	06/29/18	
AA ID No:	8F28008-09	8F28008-29	8F28008-45	8F28008-46	
Client ID No:	SO-3	SO-8	SO-13	EB-062318	
Matrix:	Water	Water	Water	Water	
Dilution Factor:	1	1	1	1	MRL
Carbon Chain Characterization 8015M (EPA 8015M)					
C6-C8	<0.010	<0.010	<0.010	<0.010	0.010
C8-C10	<0.010	<0.010	<0.010	<0.010	0.010
C10-C12	**0.019**	**0.020**	**0.010**	<0.010	0.010
C12-C14	**0.042**	**0.037**	**0.015**	<0.010	0.010
C14-C16	**0.052**	**0.072**	**0.027**	<0.010	0.010
C16-C18	**0.097**	**0.11**	**0.049**	<0.010	0.010
C18-C20	**0.081**	**0.072**	**0.053**	<0.010	0.010
C20-C22	**0.13**	**0.081**	**0.066**	<0.010	0.010
C22-C24	**0.099**	**0.068**	**0.073**	<0.010	0.010
C24-C26	**0.10**	**0.025**	**0.050**	<0.010	0.010
C26-C28	**0.092**	**0.035**	**0.050**	<0.010	0.010
C28-C32	**0.15**	**0.054**	**0.088**	<0.010	0.010
C32-C34	**0.053**	**0.022**	**0.033**	<0.010	0.010
C34-C36	**0.036**	**0.015**	**0.023**	<0.010	0.010
C36-C40	**0.046**	**0.019**	**0.036**	<0.010	0.010
C40-C44	**0.026**	**0.025**	**0.026**	<0.010	0.010
TPH (C6-C44)	**0.97**	**0.66**	**0.60**	<0.10	0.10
Gasoline Range Organics (C6-C10)	<0.10	<0.10	<0.10	<0.10	0.10
Diesel Range Organics (C10-C23)	**0.42**	**0.42**	**0.25**	<0.10	0.10
Oil Range Organics (C23-C44)	**0.56**	**0.23**	**0.34**	<0.10	0.10
Surrogates					**%REC Limits**
o-Terphenyl	66%	57%	60%	67%	50-150

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Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Total Metals by ICP Atomic Emission Spectroscopy

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18

AA I.D. No.	Client I.D. No.	Sampled	Prepared	Analyzed	Dilution	Result	Units	MRL
Lead Total EPA 6010B (EPA 6010B)								
8F28008-01	SO-1-2.5	06/28/18	06/29/18	07/02/18	1	**12**	mg/kg	3
8F28008-02	SO-2-2.5	06/28/18	06/29/18	07/02/18	1	**29**	mg/kg	3
8F28008-03	SO-2-3.5	06/28/18	06/29/18	07/02/18	1	<3.0	mg/kg	3
8F28008-04	SO-2-5	06/28/18	06/29/18	07/02/18	1	**160**	mg/kg	3
8F28008-05	SO-3-2.5	06/28/18	06/29/18	07/02/18	1	**5.0**	mg/kg	3
8F28008-06	SO-3-3.5	06/28/18	06/29/18	07/02/18	1	<3.0	mg/kg	3
8F28008-07	SO-3-5	06/28/18	06/29/18	07/02/18	1	**3.6**	mg/kg	3
8F28008-08	SO-3-10	06/28/18	06/29/18	07/02/18	1	<3.0	mg/kg	3
8F28008-10	SO-4-2.5	06/28/18	06/29/18	07/02/18	1	<3.0	mg/kg	3
8F28008-11	SO-4-3.5	06/28/18	06/29/18	07/02/18	1	<3.0	mg/kg	3
8F28008-12	SO-4-5	06/28/18	06/29/18	07/02/18	1	**10**	mg/kg	3
8F28008-13	SO-4-5DUP	06/28/18	06/29/18	07/02/18	1	**7.1**	mg/kg	3
8F28008-14	SO-5-2.5	06/28/18	06/29/18	07/02/18	1	**5.2**	mg/kg	3
8F28008-15	SO-5-3.5	06/28/18	06/29/18	07/02/18	1	**3.5**	mg/kg	3
8F28008-16	SO-5-5	06/28/18	06/29/18	07/02/18	1	**3.5**	mg/kg	3
8F28008-17	SO-6-0.5	06/28/18	06/29/18	07/02/18	1	**27**	mg/kg	3
8F28008-18	SO-6-2.5	06/28/18	06/29/18	07/02/18	1	**32**	mg/kg	3
8F28008-19	SO-6-3.5	06/28/18	06/29/18	07/02/18	1	**8.0**	mg/kg	3
8F28008-20	SO-6-5	06/28/18	06/29/18	07/02/18	1	<3.0	mg/kg	3
8F28008-21	SO-7-2.5	06/28/18	06/29/18	07/02/18	1	**7.0**	mg/kg	3
8F28008-22	SO-7-3.5	06/28/18	06/29/18	07/02/18	1	**7.8**	mg/kg	3
8F28008-23	SO-7-5	06/28/18	06/29/18	07/02/18	1	**6.7**	mg/kg	3
8F28008-24	SO-7-5DUP	06/28/18	06/29/18	07/02/18	1	**8.6**	mg/kg	3
8F28008-25	SO-8-2.5	06/28/18	06/29/18	07/02/18	1	**46**	mg/kg	3
8F28008-26	SO-8-3.5	06/28/18	06/29/18	07/02/18	1	<3.0	mg/kg	3



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LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: Total Metals by ICP Atomic Emission Spectroscopy

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18

AA I.D. No.	Client I.D. No.	Sampled	Prepared	Analyzed	Dilution	Result	Units	MRL
Lead Total EPA 6010B (EPA 6010B)								
8F28008-27	SO-8-5	06/28/18	06/29/18	07/02/18	1	<3.0	mg/kg	3
8F28008-28	SO-8-10	06/28/18	06/29/18	07/02/18	1	<3.0	mg/kg	3
8F28008-30	SO-9-2.5	06/28/18	06/29/18	07/02/18	1	**82**	mg/kg	3
8F28008-31	SO-9-3.5	06/28/18	06/29/18	07/02/18	1	<3.0	mg/kg	3
8F28008-32	SO-9-5	06/28/18	06/29/18	07/02/18	1	<3.0	mg/kg	3
8F28008-33	SO-12-2.5	06/28/18	06/29/18	07/02/18	1	**5.9**	mg/kg	3
8F28008-34	SO-12-3.5	06/28/18	06/29/18	07/02/18	1	**9.2**	mg/kg	3
8F28008-35	SO-12-5	06/28/18	06/29/18	07/02/18	1	**34**	mg/kg	3
8F28008-36	SO-10-2.5	06/28/18	06/29/18	07/02/18	1	**6.2**	mg/kg	3
8F28008-37	SO-10-3.5	06/28/18	06/29/18	07/02/18	1	**7.0**	mg/kg	3
8F28008-38	SO-11-2.5	06/28/18	06/29/18	07/02/18	1	**17**	mg/kg	3
8F28008-39	SO-11-3.5	06/28/18	06/29/18	07/02/18	1	**8.6**	mg/kg	3
8F28008-40	SO-13-2.5	06/28/18	06/29/18	07/02/18	1	**4.9**	mg/kg	3
8F28008-41	SO-13-3.5	06/28/18	06/29/18	07/02/18	1	<3.0	mg/kg	3
8F28008-42	SO-13-5	06/28/18	06/29/18	07/02/18	1	<3.0	mg/kg	3
8F28008-43	SO-13-10	06/28/18	06/29/18	07/02/18	1	<3.0	mg/kg	3
8F28008-44	SO-13-5DUP	06/28/18	06/29/18	07/02/18	1	<3.0	mg/kg	3



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LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Chloride by Ion Chromatography - Quality Control										
Batch B8F2916 - NO PREP										
Blank (B8F2916-BLK1)				Prepared & Analyzed: 06/29/18						
Chloride	<0.50	0.50	mg/L							
LCS (B8F2916-BS1)				Prepared & Analyzed: 06/29/18						
Chloride	**4.70**	0.50	mg/L	5.0		94.0	90-110			
LCS Dup (B8F2916-BSD1)				Prepared & Analyzed: 06/29/18						
Chloride	**4.76**	0.50	mg/L	5.0		95.2	90-110	1.27	20	
Duplicate (B8F2916-DUP1)		**Source: 8F28008-09**		Prepared & Analyzed: 06/29/18						
Chloride	**1440**	50	mg/L		1290			10.8	20	
Duplicate (B8F2916-DUP2)		**Source: 8F29001-02**		Prepared & Analyzed: 06/29/18						
Chloride	**123**	5.0	mg/L		116			6.20	20	
Nitrate by Ion Chromatography - Quality Control										
Batch B8F2917 - NO PREP										
Blank (B8F2917-BLK1)				Prepared & Analyzed: 06/29/18						
Nitrate as N	<0.10	0.10	mg/L							
LCS (B8F2917-BS1)				Prepared & Analyzed: 06/29/18						
Nitrate as N	**4.51**	0.10	mg/L	5.0		90.2	90-110			
LCS Dup (B8F2917-BSD1)				Prepared & Analyzed: 06/29/18						
Nitrate as N	**4.52**	0.10	mg/L	5.0		90.4	90-110	0.221	20	
Matrix Spike (B8F2917-MS1)		**Source: 8F28008-29**		Prepared & Analyzed: 06/29/18						
Nitrate as N	**1.67**	0.10	mg/L	1.0	0.600	107	80-120			
Matrix Spike Dup (B8F2917-MSD1)		**Source: 8F28008-29**		Prepared & Analyzed: 06/29/18						
Nitrate as N	**1.61**	0.10	mg/L	1.0	0.600	101	80-120	3.66	30	
Sulfate by Ion Chromatography - Quality Control										
Batch B8F2918 - NO PREP										
Blank (B8F2918-BLK1)				Prepared & Analyzed: 06/29/18						
Sulfate	<0.50	0.50	mg/L							
LCS (B8F2918-BS1)				Prepared & Analyzed: 06/29/18						
Sulfate	**5.02**	0.50	mg/L	5.0		100	90-110			
LCS Dup (B8F2918-BSD1)				Prepared & Analyzed: 06/29/18						
Sulfate	**5.40**	0.50	mg/L	5.0		108	90-110	7.29	20	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
General Chemistry Analyses - Quality Control										
Batch B8F2919 - NO PREP										
Blank (B8F2919-BLK1)				Prepared & Analyzed: 06/29/18						
Salinity	<0.10	0.10	Salinity units							
Specific Conductance (EC)	<10	10	umhos/cm							
Duplicate (B8F2919-DUP1)			**Source: 8F28008-29**	Prepared & Analyzed: 06/29/18						
Specific Conductance (EC)	**15100**	20	umhos/cm		13800			9.14	25	
Salinity	**8.40**	0.20	Salinity units		8.10			3.64	20	
Batch B8F2920 - NO PREP										
Blank (B8F2920-BLK1)				Prepared & Analyzed: 07/02/18						
Total Dissolved Solids	<10	10	mg/L							
LCS (B8F2920-BS1)				Prepared & Analyzed: 07/02/18						
Total Dissolved Solids	**520**	10	mg/L	500		104	80-120			
LCS Dup (B8F2920-BSD1)				Prepared & Analyzed: 07/02/18						
Total Dissolved Solids	**580**	10	mg/L	500		116	80-120	10.9	25	
Duplicate (B8F2920-DUP1)			**Source: 8F28008-29**	Prepared & Analyzed: 07/02/18						
Total Dissolved Solids	**7400**	1000	mg/L		8600			15.0	20	
Batch B8F2923 - NO PREP										
Duplicate (B8F2923-DUP1)			**Source: 8F28008-09**	Prepared & Analyzed: 06/29/18						**O-04**
pH	**6.97**	0.010	pH Units		6.47			7.44	20	
Batch B8G0221 - NO PREP										
Blank (B8G0221-BLK1)				Prepared & Analyzed: 07/02/18						
Hardness	<2.0	2.0	mg/L							
LCS (B8G0221-BS1)				Prepared & Analyzed: 07/02/18						
Hardness	**1000**	2.0	mg/L	1000		100	80-120			
LCS Dup (B8G0221-BSD1)				Prepared & Analyzed: 07/02/18						
Hardness	**998**	2.0	mg/L	1000		99.8	80-120	0.200	25	
Duplicate (B8G0221-DUP1)			**Source: 8F28008-29**	Prepared & Analyzed: 07/02/18						
Hardness	**1600**	2.0	mg/L		1640			1.85	20	
Carbon Chain by GC/FID - Quality Control										

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Carbon Chain by GC/FID - Quality Control										
Batch B8F2901 - EPA 3510C										
Blank (B8F2901-BLK1)				Prepared & Analyzed: 06/29/18						
C6-C8	<0.010	0.010	mg/L							
C8-C10	<0.010	0.010	mg/L							
C10-C12	<0.010	0.010	mg/L							
C12-C14	<0.010	0.010	mg/L							
C14-C16	<0.010	0.010	mg/L							
C16-C18	<0.010	0.010	mg/L							
C18-C20	<0.010	0.010	mg/L							
C20-C22	<0.010	0.010	mg/L							
C22-C24	<0.010	0.010	mg/L							
C24-C26	<0.010	0.010	mg/L							
C26-C28	<0.010	0.010	mg/L							
C28-C32	<0.010	0.010	mg/L							
C32-C34	<0.010	0.010	mg/L							
C34-C36	<0.010	0.010	mg/L							
C36-C40	<0.010	0.010	mg/L							
C40-C44	<0.010	0.010	mg/L							
TPH (C6-C44)	<0.10	0.10	mg/L							
Gasoline Range Organics (C6-C10)	<0.10	0.10	mg/L							
Diesel Range Organics (C10-C23)	<0.10	0.10	mg/L							
Oil Range Organics (C23-C44)	<0.10	0.10	mg/L							
Surrogate: o-Terphenyl	*0.0386*		*mg/L*	*0.040*		*96.5*	*50-150*			
LCS (B8F2901-BS1)				Prepared & Analyzed: 06/29/18						
Diesel Range Organics as Diesel	**0.687**	0.10	mg/L	0.80		85.9	75-125			
Surrogate: o-Terphenyl	*0.0404*		*mg/L*	*0.040*		*101*	*50-150*			
LCS Dup (B8F2901-BSD1)				Prepared & Analyzed: 06/29/18						
Diesel Range Organics as Diesel	**0.661**	0.10	mg/L	0.80		82.7	75-125	3.87	30	
Surrogate: o-Terphenyl	*0.0382*		*mg/L*	*0.040*		*95.4*	*50-150*			
Batch B8F2911 - EPA 3550B										
Blank (B8F2911-BLK1)				Prepared & Analyzed: 06/29/18						
C6-C8	<1.0	1.0	mg/kg							



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Carbon Chain by GC/FID - Quality Control										
Batch B8F2911 - EPA 3550B										
Blank (B8F2911-BLK1) Continued				Prepared & Analyzed: 06/29/18						
C8-C10	<1.0	1.0	mg/kg							
C10-C12	<1.0	1.0	mg/kg							
C12-C14	<1.0	1.0	mg/kg							
C14-C16	<1.0	1.0	mg/kg							
C16-C18	<1.0	1.0	mg/kg							
C18-C20	<1.0	1.0	mg/kg							
C20-C22	<1.0	1.0	mg/kg							
C22-C24	<1.0	1.0	mg/kg							
C24-C26	<1.0	1.0	mg/kg							
C26-C28	<1.0	1.0	mg/kg							
C28-C32	<1.0	1.0	mg/kg							
C32-C34	<1.0	1.0	mg/kg							
C34-C36	<1.0	1.0	mg/kg							
C36-C40	<1.0	1.0	mg/kg							
C40-C44	<1.0	1.0	mg/kg							
TPH (C6-C44)	<10	10	mg/kg							
Gasoline Range Organics (C6-C10)	<5.0	5.0	mg/kg							
Diesel Range Organics (C10-C23)	<5.0	5.0	mg/kg							
Oil Range Organics (C23-C44)	<5.0	5.0	mg/kg							
Surrogate: o-Terphenyl	*8.38*		*mg/kg*	*10*		*83.8*	*50-150*			
LCS (B8F2911-BS1)				Prepared & Analyzed: 06/29/18						
Diesel Range Organics as Diesel	**157**	10	mg/kg	200		78.4	75-125			
Surrogate: o-Terphenyl	*11.3*		*mg/kg*	*10*		*113*	*50-150*			
LCS Dup (B8F2911-BSD1)				Prepared & Analyzed: 06/29/18						
Diesel Range Organics as Diesel	**161**	10	mg/kg	200		80.7	75-125	2.88	40	
Surrogate: o-Terphenyl	*12.1*		*mg/kg*	*10*		*121*	*50-150*			
Matrix Spike (B8F2911-MS1)		**Source: 8F28008-17**		Prepared: 06/29/18			Analyzed: 06/30/18			
Diesel Range Organics as Diesel	**219**	10	mg/kg	200	80.3	69.4	70-130			QM-07
Surrogate: o-Terphenyl	*12.9*		*mg/kg*	*10*		*129*	*50-150*			
Matrix Spike Dup (B8F2911-MSD1)		**Source: 8F28008-17**		Prepared: 06/29/18			Analyzed: 06/30/18			



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Carbon Chain by GC/FID - Quality Control										
Batch B8F2911 - EPA 3550B										
Diesel Range Organics as Diesel	**244**	10	mg/kg	200	80.3	81.8	70-130	10.8	40	
Surrogate: o-Terphenyl	*12.0*		*mg/kg*	*10*		*120*	*50-150*			
Batch B8F2912 - EPA 3550B										
Blank (B8F2912-BLK1)				Prepared: 06/29/18 Analyzed: 06/30/18						
C6-C8	<1.0	1.0	mg/kg							
C8-C10	<1.0	1.0	mg/kg							
C10-C12	<1.0	1.0	mg/kg							
C12-C14	<1.0	1.0	mg/kg							
C14-C16	<1.0	1.0	mg/kg							
C16-C18	<1.0	1.0	mg/kg							
C18-C20	<1.0	1.0	mg/kg							
C20-C22	<1.0	1.0	mg/kg							
C22-C24	<1.0	1.0	mg/kg							
C24-C26	<1.0	1.0	mg/kg							
C26-C28	<1.0	1.0	mg/kg							
C28-C32	<1.0	1.0	mg/kg							
C32-C34	<1.0	1.0	mg/kg							
C34-C36	<1.0	1.0	mg/kg							
C36-C40	<1.0	1.0	mg/kg							
C40-C44	<1.0	1.0	mg/kg							
TPH (C6-C44)	<10	10	mg/kg							
Gasoline Range Organics (C6-C10)	<5.0	5.0	mg/kg							
Diesel Range Organics (C10-C23)	<5.0	5.0	mg/kg							
Oil Range Organics (C23-C44)	<5.0	5.0	mg/kg							
Surrogate: o-Terphenyl	*8.55*		*mg/kg*	*10*		*85.5*	*50-150*			
LCS (B8F2912-BS1)				Prepared: 06/29/18 Analyzed: 06/30/18						
Diesel Range Organics as Diesel	**163**	10	mg/kg	200		81.7	75-125			
Surrogate: o-Terphenyl	*11.5*		*mg/kg*	*10*		*115*	*50-150*			
LCS Dup (B8F2912-BSD1)				Prepared: 06/29/18 Analyzed: 06/30/18						
Diesel Range Organics as Diesel	**168**	10	mg/kg	200		83.9	75-125	2.72	40	
Surrogate: o-Terphenyl	*12.4*		*mg/kg*	*10*		*124*	*50-150*			

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Carbon Chain by GC/FID - Quality Control										
Batch B8F2912 - EPA 3550B										
Matrix Spike (B8F2912-MS1)		**Source: 8F28008-36**		Prepared: 06/29/18		Analyzed: 06/30/18				
Diesel Range Organics as Diesel	**157**	10	mg/kg	200	34.0	61.6	70-130			QM-07
Surrogate: o-Terphenyl	*11.5*		*mg/kg*	*10*		*115*	*50-150*			
Matrix Spike Dup (B8F2912-MSD1)		**Source: 8F28008-36**		Prepared: 06/29/18		Analyzed: 06/30/18				
Diesel Range Organics as Diesel	**158**	10	mg/kg	200	34.0	61.9	70-130	0.398	40	QM-07
Surrogate: o-Terphenyl	*11.3*		*mg/kg*	*10*		*113*	*50-150*			
Batch B8F2913 - EPA 3550B										
Blank (B8F2913-BLK1)				Prepared: 06/29/18		Analyzed: 06/30/18				
C6-C8	<1.0	1.0	mg/kg							
C8-C10	<1.0	1.0	mg/kg							
C10-C12	<1.0	1.0	mg/kg							
C12-C14	<1.0	1.0	mg/kg							
C14-C16	<1.0	1.0	mg/kg							
C16-C18	<1.0	1.0	mg/kg							
C18-C20	<1.0	1.0	mg/kg							
C20-C22	<1.0	1.0	mg/kg							
C22-C24	<1.0	1.0	mg/kg							
C24-C26	<1.0	1.0	mg/kg							
C26-C28	<1.0	1.0	mg/kg							
C28-C32	<1.0	1.0	mg/kg							
C32-C34	<1.0	1.0	mg/kg							
C34-C36	<1.0	1.0	mg/kg							
C36-C40	<1.0	1.0	mg/kg							
C40-C44	<1.0	1.0	mg/kg							
TPH (C6-C44)	<10	10	mg/kg							
Gasoline Range Organics (C6-C10)	<5.0	5.0	mg/kg							
Diesel Range Organics (C10-C23)	<5.0	5.0	mg/kg							
Oil Range Organics (C23-C44)	<5.0	5.0	mg/kg							
Surrogate: o-Terphenyl	*8.38*		*mg/kg*	*10*		*83.8*	*50-150*			
LCS (B8F2913-BS1)				Prepared: 06/29/18		Analyzed: 06/30/18				
Diesel Range Organics as Diesel	**163**	10	mg/kg	200		81.7	75-125			

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Carbon Chain by GC/FID - Quality Control										
Batch B8F2913 - EPA 3550B										
LCS (B8F2913-BS1) Continued				Prepared: 06/29/18 Analyzed: 06/30/18						
Surrogate: o-Terphenyl	*11.4*		*mg/kg*	*10*		*114*	*50-150*			
LCS Dup (B8F2913-BSD1)				Prepared: 06/29/18 Analyzed: 06/30/18						
Diesel Range Organics as Diesel	**164**	10	mg/kg	200		82.2	75-125	0.627	40	
Surrogate: o-Terphenyl	*12.0*		*mg/kg*	*10*		*120*	*50-150*			
Total Metals by ICP Atomic Emission Spectroscopy - Quality Control										
Batch B8F2926 - EPA 3050B										
Blank (B8F2926-BLK1)				Prepared: 06/29/18 Analyzed: 07/02/18						
Lead	<3.0	3.0	mg/kg							
LCS (B8F2926-BS1)				Prepared: 06/29/18 Analyzed: 07/02/18						
Lead	**49.5**	3.0	mg/kg	50		99.0	80-120		20	
LCS Dup (B8F2926-BSD1)				Prepared: 06/29/18 Analyzed: 07/02/18						
Lead	**49.4**	3.0	mg/kg	50		98.8	80-120	0.182	20	
Duplicate (B8F2926-DUP1)			**Source: 8F28008-17**	Prepared: 06/29/18 Analyzed: 07/02/18						
Lead	**32.4**	3.0	mg/kg		27.3			17.2	40	
Matrix Spike (B8F2926-MS1)			**Source: 8F28008-05**	Prepared: 06/29/18 Analyzed: 07/02/18						
Lead	**57.1**	3.0	mg/kg	50	5.00	104	75-125		40	
Matrix Spike Dup (B8F2926-MSD1)			**Source: 8F28008-05**	Prepared: 06/29/18 Analyzed: 07/02/18						
Lead	**51.3**	3.0	mg/kg	50	5.00	92.6	75-125	10.7	40	
Batch B8F2927 - EPA 3050B										
Blank (B8F2927-BLK1)				Prepared: 06/29/18 Analyzed: 07/02/18						
Lead	<3.0	3.0	mg/kg							
LCS (B8F2927-BS1)				Prepared: 06/29/18 Analyzed: 07/02/18						
Lead	**48.2**	3.0	mg/kg	50		96.5	80-120		20	
LCS Dup (B8F2927-BSD1)				Prepared: 06/29/18 Analyzed: 07/02/18						
Lead	**46.0**	3.0	mg/kg	50		91.9	80-120	4.82	20	
Duplicate (B8F2927-DUP1)			**Source: 8F28008-33**	Prepared: 06/29/18 Analyzed: 07/02/18						
Lead	**6.08**	3.0	mg/kg		5.88			3.34	40	
Matrix Spike (B8F2927-MS1)			**Source: 8F28008-21**	Prepared: 06/29/18 Analyzed: 07/02/18						
Lead	**54.4**	3.0	mg/kg	50	7.05	94.8	75-125		40	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948102
Date Received: 06/28/18
Date Reported: 07/03/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Metals by ICP Atomic Emission Spectroscopy - Quality Control										
Batch B8F2927 - EPA 3050B										
Matrix Spike Dup (B8F2927-MSD1)		**Source: 8F28008-21**		Prepared: 06/29/18		Analyzed: 07/02/18				
Lead	**52.4**	3.0	mg/kg	50	7.05	90.7	75-125	3.82	40	
Batch B8F2928 - EPA 3050B										
Blank (B8F2928-BLK1)				Prepared: 06/29/18		Analyzed: 07/02/18				
Lead	<3.0	3.0	mg/kg							
LCS (B8F2928-BS1)				Prepared: 06/29/18		Analyzed: 07/02/18				
Lead	**48.2**	3.0	mg/kg	50		96.5	80-120		20	
LCS Dup (B8F2928-BSD1)				Prepared: 06/29/18		Analyzed: 07/02/18				
Lead	**46.0**	3.0	mg/kg	50		91.9	80-120	4.82	20	
Duplicate (B8F2928-DUP1)		**Source: 8F28008-44**		Prepared: 06/29/18		Analyzed: 07/02/18				
Lead	**<3.0**	3.0	mg/kg		<3.0				40	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client:	AECOM (LA)	**AA Project No:**	A948102
Project No:	NA	**Date Received:**	06/28/18
Project Name:	128 Hurricane - Soil & GW	**Date Reported:**	07/03/18

Special Notes

[1] = O-04 : This sample was analyzed outside the EPA recommended holding time.

[2] = QM-07 : The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

Viorel Vasile
Operations Manager

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311
Tel: 818-998-5547 FAX: 818-998-7258

A.A. COC No.: 17007
70051778
Page 1 of 4

Client: AECOM	Project Name / No.: 128 Hurricane St / 60553849	Sampler's Name: A. Vigna
Project Manager: Kaleena Johnson	Site Address:	Sampler's Signature:
Phone:	City: LA	P.O. No.:
Fax:	State & Zip: CA	Quote No.:

TAT Turnaround Codes **

(1) = Same Day Rush
(2) = 24 Hour Rush
(3) = 48 Hour Rush
(4) = 72 Hour Rush
(5) = 5 Day Rush
X = 10 Working Days (Standard TAT)

ANALYSIS REQUESTED (Test Name)

Please enter the TAT Turnaround Codes ** below

Client I.D.	A.A. I.D.	Date	Time	Sample Matrix	No. of Cont	TPHcc(8015)	Lead	General H_2O Quality								Special Instructions
SO-1-2.5	8F28008-01	6/28/18	0840	Soil	1	X	X									Gen. H_2O Qual=
SO-2-2.5	-02		0848			X	X									pH, TDS,
SO-2-3.5	-03		0851			X	X									Salinity, hardness,
SO-2-5	-04		0854			X	X									sulfates, chlorides,
SO-3-2.5	-05		0930			X	X									+ nitrates
SO-3-3.5	-06		0935			X	X									
SO-3-5	07		0940			X	X									48 Hr TAT
SO-3-10	08		~~0955~~ 1000			X	X									
SO-3	09		1000	Water	2	X		X								
SO-4-2.5	10		1022	Soil	1	X	X									
SO-4-3.5	11		1025			X	X									
SO-4-5	12		1028			X	X									
SO-4-5DUP	13		1028			X	X									
SO-5-2.5	14		1045			X	X									
SO-5-3.5	15		1050			X	X									

For Laboratory Use

PRIORITY
Rush 48 Hrs SH
Date 6/29/18 Time 0730 Sign

A.A. Project No.: A18D102 / 8F28008

	Date	Time	
Relinquished by	6/29/18	1530	Received by
Relinquished by	6-28-18	536	Received by Brian Oliver
Relinquished by	Date	Time	Received by

Note: By relinquishing samples to American Analytics, client agrees to pay for the services requested on this chain of custody form and any additional client-requested analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 45 days following the submittal of the sample(s) to American Analytics.

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311
Tel: 818-998-5547 FAX: 818-998-7258

A.A. COC No.: 15884
70051781

Client: AECOM	Project Name / No.: 128 Hurricane St. / 60553849	Sampler's Name: A. Vigna
Project Manager: Kaleena Johnson	Site Address:	Sampler's Signature: [signature]
Phone:	City: LA	P.O. No.:
Fax:	State & Zip: CA	Quote No.:

TAT Turnaround Codes **

1 = Same Day Rush
2 = 24 Hour Rush
3 = 48 Hour Rush
4 = 72 Hour Rush
5 = 5 Day Rush
X = 10 Working Days (Standard TAT)

ANALYSIS REQUESTED (Test Name)

Please enter the TAT Turnaround Codes ** below

Client I.D.	A.A. I.D.	Date	Time	Sample Matrix	No. of Cont	TPHcc (8015)	Lead	General H2O Quality								Special Instructions
SO-5-5	9F28008-16	6/28/18	1053	Soil	1	X	X									
SO-6-0.5	-17		1058			X	X									
SO-6-2.5	18		1104			X	X									
SO-6-3.5	19		1108			X	X									
SO-6-5	20		1110			X	X									
SO-7-2.5	21		1122			X	X									
SO-7-3.5	22		1130			X	X									
SO-7-5	23		1146			X	X									
SO-7-5DUP	24		1146			X	X									
SO-8-2.5	25		1240			X	X									
SO-8-3.5	26		1250			X	X									
SO-8-5	27		1255			X	X									
SO-8-10	28		1305			X	X	~~X~~ AD								
SO-8	29		1315	Water	2	X		X								
SO-9-2.5	30		1333	Soil	1	X	X									

For Laboratory Use

PRIORITY
Rush 48 Hrs SH
Date 6/29/16 Time 0700 Sign [signature]

A.A. Project No.: A948102/9F28008

Relinquished by	Date	Time	Received by
[signature]	6/28/18	1530	[signature]
[signature]	6-28-18	536	Ben Clivean

Note: By relinquishing samples to American Analytics, client agrees to pay for the services requested on this chain of custody form and any additional client-requested analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 45 days following the submittal of the sample(s) to American Analytics.

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311
Tel: 818-998-5547 FAX: 818-998-7258

A.A. COC No.: 6445
70051782

Client: AECOM	Project Name / No.: 128 Hurricane St 60553849	Sampler's Name: A. Vigna	
Project Manager: Kaleena Johnson	Site Address:	Sampler's Signature:	
Phone:	City: LA	P.O. No.:	
Fax:	State & Zip: CA	Quote No.:	

TAT Turnaround Codes **

(1) = Same Day Rush
(2) = 24 Hour Rush
(3) = 48 Hour Rush
(4) = 72 Hour Rush
(5) = 5 Day Rush
X = 10 Working Days (Standard TAT)

ANALYSIS REQUESTED (Test Name)

Please enter the TAT Turnaround Codes ** below

Client I.D.	A.A. I.D.	Date	Time	Sample Matrix	No. of Cont	TPH cc (8015)	Lead	Gen. water quality								Special Instructions
SO-9-3.5	18F29009-31	6/29/18	1335	Soil	2	X	X									
SO-9-5	32		1340			X	X									
SO-12-2.5	33		1350			X	X									
SO-12-3.5	34		1357			X	X									
SO-12-5	35		1405			X	X									
SO-10-2.5	36		1412			X	X									
SO-10-3.5	37		1418			X	X									
SO-11-2.5	38		1429			X	X									
SO-11-3.5	39		1433			X	X									
SO-13-2.5	40		1449			X	X									
SO-13 -3.5	41		1453			X	X									
SO-13 -5	42		1455			X	X									
SO-13 -10	43		1500			X	X									
SO-13-5DUP	44		1455			X	X									
SO-13	45		1505	Water		X		X								

For Laboratory Use

PRIORITY
Rush 48 Hrs SH
Date 6/29/18 Time 0720 Sign

A.A. Project No.: 18X4810 / 18F29008

	Date	Time	
Relinquished by	6/29/18	1530	Received by
Relinquished by	6-28-18	536	Received by
Relinquished by	Date	Time	Received by

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AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311
Tel: 818-998-5547 FAX: 818-998-7258

A.A. COC No.: 5866
70051730
Page 4 of 4

Client: AECOM	Project Name / No.: 128 Hurricane St 60553849	Sampler's Name: A. Vigna	
Project Manager: Kaleena Johnson	Site Address:	Sampler's Signature:	
Phone:	City: LA	P.O. No.:	
Fax:	State & Zip: CA	Quote No.:	

TAT Turnaround Codes **

(1) = Same Day Rush
(2) = 24 Hour Rush
(3) = 48 Hour Rush
(4) = 72 Hour Rush
(5) = 5 Day Rush
X = 10 Working Days (Standard TAT)

ANALYSIS REQUESTED (Test Name)

Client I.D.	A.A. I.D.	Date	Time	Sample Matrix	No. of Cont	TPHmo (8015)	Please enter the TAT Turnaround Codes ** below	Special Instructions
EB-062318	16F29008-46	6/28/18	1525	Water	1	X		

For Laboratory Use

PRIORITY
Rush 48 Hrs SH
Date 6/29/18 Time 0730 Sign

A.A. Project No.: A09102 / 16F29008

	Date	Time	
Relinquished by	6/28/18	1530	Received by
Relinquished by	6.28.18	536	Received by
Relinquished by	Date	Time	Received by

Note: By relinquishing samples to American Analytics, client agrees to pay for the services requested on this chain of custody form and any additional client-requested analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 45 days following the submittal of the sample(s) to American Analytics.

AMERICAN ANALYTICS

9765 Eton Avenue
Chatsworth
California 91311
Tel: (818) 998-5547
Fax: (818) 998-7258

July 03, 2018

Kaleena Johnson

AECOM (LA)

300 S. Grand Ave., Suite 800

Los Angeles, CA 90017

Re : 128 Hurricane - Soil & GW

A948103 / 8F28009

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received on 06/28/18 17:36 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Program Manual, applicable standard operating procedures, and other related documentation. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report or require additional information please call me at American Analytics.

Sincerely,



Viorel Vasile

Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948103
Date Received: 06/28/18
Date Reported: 07/03/18

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
8260B+OXYGENATES					
Waste062318	8F28009-01	Soil	2	06/28/18 15:20	06/28/18 17:36
CAM Metals Less Hg 6000/7000					
Waste062318	8F28009-01	Soil	2	06/28/18 15:20	06/28/18 17:36
Carbon Chain Characterization 8015M					
Waste062318	8F28009-01	Soil	2	06/28/18 15:20	06/28/18 17:36
Mercury Total EPA 7470A/7471A					
Waste062318	8F28009-01	Soil	2	06/28/18 15:20	06/28/18 17:36

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client:	AECOM (LA)	**AA Project No:**	A948103
Project No:	NA	**Date Received:**	06/28/18
Project Name:	128 Hurricane - Soil & GW	**Date Reported:**	07/03/18
Method:	VOCs & OXYGENATES by GC/MS	**Units:**	ug/kg

Date Sampled:	06/28/18	
Date Prepared:	06/29/18	
Date Analyzed:	06/29/18	
AA ID No:	8F28009-01	
Client ID No:	Waste062318	
Matrix:	Soil	
Dilution Factor:	1	MRL

8260B+OXYGENATES (EPA 8260B)

Acetone	<50	50
tert-Amyl Methyl Ether (TAME)	<5.0	5.0
Benzene	<2.0	2.0
Bromobenzene	<5.0	5.0
Bromochloromethane	<5.0	5.0
Bromodichloromethane	<5.0	5.0
Bromoform	<5.0	5.0
Bromomethane	<5.0	5.0
2-Butanone (MEK)	<50	50
tert-Butyl alcohol (TBA)	<20	20
tert-Butylbenzene	<5.0	5.0
sec-Butylbenzene	<5.0	5.0
n-Butylbenzene	<5.0	5.0
Carbon Disulfide	<5.0	5.0
Carbon Tetrachloride	<5.0	5.0
Chlorobenzene	<5.0	5.0
Chloroethane	<5.0	5.0
Chloroform	<5.0	5.0
Chloromethane	<5.0	5.0
2-Chlorotoluene	<5.0	5.0
4-Chlorotoluene	<5.0	5.0
1,2-Dibromo-3-chloropropane	<10	10
Dibromochloromethane	<5.0	5.0
1,2-Dibromoethane (EDB)	<5.0	5.0
Dibromomethane	<5.0	5.0
1,2-Dichlorobenzene	<5.0	5.0
1,3-Dichlorobenzene	<5.0	5.0

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW
Method: VOCs & OXYGENATES by GC/MS

AA Project No: A948103
Date Received: 06/28/18
Date Reported: 07/03/18
Units: ug/kg

Date Sampled:	06/28/18
Date Prepared:	06/29/18
Date Analyzed:	06/29/18
AA ID No:	8F28009-01
Client ID No:	Waste062318
Matrix:	Soil
Dilution Factor:	1

8260B+OXYGENATES (EPA 8260B) (continued)

		MRL
1,4-Dichlorobenzene	<5.0	5.0
Dichlorodifluoromethane (R12)	<5.0	5.0
1,1-Dichloroethane	<5.0	5.0
1,2-Dichloroethane (EDC)	<5.0	5.0
trans-1,2-Dichloroethylene	<5.0	5.0
cis-1,2-Dichloroethylene	<5.0	5.0
1,1-Dichloroethylene	<5.0	5.0
1,2-Dichloropropane	<5.0	5.0
2,2-Dichloropropane	<5.0	5.0
1,3-Dichloropropane	<5.0	5.0
1,1-Dichloropropylene	<5.0	5.0
trans-1,3-Dichloropropylene	<5.0	5.0
cis-1,3-Dichloropropylene	<5.0	5.0
Diisopropyl ether (DIPE)	<5.0	5.0
Ethylbenzene	<2.0	2.0
Ethyl-tert-Butyl Ether (ETBE)	<5.0	5.0
Hexachlorobutadiene	<10	10
2-Hexanone (MBK)	<50	50
Isopropylbenzene	<5.0	5.0
4-Isopropyltoluene	<5.0	5.0
Methyl-tert-Butyl Ether (MTBE)	<5.0	5.0
Methylene Chloride	<50	50
4-Methyl-2-pentanone (MIBK)	<50	50
Naphthalene	<10	10
n-Propylbenzene	<5.0	5.0
Styrene	<5.0	5.0
1,1,1,2-Tetrachloroethane	<5.0	5.0

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client:	AECOM (LA)	**AA Project No:**	A948103
Project No:	NA	**Date Received:**	06/28/18
Project Name:	128 Hurricane - Soil & GW	**Date Reported:**	07/03/18
Method:	VOCs & OXYGENATES by GC/MS	**Units:**	ug/kg

Date Sampled:	06/28/18	
Date Prepared:	06/29/18	
Date Analyzed:	06/29/18	
AA ID No:	8F28009-01	
Client ID No:	Waste062318	
Matrix:	Soil	
Dilution Factor:	1	MRL

8260B+OXYGENATES (EPA 8260B) (continued)

1,1,2,2-Tetrachloroethane	<5.0	5.0
Tetrachloroethylene (PCE)	<5.0	5.0
Toluene	<2.0	2.0
1,2,4-Trichlorobenzene	<5.0	5.0
1,2,3-Trichlorobenzene	<5.0	5.0
1,1,2-Trichloroethane	<5.0	5.0
1,1,1-Trichloroethane	<5.0	5.0
Trichloroethylene (TCE)	<5.0	5.0
Trichlorofluoromethane (R11)	<5.0	5.0
1,2,3-Trichloropropane	<5.0	5.0
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<5.0	5.0
1,3,5-Trimethylbenzene	<5.0	5.0
1,2,4-Trimethylbenzene	<5.0	5.0
Vinyl chloride	<5.0	5.0
o-Xylene	<2.0	2.0
m,p-Xylenes	<2.0	2.0

Surrogates		**%REC Limits**
4-Bromofluorobenzene	101%	70-140
Dibromofluoromethane	123%	70-140
Toluene-d8	101%	70-140

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client:	AECOM (LA)	**AA Project No:**	A948103
Project No:	NA	**Date Received:**	06/28/18
Project Name:	128 Hurricane - Soil & GW	**Date Reported:**	07/03/18
Method:	Carbon Chain by GC/FID	**Units:**	mg/kg

Date Sampled:	06/28/18	
Date Prepared:	06/29/18	
Date Analyzed:	07/01/18	
AA ID No:	8F28009-01	
Client ID No:	Waste062318	
Matrix:	Soil	
Dilution Factor:	1	MRL

Carbon Chain Characterization 8015M (EPA 8015M)

C6-C8	<1.0	1.0
C8-C10	<1.0	1.0
C10-C12	<1.0	1.0
C12-C14	<1.0	1.0
C14-C16	<1.0	1.0
C16-C18	<1.0	1.0
C18-C20	**2.0**	1.0
C20-C22	**5.8**	1.0
C22-C24	**11**	1.0
C24-C26	**14**	1.0
C26-C28	**23**	1.0
C28-C32	**64**	1.0
C32-C34	**18**	1.0
C34-C36	**19**	1.0
C36-C40	**30**	1.0
C40-C44	**17**	1.0
TPH (C6-C44)	**200**	10
Gasoline Range Organics (C6-C10)	<5.0	5.0
Diesel Range Organics (C10-C23)	**13**	5.0
Oil Range Organics (C23-C44)	**190**	5.0

Surrogates		**%REC Limits**
o-Terphenyl	97%	50-150

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client:	AECOM (LA)	**AA Project No:**	A948103
Project No:	NA	**Date Received:**	06/28/18
Project Name:	128 Hurricane - Soil & GW	**Date Reported:**	07/03/18
Method:	Total Metals CAM 17	**Units:**	mg/kg

Date Sampled:	06/28/18	
Date Prepared:	06/29/18	
Date Analyzed:	07/02/18	
AA ID No:	8F28009-01	
Client ID No:	Waste062318	
Matrix:	Soil	
Dilution Factor:	1	MRL

CAM Metals Less Hg 6000/7000 (EPA 6010B/7000)

Antimony	<10	10
Arsenic	**2.9**	0.50
Barium	**51**	10
Beryllium	<1.0	1.0
Cadmium	<1.0	1.0
Chromium	**11**	3.0
Cobalt	**3.2**	3.0
Copper	**3.3**	3.0
Lead	**22**	3.0
Molybdenum	<5.0	5.0
Nickel	**9.2**	3.0
Selenium	<0.50	0.50
Silver	<1.0	1.0
Thallium	<5.0	5.0
Vanadium	**24**	10
Zinc	**84**	3.0

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client:	AECOM (LA)	**AA Project No:**	A948103
Project No:	NA	**Date Received:**	06/28/18
Project Name:	128 Hurricane - Soil & GW	**Date Reported:**	07/03/18
Method:	Total Metals CAM 17	**Units:**	mg/kg

Date Sampled:	06/28/18	
Date Prepared:	07/02/18	
Date Analyzed:	07/02/18	
AA ID No:	8F28009-01	
Client ID No:	Waste062318	
Matrix:	Soil	
Dilution Factor:	1	MRL

Mercury Total EPA 7470A/7471A (EPA 7471A)

Mercury	**0.094**	0.020

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948103
Date Received: 06/28/18
Date Reported: 07/03/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2925 - EPA 5035										
Blank (B8F2925-BLK1)				Prepared & Analyzed: 06/29/18						
Acetone	<50	50	ug/kg							
tert-Amyl Methyl Ether (TAME)	<5.0	5.0	ug/kg							
Benzene	<2.0	2.0	ug/kg							
Bromobenzene	<5.0	5.0	ug/kg							
Bromochloromethane	<5.0	5.0	ug/kg							
Bromodichloromethane	<5.0	5.0	ug/kg							
Bromoform	<5.0	5.0	ug/kg							
Bromomethane	<5.0	5.0	ug/kg							
2-Butanone (MEK)	<50	50	ug/kg							
tert-Butyl alcohol (TBA)	<20	20	ug/kg							
tert-Butylbenzene	<5.0	5.0	ug/kg							
sec-Butylbenzene	<5.0	5.0	ug/kg							
n-Butylbenzene	<5.0	5.0	ug/kg							
Carbon Disulfide	<5.0	5.0	ug/kg							
Carbon Tetrachloride	<5.0	5.0	ug/kg							
Chlorobenzene	<5.0	5.0	ug/kg							
Chloroethane	<5.0	5.0	ug/kg							
Chloroform	<5.0	5.0	ug/kg							
Chloromethane	<5.0	5.0	ug/kg							
2-Chlorotoluene	<5.0	5.0	ug/kg							
4-Chlorotoluene	<5.0	5.0	ug/kg							
1,2-Dibromo-3-chloropropane	<10	10	ug/kg							
Dibromochloromethane	<5.0	5.0	ug/kg							
1,2-Dibromoethane (EDB)	<5.0	5.0	ug/kg							
Dibromomethane	<5.0	5.0	ug/kg							
1,2-Dichlorobenzene	<5.0	5.0	ug/kg							
1,3-Dichlorobenzene	<5.0	5.0	ug/kg							
1,4-Dichlorobenzene	<5.0	5.0	ug/kg							
Dichlorodifluoromethane (R12)	<5.0	5.0	ug/kg							
1,1-Dichloroethane	<5.0	5.0	ug/kg							
1,2-Dichloroethane (EDC)	<5.0	5.0	ug/kg							



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948103
Date Received: 06/28/18
Date Reported: 07/03/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2925 - EPA 5035										
Blank (B8F2925-BLK1) Continued				Prepared & Analyzed: 06/29/18						
trans-1,2-Dichloroethylene	<5.0	5.0	ug/kg							
cis-1,2-Dichloroethylene	<5.0	5.0	ug/kg							
1,1-Dichloroethylene	<5.0	5.0	ug/kg							
1,2-Dichloropropane	<5.0	5.0	ug/kg							
2,2-Dichloropropane	<5.0	5.0	ug/kg							
1,3-Dichloropropane	<5.0	5.0	ug/kg							
1,1-Dichloropropylene	<5.0	5.0	ug/kg							
trans-1,3-Dichloropropylene	<5.0	5.0	ug/kg							
cis-1,3-Dichloropropylene	<5.0	5.0	ug/kg							
Diisopropyl ether (DIPE)	<5.0	5.0	ug/kg							
Ethylbenzene	<2.0	2.0	ug/kg							
Ethyl-tert-Butyl Ether (ETBE)	<5.0	5.0	ug/kg							
Hexachlorobutadiene	<10	10	ug/kg							
2-Hexanone (MBK)	<50	50	ug/kg							
Isopropylbenzene	<5.0	5.0	ug/kg							
4-Isopropyltoluene	<5.0	5.0	ug/kg							
Methyl-tert-Butyl Ether (MTBE)	<5.0	5.0	ug/kg							
Methylene Chloride	<50	50	ug/kg							
4-Methyl-2-pentanone (MIBK)	<50	50	ug/kg							
Naphthalene	<10	10	ug/kg							
n-Propylbenzene	<5.0	5.0	ug/kg							
Styrene	<5.0	5.0	ug/kg							
1,1,1,2-Tetrachloroethane	<5.0	5.0	ug/kg							
1,1,2,2-Tetrachloroethane	<5.0	5.0	ug/kg							
Tetrachloroethylene (PCE)	<5.0	5.0	ug/kg							
Toluene	<2.0	2.0	ug/kg							
1,2,4-Trichlorobenzene	<5.0	5.0	ug/kg							
1,2,3-Trichlorobenzene	<5.0	5.0	ug/kg							
1,1,2-Trichloroethane	<5.0	5.0	ug/kg							
1,1,1-Trichloroethane	<5.0	5.0	ug/kg							
Trichloroethylene (TCE)	<5.0	5.0	ug/kg							

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948103
Date Received: 06/28/18
Date Reported: 07/03/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2925 - EPA 5035										
Blank (B8F2925-BLK1) Continued				Prepared & Analyzed: 06/29/18						
Trichlorofluoromethane (R11)	<5.0	5.0	ug/kg							
1,2,3-Trichloropropane	<5.0	5.0	ug/kg							
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	<5.0	5.0	ug/kg							
1,3,5-Trimethylbenzene	<5.0	5.0	ug/kg							
1,2,4-Trimethylbenzene	<5.0	5.0	ug/kg							
Vinyl chloride	<5.0	5.0	ug/kg							
o-Xylene	<2.0	2.0	ug/kg							
m,p-Xylenes	<2.0	2.0	ug/kg							
Surrogate: 4-Bromofluorobenzene	*94.9*		*ug/kg*	*100*		*94.9*	*70-140*			
Surrogate: Dibromofluoromethane	*117*		*ug/kg*	*100*		*117*	*70-140*			
Surrogate: Toluene-d8	*98.1*		*ug/kg*	*100*		*98.1*	*70-140*			
LCS (B8F2925-BS1)				Prepared & Analyzed: 06/29/18						
Acetone	**27.1**	50	ug/kg	40		67.8	70-130			***
tert-Amyl Methyl Ether (TAME)	**35.4**	5.0	ug/kg	40		88.4	70-130			
Benzene	**37.1**	2.0	ug/kg	40		92.7	75-125			
Bromobenzene	**41.2**	5.0	ug/kg	40		103	70-130			
Bromochloromethane	**40.5**	5.0	ug/kg	40		101	70-130			
Bromodichloromethane	**39.4**	5.0	ug/kg	40		98.4	75-125			
Bromoform	**38.5**	5.0	ug/kg	40		96.2	75-125			
Bromomethane	**45.8**	5.0	ug/kg	40		115	75-125			
2-Butanone (MEK)	**37.8**	50	ug/kg	40		94.4	70-130			
tert-Butyl alcohol (TBA)	**159**	20	ug/kg	200		79.3	70-130			
tert-Butylbenzene	**41.4**	5.0	ug/kg	40		104	70-130			
sec-Butylbenzene	**41.0**	5.0	ug/kg	40		102	70-130			
n-Butylbenzene	**40.7**	5.0	ug/kg	40		102	70-130			
Carbon Disulfide	**34.6**	5.0	ug/kg	40		86.4	70-130			
Carbon Tetrachloride	**40.4**	5.0	ug/kg	40		101	75-125			
Chlorobenzene	**41.2**	5.0	ug/kg	40		103	75-125			
Chloroethane	**41.2**	5.0	ug/kg	40		103	75-125			
Chloroform	**41.4**	5.0	ug/kg	40		104	75-125			

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948103
Date Received: 06/28/18
Date Reported: 07/03/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2925 - EPA 5035										
LCS (B8F2925-BS1) Continued				Prepared & Analyzed: 06/29/18						
Chloromethane	**37.4**	5.0	ug/kg	40		93.4	65-125			
2-Chlorotoluene	**39.6**	5.0	ug/kg	40		98.9	70-130			
4-Chlorotoluene	**40.4**	5.0	ug/kg	40		101	7-130			
1,2-Dibromo-3-chloropropane	**34.9**	10	ug/kg	40		87.3	70-130			
Dibromochloromethane	**39.2**	5.0	ug/kg	40		98.0	75-125			
1,2-Dibromoethane (EDB)	**37.4**	5.0	ug/kg	40		93.5	70-130			
Dibromomethane	**37.9**	5.0	ug/kg	40		94.8	70-130			
1,2-Dichlorobenzene	**42.4**	5.0	ug/kg	40		106	70-130			
1,3-Dichlorobenzene	**40.9**	5.0	ug/kg	40		102	70-130			
1,4-Dichlorobenzene	**40.5**	5.0	ug/kg	40		101	75-125			
Dichlorodifluoromethane (R12)	**26.9**	5.0	ug/kg	40		67.2	70-130			***
1,1-Dichloroethane	**39.2**	5.0	ug/kg	40		97.9	70-125			
1,2-Dichloroethane (EDC)	**41.4**	5.0	ug/kg	40		103	75-125			
trans-1,2-Dichloroethylene	**41.2**	5.0	ug/kg	40		103	75-125			
cis-1,2-Dichloroethylene	**40.2**	5.0	ug/kg	40		101	75-125			
1,1-Dichloroethylene	**37.0**	5.0	ug/kg	40		92.5	70-130			
1,2-Dichloropropane	**38.5**	5.0	ug/kg	40		96.2	75-130			
2,2-Dichloropropane	**39.3**	5.0	ug/kg	40		98.2	70-130			
1,3-Dichloropropane	**36.7**	5.0	ug/kg	40		91.6	70-130			
1,1-Dichloropropylene	**38.6**	5.0	ug/kg	40		96.4	70-130			
trans-1,3-Dichloropropylene	**39.7**	5.0	ug/kg	40		99.2	70-130			
cis-1,3-Dichloropropylene	**38.5**	5.0	ug/kg	40		96.3	75-125			
Diisopropyl ether (DIPE)	**37.1**	5.0	ug/kg	40		92.6	70-130			
Ethylbenzene	**41.0**	2.0	ug/kg	40		102	75-125			
Ethyl-tert-Butyl Ether (ETBE)	**37.5**	5.0	ug/kg	40		93.7	70-130			
Hexachlorobutadiene	**44.1**	10	ug/kg	40		110	70-130			
2-Hexanone (MBK)	**32.7**	50	ug/kg	40		81.8	70-130			
Isopropylbenzene	**40.1**	5.0	ug/kg	40		100	70-130			
4-Isopropyltoluene	**42.2**	5.0	ug/kg	40		106	70-130			
Methyl-tert-Butyl Ether (MTBE)	**74.3**	5.0	ug/kg	80		92.9	75-125			
Methylene Chloride	**28.9**	50	ug/kg	40		72.2	75-130			***



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948103
Date Received: 06/28/18
Date Reported: 07/03/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2925 - EPA 5035										
LCS (B8F2925-BS1) Continued				Prepared & Analyzed: 06/29/18						
4-Methyl-2-pentanone (MIBK)	**36.8**	50	ug/kg	40		92.0	70-130			
Naphthalene	**40.1**	10	ug/kg	40		100	70-130			
n-Propylbenzene	**41.3**	5.0	ug/kg	40		103	70-130			
Styrene	**39.2**	5.0	ug/kg	40		97.9	70-130			
1,1,1,2-Tetrachloroethane	**40.1**	5.0	ug/kg	40		100	70-130			
1,1,2,2-Tetrachloroethane	**36.6**	5.0	ug/kg	40		91.4	70-135			
Tetrachloroethylene (PCE)	**39.5**	5.0	ug/kg	40		98.7	75-125			
Toluene	**40.8**	2.0	ug/kg	40		102	75-125			
1,2,4-Trichlorobenzene	**45.5**	5.0	ug/kg	40		114	70-130			
1,2,3-Trichlorobenzene	**44.9**	5.0	ug/kg	40		112	70-130			
1,1,2-Trichloroethane	**37.1**	5.0	ug/kg	40		92.8	75-125			
1,1,1-Trichloroethane	**41.3**	5.0	ug/kg	40		103	75-125			
Trichloroethylene (TCE)	**38.6**	5.0	ug/kg	40		96.4	75-125			
Trichlorofluoromethane (R11)	**40.3**	5.0	ug/kg	40		101	70-130			
1,2,3-Trichloropropane	**35.1**	5.0	ug/kg	40		87.6	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**35.4**	5.0	ug/kg	40		88.4	70-130			
1,3,5-Trimethylbenzene	**40.5**	5.0	ug/kg	40		101	70-130			
1,2,4-Trimethylbenzene	**40.2**	5.0	ug/kg	40		101	70-130			
Vinyl chloride	**37.4**	5.0	ug/kg	40		93.4	75-125			
o-Xylene	**39.5**	2.0	ug/kg	40		98.6	75-125			
m,p-Xylenes	**78.3**	2.0	ug/kg	80		97.9	70-130			
Surrogate: 4-Bromofluorobenzene	*94.3*		*ug/kg*	*100*		*94.3*	*70-140*			
Surrogate: Dibromofluoromethane	*96.0*		*ug/kg*	*100*		*96.0*	*70-140*			
Surrogate: Toluene-d8	*94.8*		*ug/kg*	*100*		*94.8*	*70-140*			
LCS Dup (B8F2925-BSD1)				Prepared & Analyzed: 06/29/18						
Acetone	**33.2**	50	ug/kg	40		83.0	70-130	20.1	30	
tert-Amyl Methyl Ether (TAME)	**36.4**	5.0	ug/kg	40		91.0	70-130	2.84	30	
Benzene	**36.4**	2.0	ug/kg	40		90.9	75-125	1.96	30	
Bromobenzene	**41.5**	5.0	ug/kg	40		104	70-130	0.774	30	
Bromochloromethane	**45.8**	5.0	ug/kg	40		114	70-130	12.2	30	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948103
Date Received: 06/28/18
Date Reported: 07/03/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2925 - EPA 5035										
LCS Dup (B8F2925-BSD1) Continued				Prepared & Analyzed: 06/29/18						
Bromodichloromethane	**41.8**	5.0	ug/kg	40		105	75-125	6.01	30	
Bromoform	**39.2**	5.0	ug/kg	40		98.1	75-125	2.01	30	
Bromomethane	**56.0**	5.0	ug/kg	40		140	75-125	19.9	30	**
2-Butanone (MEK)	**24.2**	50	ug/kg	40		60.6	70-130	43.7	30	***
tert-Butyl alcohol (TBA)	**199**	20	ug/kg	200		99.6	70-130	22.8	30	
tert-Butylbenzene	**41.1**	5.0	ug/kg	40		103	70-130	0.727	30	
sec-Butylbenzene	**39.8**	5.0	ug/kg	40		99.4	70-130	2.92	30	
n-Butylbenzene	**37.6**	5.0	ug/kg	40		94.0	70-130	8.02	30	
Carbon Disulfide	**37.9**	5.0	ug/kg	40		94.7	70-130	9.11	30	
Carbon Tetrachloride	**44.6**	5.0	ug/kg	40		112	75-125	9.98	30	
Chlorobenzene	**40.2**	5.0	ug/kg	40		100	75-125	2.60	30	
Chloroethane	**47.1**	5.0	ug/kg	40		118	75-125	13.5	30	
Chloroform	**45.0**	5.0	ug/kg	40		112	75-125	8.19	30	
Chloromethane	**44.2**	5.0	ug/kg	40		110	65-125	16.7	30	
2-Chlorotoluene	**39.5**	5.0	ug/kg	40		98.7	70-130	0.202	30	
4-Chlorotoluene	**40.0**	5.0	ug/kg	40		99.9	7-130	1.10	30	
1,2-Dibromo-3-chloropropane	**37.9**	10	ug/kg	40		94.6	70-130	8.08	30	
Dibromochloromethane	**41.2**	5.0	ug/kg	40		103	75-125	5.02	30	
1,2-Dibromoethane (EDB)	**36.4**	5.0	ug/kg	40		91.0	70-130	2.76	30	
Dibromomethane	**38.9**	5.0	ug/kg	40		97.4	70-130	2.71	30	
1,2-Dichlorobenzene	**41.5**	5.0	ug/kg	40		104	70-130	2.15	30	
1,3-Dichlorobenzene	**40.3**	5.0	ug/kg	40		101	70-130	1.28	30	
1,4-Dichlorobenzene	**39.9**	5.0	ug/kg	40		99.6	75-125	1.64	30	
Dichlorodifluoromethane (R12)	**28.2**	5.0	ug/kg	40		70.4	70-130	4.72	30	
1,1-Dichloroethane	**40.3**	5.0	ug/kg	40		101	70-125	2.92	30	
1,2-Dichloroethane (EDC)	**47.4**	5.0	ug/kg	40		119	75-125	13.7	30	
trans-1,2-Dichloroethylene	**41.6**	5.0	ug/kg	40		104	75-125	0.967	30	
cis-1,2-Dichloroethylene	**41.1**	5.0	ug/kg	40		103	75-125	2.16	30	
1,1-Dichloroethylene	**44.2**	5.0	ug/kg	40		111	70-130	17.8	30	
1,2-Dichloropropane	**37.0**	5.0	ug/kg	40		92.4	75-130	3.92	30	
2,2-Dichloropropane	**39.3**	5.0	ug/kg	40		98.2	70-130	0.102	30	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948103
Date Received: 06/28/18
Date Reported: 07/03/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2925 - EPA 5035										
LCS Dup (B8F2925-BSD1) Continued				Prepared & Analyzed: 06/29/18						
1,3-Dichloropropane	**35.5**	5.0	ug/kg	40		88.8	70-130	3.16	30	
1,1-Dichloropropylene	**38.6**	5.0	ug/kg	40		96.4	70-130	0.0519	30	
trans-1,3-Dichloropropylene	**38.1**	5.0	ug/kg	40		95.3	70-130	4.06	30	
cis-1,3-Dichloropropylene	**39.1**	5.0	ug/kg	40		97.8	75-125	1.60	30	
Diisopropyl ether (DIPE)	**36.7**	5.0	ug/kg	40		91.8	70-130	0.976	30	
Ethylbenzene	**39.3**	2.0	ug/kg	40		98.4	75-125	4.08	30	
Ethyl-tert-Butyl Ether (ETBE)	**40.7**	5.0	ug/kg	40		102	70-130	8.29	30	
Hexachlorobutadiene	**44.6**	10	ug/kg	40		111	70-130	1.08	30	
2-Hexanone (MBK)	**29.3**	50	ug/kg	40		73.3	70-130	10.9	30	
Isopropylbenzene	**39.7**	5.0	ug/kg	40		99.3	70-130	1.00	30	
4-Isopropyltoluene	**41.1**	5.0	ug/kg	40		103	70-130	2.74	30	
Methyl-tert-Butyl Ether (MTBE)	**83.0**	5.0	ug/kg	80		104	75-125	11.0	30	
Methylene Chloride	**35.5**	50	ug/kg	40		88.8	75-130	20.6	30	
4-Methyl-2-pentanone (MIBK)	**34.8**	50	ug/kg	40		87.0	70-130	5.64	30	
Naphthalene	**40.5**	10	ug/kg	40		101	70-130	0.894	30	
n-Propylbenzene	**39.2**	5.0	ug/kg	40		98.0	70-130	5.17	30	
Styrene	**37.4**	5.0	ug/kg	40		93.4	70-130	4.65	30	
1,1,1,2-Tetrachloroethane	**41.6**	5.0	ug/kg	40		104	70-130	3.53	30	
1,1,2,2-Tetrachloroethane	**35.4**	5.0	ug/kg	40		88.4	70-135	3.39	30	
Tetrachloroethylene (PCE)	**38.5**	5.0	ug/kg	40		96.2	75-125	2.62	30	
Toluene	**38.6**	2.0	ug/kg	40		96.4	75-125	5.50	30	
1,2,4-Trichlorobenzene	**39.9**	5.0	ug/kg	40		99.8	70-130	13.1	30	
1,2,3-Trichlorobenzene	**41.5**	5.0	ug/kg	40		104	70-130	8.01	30	
1,1,2-Trichloroethane	**35.8**	5.0	ug/kg	40		89.6	75-125	3.56	30	
1,1,1-Trichloroethane	**44.3**	5.0	ug/kg	40		111	75-125	6.87	30	
Trichloroethylene (TCE)	**39.5**	5.0	ug/kg	40		98.8	75-125	2.41	30	
Trichlorofluoromethane (R11)	**46.9**	5.0	ug/kg	40		117	70-130	15.1	30	
1,2,3-Trichloropropane	**32.9**	5.0	ug/kg	40		82.4	70-130	6.24	30	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**39.3**	5.0	ug/kg	40		98.2	70-130	10.5	30	
1,3,5-Trimethylbenzene	**39.7**	5.0	ug/kg	40		99.2	70-130	2.04	30	
1,2,4-Trimethylbenzene	**38.9**	5.0	ug/kg	40		97.2	70-130	3.44	30	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948103
Date Received: 06/28/18
Date Reported: 07/03/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2925 - EPA 5035										
LCS Dup (B8F2925-BSD1) Continued				Prepared & Analyzed: 06/29/18						
Vinyl chloride	**45.1**	5.0	ug/kg	40		113	75-125	18.8	30	
o-Xylene	**37.6**	2.0	ug/kg	40		94.0	75-125	4.88	30	
m,p-Xylenes	**74.6**	2.0	ug/kg	80		93.3	70-130	4.79	30	
Surrogate: 4-Bromofluorobenzene	*95.9*		*ug/kg*	*100*		*95.9*	*70-140*			
Surrogate: Dibromofluoromethane	*102*		*ug/kg*	*100*		*102*	*70-140*			
Surrogate: Toluene-d8	*98.0*		*ug/kg*	*100*		*98.0*	*70-140*			
Matrix Spike (B8F2925-MS1)			**Source: 8F28009-01**	Prepared & Analyzed: 06/29/18						
Acetone	**37.6**	50	ug/kg	38	<50	97.9	70-130			
tert-Amyl Methyl Ether (TAME)	**35.0**	5.0	ug/kg	38	<5.0	91.0	70-130			
Benzene	**31.8**	2.0	ug/kg	38	<2.0	82.6	70-130			
Bromobenzene	**36.7**	5.0	ug/kg	38	<5.0	95.4	70-130			
Bromochloromethane	**42.8**	5.0	ug/kg	38	<5.0	111	70-130			
Bromodichloromethane	**35.7**	5.0	ug/kg	38	<5.0	92.9	70-130			
Bromoform	**34.1**	5.0	ug/kg	38	<5.0	88.8	70-130			
Bromomethane	**49.6**	5.0	ug/kg	38	<5.0	129	70-130			
2-Butanone (MEK)	**23.3**	50	ug/kg	38	<50	60.6	70-130			***
tert-Butyl alcohol (TBA)	**182**	20	ug/kg	190	<20	94.4	70-130			
tert-Butylbenzene	**35.0**	5.0	ug/kg	38	<5.0	91.1	70-130			
sec-Butylbenzene	**32.8**	5.0	ug/kg	38	<5.0	85.4	70-130			
n-Butylbenzene	**28.7**	5.0	ug/kg	38	<5.0	74.6	70-130			
Carbon Disulfide	**32.1**	5.0	ug/kg	38	<5.0	83.5	70-130			
Carbon Tetrachloride	**37.1**	5.0	ug/kg	38	<5.0	96.5	70-130			
Chlorobenzene	**33.3**	5.0	ug/kg	38	<5.0	86.5	70-130			
Chloroethane	**47.2**	5.0	ug/kg	38	<5.0	123	70-130			
Chloroform	**39.4**	5.0	ug/kg	38	<5.0	102	70-130			
Chloromethane	**44.2**	5.0	ug/kg	38	<5.0	115	70-130			
2-Chlorotoluene	**33.3**	5.0	ug/kg	38	<5.0	86.7	70-130			
4-Chlorotoluene	**33.2**	5.0	ug/kg	38	<5.0	86.3	70-130			
1,2-Dibromo-3-chloropropane	**35.7**	10	ug/kg	38	<10	92.7	70-130			
Dibromochloromethane	**37.1**	5.0	ug/kg	38	<5.0	96.5	70-130			
1,2-Dibromoethane (EDB)	**35.2**	5.0	ug/kg	38	<5.0	91.6	70-130			

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948103
Date Received: 06/28/18
Date Reported: 07/03/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2925 - EPA 5035										
Matrix Spike (B8F2925-MS1) Continued Source: 8F28009-01 Prepared & Analyzed: 06/29/18										
Dibromomethane	**36.6**	5.0	ug/kg	38	<5.0	95.0	70-130			
1,2-Dichlorobenzene	**32.6**	5.0	ug/kg	38	<5.0	84.7	70-130			
1,3-Dichlorobenzene	**31.6**	5.0	ug/kg	38	<5.0	82.2	70-130			
1,4-Dichlorobenzene	**31.7**	5.0	ug/kg	38	<5.0	82.5	70-130			
Dichlorodifluoromethane (R12)	**32.7**	5.0	ug/kg	38	<5.0	85.0	70-130			
1,1-Dichloroethane	**37.6**	5.0	ug/kg	38	<5.0	97.9	70-130			
1,2-Dichloroethane (EDC)	**42.2**	5.0	ug/kg	38	<5.0	110	70-130			
trans-1,2-Dichloroethylene	**38.0**	5.0	ug/kg	38	<5.0	98.9	70-130			
cis-1,2-Dichloroethylene	**36.8**	5.0	ug/kg	38	<5.0	95.6	70-130			
1,1-Dichloroethylene	**42.0**	5.0	ug/kg	38	<5.0	109	70-130			
1,2-Dichloropropane	**32.4**	5.0	ug/kg	38	<5.0	84.3	70-130			
2,2-Dichloropropane	**37.5**	5.0	ug/kg	38	<5.0	97.4	70-130			
1,3-Dichloropropane	**34.2**	5.0	ug/kg	38	<5.0	89.0	70-130			
1,1-Dichloropropylene	**32.2**	5.0	ug/kg	38	<5.0	83.8	70-130			
trans-1,3-Dichloropropylene	**30.4**	5.0	ug/kg	38	<5.0	79.1	70-130			
cis-1,3-Dichloropropylene	**34.3**	5.0	ug/kg	38	<5.0	89.3	70-130			
Diisopropyl ether (DIPE)	**34.9**	5.0	ug/kg	38	<5.0	90.8	70-130			
Ethylbenzene	**33.1**	2.0	ug/kg	38	1.17	83.0	70-130			
Ethyl-tert-Butyl Ether (ETBE)	**39.4**	5.0	ug/kg	38	<5.0	103	70-130			
Hexachlorobutadiene	**27.4**	10	ug/kg	38	<10	71.1	70-130			
2-Hexanone (MBK)	**23.8**	50	ug/kg	38	<50	61.9	70-130			QM-07
Isopropylbenzene	**35.4**	5.0	ug/kg	38	<5.0	92.1	70-130			
4-Isopropyltoluene	**33.3**	5.0	ug/kg	38	<5.0	86.6	70-130			
Methyl-tert-Butyl Ether (MTBE)	**81.4**	5.0	ug/kg	77	<5.0	106	70-130			
Methylene Chloride	**35.6**	50	ug/kg	38	<50	92.6	70-130			
4-Methyl-2-pentanone (MIBK)	**33.2**	50	ug/kg	38	<50	86.4	70-130			
Naphthalene	**27.0**	10	ug/kg	38	<10	70.2	70-130			
n-Propylbenzene	**33.8**	5.0	ug/kg	38	<5.0	87.8	70-130			
Styrene	**28.9**	5.0	ug/kg	38	<5.0	75.1	70-130			
1,1,1,2-Tetrachloroethane	**36.1**	5.0	ug/kg	38	<5.0	94.0	70-130			
1,1,2,2-Tetrachloroethane	**31.2**	5.0	ug/kg	38	<5.0	81.0	70-130			



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948103
Date Received: 06/28/18
Date Reported: 07/03/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2925 - EPA 5035										
Matrix Spike (B8F2925-MS1) Continued Source: 8F28009-01 Prepared & Analyzed: 06/29/18										
Tetrachloroethylene (PCE)	**32.6**	5.0	ug/kg	38	<5.0	84.7	70-130			
Toluene	**33.9**	2.0	ug/kg	38	<2.0	88.1	70-130			
1,2,4-Trichlorobenzene	**23.6**	5.0	ug/kg	38	<5.0	61.3	70-130			QM-07
1,2,3-Trichlorobenzene	**22.9**	5.0	ug/kg	38	<5.0	59.6	70-130			QM-07
1,1,2-Trichloroethane	**34.8**	5.0	ug/kg	38	<5.0	90.4	70-130			
1,1,1-Trichloroethane	**39.4**	5.0	ug/kg	38	<5.0	102	70-130			
Trichloroethylene (TCE)	**34.2**	5.0	ug/kg	38	<5.0	88.9	70-130			
Trichlorofluoromethane (R11)	**46.2**	5.0	ug/kg	38	<5.0	120	70-130			
1,2,3-Trichloropropane	**32.3**	5.0	ug/kg	38	<5.0	84.0	70-130			
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**45.0**	5.0	ug/kg	38	<5.0	117	70-130			
1,3,5-Trimethylbenzene	**34.4**	5.0	ug/kg	38	<5.0	89.5	70-130			
1,2,4-Trimethylbenzene	**34.0**	5.0	ug/kg	38	<5.0	88.3	70-130			
Vinyl chloride	**46.9**	5.0	ug/kg	38	<5.0	122	70-130			
o-Xylene	**31.4**	2.0	ug/kg	38	<2.0	81.7	70-130			
m,p-Xylenes	**63.0**	2.0	ug/kg	77	1.83	79.6	70-130			
Surrogate: 4-Bromofluorobenzene	*101*		*ug/kg*	*96*		*105*	*70-140*			
Surrogate: Dibromofluoromethane	*97.9*		*ug/kg*	*96*		*102*	*70-140*			
Surrogate: Toluene-d8	*97.8*		*ug/kg*	*96*		*102*	*70-140*			
Matrix Spike Dup (B8F2925-MSD1) Source: 8F28009-01 Prepared & Analyzed: 06/29/18										
Acetone	**40.4**	50	ug/kg	40	<50	101	70-130	7.19	40	
tert-Amyl Methyl Ether (TAME)	**39.7**	5.0	ug/kg	40	<5.0	99.3	70-130	12.6	40	
Benzene	**37.2**	2.0	ug/kg	40	<2.0	93.1	70-130	15.8	40	
Bromobenzene	**45.7**	5.0	ug/kg	40	<5.0	114	70-130	21.9	40	
Bromochloromethane	**45.8**	5.0	ug/kg	40	<5.0	115	70-130	6.80	40	
Bromodichloromethane	**43.6**	5.0	ug/kg	40	<5.0	109	70-130	19.9	40	
Bromoform	**41.4**	5.0	ug/kg	40	<5.0	103	70-130	19.2	40	
Bromomethane	**53.9**	5.0	ug/kg	40	<5.0	135	70-130	8.36	40	**
2-Butanone (MEK)	**22.0**	50	ug/kg	40	<50	55.0	70-130	5.95	40	***
tert-Butyl alcohol (TBA)	**213**	20	ug/kg	200	<20	107	70-130	16.1	40	
tert-Butylbenzene	**43.0**	5.0	ug/kg	40	<5.0	108	70-130	20.5	40	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948103
Date Received: 06/28/18
Date Reported: 07/03/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2925 - EPA 5035										
Matrix Spike Dup (B8F2925-MSD1) Continued				**Source: 8F28009-01**		Prepared & Analyzed: 06/29/18				
sec-Butylbenzene	**40.4**	5.0	ug/kg	40	<5.0	101	70-130	20.7	40	
n-Butylbenzene	**35.6**	5.0	ug/kg	40	<5.0	89.1	70-130	21.6	40	
Carbon Disulfide	**36.5**	5.0	ug/kg	40	<5.0	91.2	70-130	12.7	40	
Carbon Tetrachloride	**44.0**	5.0	ug/kg	40	<5.0	110	70-130	17.0	40	
Chlorobenzene	**40.6**	5.0	ug/kg	40	<5.0	101	70-130	19.7	40	
Chloroethane	**50.2**	5.0	ug/kg	40	<5.0	126	70-130	6.10	40	
Chloroform	**46.2**	5.0	ug/kg	40	<5.0	116	70-130	16.0	40	
Chloromethane	**46.9**	5.0	ug/kg	40	<5.0	117	70-130	6.12	40	
2-Chlorotoluene	**41.9**	5.0	ug/kg	40	<5.0	105	70-130	22.8	40	
4-Chlorotoluene	**41.9**	5.0	ug/kg	40	<5.0	105	70-130	23.1	40	
1,2-Dibromo-3-chloropropane	**43.1**	10	ug/kg	40	<10	108	70-130	19.0	40	
Dibromochloromethane	**45.6**	5.0	ug/kg	40	<5.0	114	70-130	20.5	40	
1,2-Dibromoethane (EDB)	**41.6**	5.0	ug/kg	40	<5.0	104	70-130	16.6	40	
Dibromomethane	**41.6**	5.0	ug/kg	40	<5.0	104	70-130	12.9	40	
1,2-Dichlorobenzene	**42.3**	5.0	ug/kg	40	<5.0	106	70-130	25.9	40	
1,3-Dichlorobenzene	**40.9**	5.0	ug/kg	40	<5.0	102	70-130	25.7	40	
1,4-Dichlorobenzene	**40.7**	5.0	ug/kg	40	<5.0	102	70-130	24.7	40	
Dichlorodifluoromethane (R12)	**34.1**	5.0	ug/kg	40	<5.0	85.2	70-130	4.16	40	
1,1-Dichloroethane	**42.0**	5.0	ug/kg	40	<5.0	105	70-130	10.9	40	
1,2-Dichloroethane (EDC)	**49.0**	5.0	ug/kg	40	<5.0	122	70-130	14.8	40	
trans-1,2-Dichloroethylene	**43.9**	5.0	ug/kg	40	<5.0	110	70-130	14.4	40	
cis-1,2-Dichloroethylene	**42.7**	5.0	ug/kg	40	<5.0	107	70-130	15.1	40	
1,1-Dichloroethylene	**44.2**	5.0	ug/kg	40	<5.0	111	70-130	5.19	40	
1,2-Dichloropropane	**38.5**	5.0	ug/kg	40	<5.0	96.4	70-130	17.3	40	
2,2-Dichloropropane	**41.9**	5.0	ug/kg	40	<5.0	105	70-130	11.1	40	
1,3-Dichloropropane	**40.8**	5.0	ug/kg	40	<5.0	102	70-130	17.6	40	
1,1-Dichloropropylene	**38.9**	5.0	ug/kg	40	<5.0	97.2	70-130	18.8	40	
trans-1,3-Dichloropropylene	**36.4**	5.0	ug/kg	40	<5.0	91.1	70-130	18.0	40	
cis-1,3-Dichloropropylene	**40.9**	5.0	ug/kg	40	<5.0	102	70-130	17.6	40	
Diisopropyl ether (DIPE)	**40.6**	5.0	ug/kg	40	<5.0	102	70-130	15.1	40	
Ethylbenzene	**39.7**	2.0	ug/kg	40	1.17	96.3	70-130	18.2	40	



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948103
Date Received: 06/28/18
Date Reported: 07/03/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2925 - EPA 5035										
Matrix Spike Dup (B8F2925-MSD1) Continued				**Source: 8F28009-01**		Prepared & Analyzed: 06/29/18				
Ethyl-tert-Butyl Ether (ETBE)	**45.0**	5.0	ug/kg	40	<5.0	113	70-130	13.3	40	
Hexachlorobutadiene	**34.4**	10	ug/kg	40	<10	86.0	70-130	22.7	40	
2-Hexanone (MBK)	**28.2**	50	ug/kg	40	<50	70.6	70-130	17.0	40	
Isopropylbenzene	**43.8**	5.0	ug/kg	40	<5.0	109	70-130	21.1	40	
4-Isopropyltoluene	**41.5**	5.0	ug/kg	40	<5.0	104	70-130	21.8	40	
Methyl-tert-Butyl Ether (MTBE)	**91.2**	5.0	ug/kg	80	<5.0	114	70-130	11.4	40	
Methylene Chloride	**39.9**	50	ug/kg	40	<50	99.7	70-130	11.3	40	
4-Methyl-2-pentanone (MIBK)	**37.2**	50	ug/kg	40	<50	93.0	70-130	11.3	40	
Naphthalene	**38.6**	10	ug/kg	40	<10	96.6	70-130	35.4	40	
n-Propylbenzene	**41.8**	5.0	ug/kg	40	<5.0	105	70-130	21.2	40	
Styrene	**35.9**	5.0	ug/kg	40	<5.0	89.8	70-130	21.7	40	
1,1,1,2-Tetrachloroethane	**44.8**	5.0	ug/kg	40	<5.0	112	70-130	21.5	40	
1,1,2,2-Tetrachloroethane	**36.5**	5.0	ug/kg	40	<5.0	91.2	70-130	15.8	40	
Tetrachloroethylene (PCE)	**38.6**	5.0	ug/kg	40	<5.0	96.6	70-130	17.0	40	
Toluene	**41.2**	2.0	ug/kg	40	<2.0	103	70-130	19.4	40	
1,2,4-Trichlorobenzene	**33.0**	5.0	ug/kg	40	<5.0	82.5	70-130	33.3	40	
1,2,3-Trichlorobenzene	**32.9**	5.0	ug/kg	40	<5.0	82.2	70-130	35.6	40	
1,1,2-Trichloroethane	**41.1**	5.0	ug/kg	40	<5.0	103	70-130	16.7	40	
1,1,1-Trichloroethane	**45.0**	5.0	ug/kg	40	<5.0	112	70-130	13.2	40	
Trichloroethylene (TCE)	**39.9**	5.0	ug/kg	40	<5.0	99.8	70-130	15.5	40	
Trichlorofluoromethane (R11)	**48.1**	5.0	ug/kg	40	<5.0	120	70-130	4.13	40	
1,2,3-Trichloropropane	**37.8**	5.0	ug/kg	40	<5.0	94.4	70-130	15.6	40	
1,1,2-Trichloro-1,2,2-trifluoroethane (R113)	**43.7**	5.0	ug/kg	40	<5.0	109	70-130	2.84	40	
1,3,5-Trimethylbenzene	**41.8**	5.0	ug/kg	40	<5.0	104	70-130	19.3	40	
1,2,4-Trimethylbenzene	**41.7**	5.0	ug/kg	40	<5.0	104	70-130	20.4	40	
Vinyl chloride	**48.5**	5.0	ug/kg	40	<5.0	121	70-130	3.39	40	
o-Xylene	**39.1**	2.0	ug/kg	40	<2.0	97.7	70-130	21.7	40	
m,p-Xylenes	**76.2**	2.0	ug/kg	80	1.83	92.9	70-130	18.9	40	
Surrogate: 4-Bromofluorobenzene	*105*		*ug/kg*	*100*		*105*	*70-140*			

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948103
Date Received: 06/28/18
Date Reported: 07/03/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
VOCs & OXYGENATES by GC/MS - Quality Control										
Batch B8F2925 - EPA 5035										
Matrix Spike Dup (B8F2925-MSD1) Continued				**Source: 8F28009-01**		Prepared & Analyzed: 06/29/18				
Surrogate: Dibromofluoromethane	*102*		*ug/kg*	*100*		*102*	*70-140*			
Surrogate: Toluene-d8	*101*		*ug/kg*	*100*		*101*	*70-140*			
Carbon Chain by GC/FID - Quality Control										
Batch B8F2913 - EPA 3550B										
Blank (B8F2913-BLK1)						Prepared: 06/29/18	Analyzed: 06/30/18			
C6-C8	<1.0	1.0	mg/kg							
C8-C10	<1.0	1.0	mg/kg							
C10-C12	<1.0	1.0	mg/kg							
C12-C14	<1.0	1.0	mg/kg							
C14-C16	<1.0	1.0	mg/kg							
C16-C18	<1.0	1.0	mg/kg							
C18-C20	<1.0	1.0	mg/kg							
C20-C22	<1.0	1.0	mg/kg							
C22-C24	<1.0	1.0	mg/kg							
C24-C26	<1.0	1.0	mg/kg							
C26-C28	<1.0	1.0	mg/kg							
C28-C32	<1.0	1.0	mg/kg							
C32-C34	<1.0	1.0	mg/kg							
C34-C36	<1.0	1.0	mg/kg							
C36-C40	<1.0	1.0	mg/kg							
C40-C44	<1.0	1.0	mg/kg							
TPH (C6-C44)	<10	10	mg/kg							
Gasoline Range Organics (C6-C10)	<5.0	5.0	mg/kg							
Diesel Range Organics (C10-C23)	<5.0	5.0	mg/kg							
Oil Range Organics (C23-C44)	<5.0	5.0	mg/kg							
Surrogate: o-Terphenyl	*8.38*		*mg/kg*	*10*		*83.8*	*50-150*			
LCS (B8F2913-BS1)						Prepared: 06/29/18	Analyzed: 06/30/18			
Diesel Range Organics as Diesel	**163**	10	mg/kg	200		81.7	75-125			
Surrogate: o-Terphenyl	*11.4*		*mg/kg*	*10*		*114*	*50-150*			

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948103
Date Received: 06/28/18
Date Reported: 07/03/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Carbon Chain by GC/FID - Quality Control										
Batch B8F2913 - EPA 3550B										
LCS Dup (B8F2913-BSD1)				Prepared: 06/29/18 Analyzed: 06/30/18						
Diesel Range Organics as Diesel	**164**	10	mg/kg	200		82.2	75-125	0.627	40	
Surrogate: o-Terphenyl	*12.0*		*mg/kg*	*10*		*120*	*50-150*			
Total Metals CAM 17 - Quality Control										
Batch B8F2929 - EPA 3050B										
Blank (B8F2929-BLK1)				Prepared: 06/29/18 Analyzed: 07/02/18						
Antimony	<10	10	mg/kg							
Arsenic	<0.50	0.50	mg/kg							
Barium	<10	10	mg/kg							
Beryllium	<1.0	1.0	mg/kg							
Cadmium	<1.0	1.0	mg/kg							
Chromium	<3.0	3.0	mg/kg							
Cobalt	<3.0	3.0	mg/kg							
Copper	<3.0	3.0	mg/kg							
Lead	<3.0	3.0	mg/kg							
Molybdenum	<5.0	5.0	mg/kg							
Nickel	<3.0	3.0	mg/kg							
Selenium	<0.50	0.50	mg/kg							
Silver	<1.0	1.0	mg/kg							
Thallium	<5.0	5.0	mg/kg							
Vanadium	<10	10	mg/kg							
Zinc	<3.0	3.0	mg/kg							
LCS (B8F2929-BS1)				Prepared: 06/29/18 Analyzed: 07/02/18						
Antimony	**50.8**	10	mg/kg	50		102	80-120			
Arsenic	**50.6**	0.50	mg/kg	50		101	80-120			
Barium	**50.2**	10	mg/kg	50		100	80-120			
Beryllium	**52.3**	1.0	mg/kg	50		105	80-120			
Cadmium	**51.4**	1.0	mg/kg	50		103	80-120			
Chromium	**49.4**	3.0	mg/kg	50		98.8	80-120			
Cobalt	**50.6**	3.0	mg/kg	50		101	80-120			
Copper	**48.2**	3.0	mg/kg	50		96.4	80-120			



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948103
Date Received: 06/28/18
Date Reported: 07/03/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Metals CAM 17 - Quality Control										
Batch B8F2929 - EPA 3050B										
LCS (B8F2929-BS1) Continued				Prepared: 06/29/18 Analyzed: 07/02/18						
Lead	**48.2**	3.0	mg/kg	50		96.4	80-120			
Molybdenum	**49.9**	5.0	mg/kg	50		99.7	80-120			
Nickel	**51.0**	3.0	mg/kg	50		102	80-120			
Selenium	**48.0**	0.50	mg/kg	50		96.1	80-120			
Silver	**50.9**	1.0	mg/kg	50		102	80-120			
Thallium	**59.4**	5.0	mg/kg	50		119	80-120			
Vanadium	**50.4**	10	mg/kg	50		101	80-120			
Zinc	**53.3**	3.0	mg/kg	50		107	80-120			
LCS Dup (B8F2929-BSD1)				Prepared: 06/29/18 Analyzed: 07/02/18						
Antimony	**48.1**	10	mg/kg	50		96.2	80-120	5.56	20	
Arsenic	**47.6**	0.50	mg/kg	50		95.3	80-120	6.15	20	
Barium	**46.6**	10	mg/kg	50		93.2	80-120	7.44	20	
Beryllium	**50.0**	1.0	mg/kg	50		99.9	80-120	4.65	20	
Cadmium	**49.3**	1.0	mg/kg	50		98.6	80-120	4.19	20	
Chromium	**47.0**	3.0	mg/kg	50		94.0	80-120	4.92	20	
Cobalt	**48.0**	3.0	mg/kg	50		96.1	80-120	5.07	20	
Copper	**45.1**	3.0	mg/kg	50		90.3	80-120	6.60	20	
Lead	**46.0**	3.0	mg/kg	50		91.9	80-120	4.80	20	
Molybdenum	**45.9**	5.0	mg/kg	50		91.7	80-120	8.38	20	
Nickel	**48.7**	3.0	mg/kg	50		97.3	80-120	4.74	20	
Selenium	**46.6**	0.50	mg/kg	50		93.1	80-120	3.17	20	
Silver	**46.8**	1.0	mg/kg	50		93.5	80-120	8.46	20	
Thallium	**55.6**	5.0	mg/kg	50		111	80-120	6.62	20	
Vanadium	**47.5**	10	mg/kg	50		95.0	80-120	5.98	20	
Zinc	**54.8**	3.0	mg/kg	50		110	80-120	2.74	20	
Matrix Spike (B8F2929-MS1)			**Source: 8F28009-01**	Prepared: 06/29/18 Analyzed: 07/02/18						
Antimony	**25.4**	10	mg/kg	50	<10	50.9	75-125			QM-07
Arsenic	**50.2**	0.50	mg/kg	50	2.93	94.5	75-125			
Barium	**105**	10	mg/kg	50	51.4	108	75-125			
Beryllium	**47.3**	1.0	mg/kg	50	<1.0	94.5	75-125			
Cadmium	**37.8**	1.0	mg/kg	50	<1.0	75.6	75-125			

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948103
Date Received: 06/28/18
Date Reported: 07/03/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Metals CAM 17 - Quality Control										
Batch B8F2929 - EPA 3050B										
Matrix Spike (B8F2929-MS1) Continued Source: 8F28009-01 Prepared: 06/29/18 Analyzed: 07/02/18										
Chromium	**61.2**	3.0	mg/kg	50	11.0	100	75-125			
Cobalt	**48.6**	3.0	mg/kg	50	3.16	90.9	75-125			
Copper	**58.0**	3.0	mg/kg	50	3.32	109	75-125			
Lead	**79.8**	3.0	mg/kg	50	21.5	117	75-125			
Molybdenum	**48.0**	5.0	mg/kg	50	<5.0	95.9	75-125			
Nickel	**54.8**	3.0	mg/kg	50	9.17	91.2	75-125			
Selenium	**37.6**	0.50	mg/kg	50	<0.50	75.1	75-125			
Silver	**53.2**	1.0	mg/kg	50	<1.0	106	75-125			
Thallium	**48.5**	5.0	mg/kg	50	<5.0	97.1	60-140			
Vanadium	**74.7**	10	mg/kg	50	23.8	102	75-125			
Zinc	**137**	3.0	mg/kg	50	84.2	105	75-125			
Matrix Spike Dup (B8F2929-MSD1) **Source: 8F28009-01** Prepared: 06/29/18 Analyzed: 07/02/18										
Antimony	**26.3**	10	mg/kg	50	<10	52.6	75-125	3.36	40	QM-07
Arsenic	**49.5**	0.50	mg/kg	50	2.93	93.2	75-125	1.30	40	
Barium	**103**	10	mg/kg	50	51.4	103	75-125	2.40	40	
Beryllium	**47.2**	1.0	mg/kg	50	<1.0	94.5	75-125	0.0423	40	
Cadmium	**40.7**	1.0	mg/kg	50	<1.0	81.3	75-125	7.31	40	
Chromium	**60.9**	3.0	mg/kg	50	11.0	99.7	75-125	0.540	40	
Cobalt	**49.2**	3.0	mg/kg	50	3.16	92.2	75-125	1.25	40	
Copper	**61.3**	3.0	mg/kg	50	3.32	116	75-125	5.63	40	
Lead	**69.0**	3.0	mg/kg	50	21.5	94.9	75-125	14.6	40	
Molybdenum	**49.0**	5.0	mg/kg	50	<5.0	98.0	75-125	2.15	40	
Nickel	**56.3**	3.0	mg/kg	50	9.17	94.2	75-125	2.70	40	
Selenium	**38.0**	0.50	mg/kg	50	<0.50	76.0	75-125	1.22	40	
Silver	**52.9**	1.0	mg/kg	50	<1.0	106	75-125	0.547	40	
Thallium	**47.6**	5.0	mg/kg	50	<5.0	95.1	60-140	2.04	40	
Vanadium	**74.7**	10	mg/kg	50	23.8	102	75-125	0.107	40	
Zinc	**180**	3.0	mg/kg	50	84.2	192	75-125	27.4	40	QM-07
Total Metals CAM 17 - Quality Control										
Batch B8G0224 - EPA 7471A Prep										
Blank (B8G0224-BLK1) Prepared & Analyzed: 07/02/18										



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948103
Date Received: 06/28/18
Date Reported: 07/03/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Total Metals CAM 17 - Quality Control										
Batch B8G0224 - EPA 7471A Prep										
Blank (B8G0224-BLK1) Continued				Prepared & Analyzed: 07/02/18						
Mercury	<0.020	0.020	mg/kg							
LCS (B8G0224-BS1)				Prepared & Analyzed: 07/02/18						
Mercury	**0.496**	0.020	mg/kg	0.50		99.3	80-120			
LCS Dup (B8G0224-BSD1)				Prepared & Analyzed: 07/02/18						
Mercury	**0.498**	0.020	mg/kg	0.50		99.5	80-120	0.201	25	
Matrix Spike (B8G0224-MS1)		**Source: 8F28009-01**		Prepared & Analyzed: 07/02/18						
Mercury	**0.586**	0.020	mg/kg	0.50	0.0940	98.4	75-125			
Matrix Spike Dup (B8G0224-MSD1)		**Source: 8F28009-01**		Prepared & Analyzed: 07/02/18						
Mercury	**0.584**	0.020	mg/kg	0.50	0.0940	98.1	75-125	0.256	25	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Soil & GW

AA Project No: A948103
Date Received: 06/28/18
Date Reported: 07/03/18

Special Notes

[1] = ****** : Exceeds upper control limit.

[2] = ******* : Exceeds lower control limit.

[3] = **QM-07** : The spike recovery was outside acceptance limits for the MS and/or MSD. The batch was accepted based on acceptable LCS recovery.

Viorel Vasile
Operations Manager

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311
Tel: 818-998-5547 FAX: 818-998-7258

A.A. COC No.: 15567
70051731
Page 1 of 1

Client: AECOM	Project Name / No.: 128 Hurricane St 60553849	Sampler's Name: A. Vigna
Project Manager: Kaleena Johnson	Site Address:	Sampler's Signature:
Phone:	City: LA	P.O. No.:
Fax:	State & Zip: CA	Quote No.:

TAT Turnaround Codes **

(1) = Same Day Rush
(2) = 24 Hour Rush
(3) = 48 Hour Rush
(4) = 72 Hour Rush
(5) = 5 Day Rush
X = 10 Working Days (Standard TAT)

ANALYSIS REQUESTED (Test Name)

Client I.D.	A.A. I.D.	Date	Time	Sample Matrix	No. of Cont	TPH cc (8015)	VOCs	T22 Metals	Please enter the TAT Turnaround Codes ** below	Special Instructions
Waste062318	18P28009-01	6/28/18	1520	Soil	3	X	X	X		48 Hr TAT

For Laboratory Use

PRIORITY
Rush 48 Hrs SH
Date 6/29/18 Time 0900 Sign

A.A. Project No.: 18P0103/18P28009

Relinquished by	Date	Time	Received by
	6/29/18	1530	
	6-28-18	536	

Note: By relinquishing samples to American Analytics, client agrees to pay for the services requested on this chain of custody form and any additional client-requested analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 45 days following the submittal of the sample(s) to American Analytics.

Appendix F – Soil Gas Analytical Laboratory Reports and LADBS Form 1

AMERICAN ANALYTICS

9765 Eton Avenue
Chatsworth
California 91311
Tel: (818) 998-5547
Fax: (818) 998-7258

June 28, 2018

Kaleena Johnson

AECOM (LA)

300 S. Grand Ave., Suite 800

Los Angeles, CA 90017

Re : 128 Hurricane - Methane Investigation

A948100 / 8F26021

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received on 06/26/18 10:27 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Program Manual, applicable standard operating procedures, and other related documentation. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report or require additional information please call me at American Analytics.

Sincerely,



Viorel Vasile

Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Methane Investigation

AA Project No: A948100
Date Received: 06/26/18
Date Reported: 06/28/18

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
Fixed Gases					
SB-3	8F26021-01	Vapor	2	06/26/18 08:28	06/26/18 10:27
SB-1	8F26021-02	Vapor	2	06/26/18 08:51	06/26/18 10:27

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Methane Investigation
Method: Fixed Gases by TCD

AA Project No: A948100
Date Received: 06/26/18
Date Reported: 06/28/18
Units: % by Volume

Date Sampled:	06/26/18	06/26/18	
Date Prepared:	06/26/18	06/26/18	
Date Analyzed:	06/27/18	06/27/18	
AA ID No:	8F26021-01	8F26021-02	
Client ID No:	SB-3	SB-1	
Matrix:	Vapor	Vapor	
Dilution Factor:	1	1	MRL
Fixed Gases (ASTM D1946M)			
Methane	<0.10	<0.10	0.10
Oxygen	**17**	**17**	0.10
Carbon Dioxide	**1.2**	**2.5**	0.10

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Methane Investigation

AA Project No: A948100
Date Received: 06/26/18
Date Reported: 06/28/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Fixed Gases by TCD - Quality Control										
*Batch B8F2642 - *** DEFAULT PREP ****										
Blank (B8F2642-BLK1)				Prepared: 06/26/18 Analyzed: 06/27/18						
Methane	<0.10	0.10	% by Volume							
Oxygen	<0.10	0.10	% by Volume							
Carbon Dioxide	<0.10	0.10	% by Volume							
LCS (B8F2642-BS1)				Prepared: 06/26/18 Analyzed: 06/27/18						
Methane	**4.08**	0.20	% by Volume	4.5		90.7	75-125			
Oxygen	**4.16**	0.20	% by Volume	4.0		104	75-125			
Carbon Dioxide	**13.7**	0.20	% by Volume	15		91.5	75-125			
LCS Dup (B8F2642-BSD1)				Prepared: 06/26/18 Analyzed: 06/27/18						
Methane	**3.97**	0.20	% by Volume	4.5		88.2	75-125	2.73	30	
Oxygen	**4.09**	0.20	% by Volume	4.0		102	75-125	1.55	30	
Carbon Dioxide	**13.4**	0.20	% by Volume	15		89.5	75-125	2.14	30	
Duplicate (B8F2642-DUP1)				**Source: 8F26021-02** Prepared: 06/26/18 Analyzed: 06/27/18						
Methane	**<0.10**	0.10	% by Volume		<0.10				30	
Oxygen	**17.2**	0.10	% by Volume		17.2			0.145	30	
Carbon Dioxide	**2.40**	0.10	% by Volume		2.50			3.84	30	

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client:	AECOM (LA)	**AA Project No:**	A948100
Project No:	NA	**Date Received:**	06/26/18
Project Name:	128 Hurricane - Methane Investigation	**Date Reported:**	06/28/18

Special Notes

Viorel Vasile
Operations Manager

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311
Tel: 818-998-5547 FAX: 818-998-7258

A.A. COC No.: 15945
70051340
Page 1 of 1

Client: AECOM	Project Name / No.: 60553849	Sampler's Name: Juan Rodriguez
Project Manager: Kaleena Johnson	Site Address: 128 Hurricane	Sampler's Signature:
Phone: 831 206 2121	City: Marina DEL Rey	P.O. No.:
Fax:	State & Zip: CA	Quote No.:

TAT Turnaround Codes **

(1) = Same Day Rush
(2) = 24 Hour Rush
(3) = 48 Hour Rush
(4) = 72 Hour Rush
(5) = 5 Day Rush
X = 10 Working Days (Standard TAT)

ANALYSIS REQUESTED (Test Name)

Please enter the TAT Turnaround Codes ** below

Client I.D.	A.A. I.D.	Date	Time	Sample Matrix	No. of Cont	* METHANE	Special Instructions
SB-3	6F26021-01	6/26/18	828	VAPOR	2	X	* Fixed Gases
SB-1	-02	6/26/18	851	VAPOR	2	X	

For Laboratory Use

PRIORITY
Rush ___ Hrs SH ✓
Date 6/26/18 Time 1130 Sign

A.A. Project No.: 6F26021-01, 6F26021-02

	Date	Time	
Relinquished by	6/26/18	900	Received by
Relinquished by	6/26/18	1027	Received by
Relinquished by	Date	Time	Received by

Note: By relinquishing samples to American Analytics, client agrees to pay for the services requested on this chain of custody form and any additional client-requested analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 45 days following the submittal of the sample(s) to American Analytics.

AMERICAN ANALYTICS

9765 Eton Avenue
Chatsworth
California 91311
Tel: (818) 998-5547
Fax: (818) 998-7258

June 28, 2018

Kaleena Johnson

AECOM (LA)

300 S. Grand Ave., Suite 800

Los Angeles, CA 90017

Re : 128 Hurricane - Methane Investigation

MB948101 / 8F27012

Enclosed is an analytical report for the above-referenced project. The samples included in this report were received on 06/27/18 11:10 and analyzed in accordance with the attached chain-of-custody.

Unless otherwise noted, all analytical testing was accomplished in accordance with the guidelines established in our Quality Assurance Program Manual, applicable standard operating procedures, and other related documentation. The results in this analytical report are limited to the samples tested and any reproduction thereof must be made in its entirety.

If you have any questions regarding this report or require additional information please call me at American Analytics.

Sincerely,



Viorel Vasile

Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Methane Investigation

AA Project No: MB948101
Date Received: 06/27/18
Date Reported: 06/28/18

Sample ID	Laboratory ID	Matrix	TAT	Date Sampled	Date Received
Fixed Gases					
SB-3	8F27012-01	Vapor	2	06/27/18 08:30	06/27/18 11:10
SB-1	8F27012-02	Vapor	2	06/27/18 08:53	06/27/18 11:10

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Methane Investigation
Method: Fixed Gases by TCD

AA Project No: MB948101
Date Received: 06/27/18
Date Reported: 06/28/18
Units: % by Volume

Date Sampled:	06/27/18	06/27/18	
Date Prepared:	06/27/18	06/27/18	
Date Analyzed:	06/27/18	06/27/18	
AA ID No:	8F27012-01	8F27012-02	
Client ID No:	SB-3	SB-1	
Matrix:	Vapor	Vapor	
Dilution Factor:	1	1	MRL
Fixed Gases (ASTM D1946M)			
Methane	<0.10	<0.10	0.10
Oxygen	**19**	**17**	0.10
Carbon Dioxide	**1.3**	**2.6**	0.10

Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client: AECOM (LA)
Project No: NA
Project Name: 128 Hurricane - Methane Investigation

AA Project No: MB948101
Date Received: 06/27/18
Date Reported: 06/28/18

Analyte	Result	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit	Notes
Fixed Gases by TCD - Quality Control										
*Batch B8F2733 - *** DEFAULT PREP ****										
Blank (B8F2733-BLK1)				Prepared & Analyzed: 06/27/18						
Methane	<0.10	0.10	% by Volume							
Oxygen	<0.10	0.10	% by Volume							
Carbon Dioxide	<0.10	0.10	% by Volume							
LCS (B8F2733-BS1)				Prepared & Analyzed: 06/27/18						
Methane	**3.80**	0.20	% by Volume	4.5		84.5	75-125			
Oxygen	**3.84**	0.20	% by Volume	4.0		96.0	75-125			
Carbon Dioxide	**12.9**	0.20	% by Volume	15		85.7	75-125			
LCS Dup (B8F2733-BSD1)				Prepared & Analyzed: 06/27/18						
Methane	**3.83**	0.20	% by Volume	4.5		85.1	75-125	0.681	30	
Oxygen	**3.90**	0.20	% by Volume	4.0		97.6	75-125	1.55	30	
Carbon Dioxide	**13.0**	0.20	% by Volume	15		86.4	75-125	0.821	30	
Duplicate (B8F2733-DUP1)				**Source: 8F27012-02** Prepared & Analyzed: 06/27/18						
Methane	**<0.10**	0.10	% by Volume		<0.10				30	
Oxygen	**17.6**	0.10	% by Volume		16.8			4.65	30	
Carbon Dioxide	**2.70**	0.10	% by Volume		2.61			3.50	30	



Viorel Vasile
Operations Manager

LABORATORY ANALYSIS RESULTS

Client:	AECOM (LA)	**AA Project No:**	MB948101
Project No:	NA	**Date Received:**	06/27/18
Project Name:	128 Hurricane - Methane Investigation	**Date Reported:**	06/28/18

Special Notes

Viorel Vasile
Operations Manager

AMERICAN ANALYTICS CHAIN-OF-CUSTODY RECORD

9765 ETON AVE., CHATSWORTH, CA 91311
Tel: 818-998-5547 FAX: 818-998-7258

A.A. COC No.: 15858
70051334
Page 1 of 1

Client: AECOM	**Project Name / No.:** 60553849	**Sampler's Name:** Juan Rodriguez
Project Manager: Kaleena Johnson	**Site Address:** 128 Hurricane st	**Sampler's Signature:**
Phone: 831 206 2121	**City:** Marina del Rey	**P.O. No.:**
Fax:	**State & Zip:** CA	**Quote No.:**

TAT Turnaround Codes **

(1) = Same Day Rush
(2) = 24 Hour Rush
(3) = 48 Hour Rush
(4) = 72 Hour Rush
(5) = 5 Day Rush
X = 10 Working Days (Standard TAT)

ANALYSIS REQUESTED (Test Name)

Please enter the TAT Turnaround Codes ** below

Client I.D.	A.A. I.D.	Date	Time	Sample Matrix	No. of Cont	(A) Methane									Special Instructions
SB-3	8F27012-01	6/27/18	830	VAPOR	2	X									*: Final Canisters
SB-1	02	6/27/18	853	VAPOR	2	X									

For Laboratory Use

PRIORITY
Rush ___ Hrs SH ✓
Date 6/27/18 Time 1145 Sign

A.A. Project No.: MB9810 / 8F27012

	Relinquished by	Date	Time	Received by
1		6/27/18	0900	
2		6/27/18	1110	
3		Date	Time	Received by

Note: By relinquishing samples to American Analytics, client agrees to pay for the services requested on this chain of custody form and any additional client-requested analyses performed on this project. Payment for services is due within 30 days from the date of invoice. Sample(s) will be disposed of after 45 days following the submittal of the sample(s) to American Analytics.

FORM 1 - CERTIFICATE OF COMPLIANCE FOR METHANE TEST DATA

Part 1: Certification Sheet

Site Address: 128 Hurricane Street, Marina del Rey, CA
Legal Description: Tract: _____ Lot: Block:
Building Use: Vacant Lot

Architect's, Engineer's or Geologist's Stamp:

Name of Architect, Engineer, or Geologist:
Alexis Bahou
Mailing Address:
300 S. Grand Ave., Suite 800
Los Angeles, CA 90071
Telephone:

Name of Testing Laboratory:
American Analytics
City Test Lab License #: 10215
Telephone: (818) 998-5547

I hereby certify that I have tested the above site for the purpose of methane mitigation and that all procedures were conducted by a City of Los Angeles licensed testing agency in conformity with the requirements of the LADBS Information Bulletin P/BC 2014-101. Where the inspection and testing of all or part of the work above is delegated, full responsibility shall be assumed by the architect, engineer or geologist whose signature is affixed thereon.

Signed: _____ date _____

Required Data:

- Project is in the (Methane Zone) or (Methane Buffer Zone).
- Depth of ground water observed during testing: 4.5 feet below the Impervious Membrane.
- Depth of Historical High Ground Water Table Elevation*: 4.5 feet below the Impervious Membrane.
- Design Methane Concentration**: 0 parts per million in volume (ppmv).
- Design Methane Pressure***: 0 inches of water column.
- Site Design Level: (Level I, Level II, Level III, Level IV, Level V) with 0 inches of water column.

De-watering:

- De-watering (is) (is not) required per Section 7104.3.7. NA
- Pump discharge rate NA cubic feet per minute per reference geology or soil report: NA dated NA.

Additional Investigation:

- Additional investigation (was) (was not) conducted.

Latest Grading on Site:

- Date of last grading on site (was) (was not) more than 30 days before Site Testing.
- See Attached explanation of the effect on soil gas survey results by grading operations.

Notes:

* Historical High Ground Water Table Elevation shall mean the highest recorded elevation of ground water table based on historical records and field investigations as determined by the engineer for the methane mitigation system.

** Design Methane Concentration shall mean the highest recorded measured methane concentration from either Shallow Soil Gas Test or any Gas Probe Set on the site.

*** Design Methane Pressure shall mean the highest total pressure measured from any Gas Probe Set on the site.

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services and activities. For efficient handling of information internally and in the internet, conversion to this new format of code related and administrative information bulletins including MGD and RGA that were previously issued will allow flexibility and timely distribution of information to the public.

FORM 1 (CONTINUED) - CERTIFICATE OF COMPLIANCE FOR METHANE TEST DATA

Part 2: Test Data - Shallow Soil Gas Test and Gas Probe Test

Site Address: 128 Hurricane Street, Marina del Rey, CA
Description of Gas Analysis Instrument(s):
Instrument Name and Model: ASTM D1946M Instrument Accuracy: ± NA ppmv.
City of Los Angeles Testing License #: 10215

Date	Time	Probe Set #	Concentration (ppmv)	Pressure (inches water column)	Probe Depth (feet)	Description / Probe Location
6/26/18	8:12	SB-3	<0.10%	0.00	3.5	Barometric Pressure: 29.96
6/26/18	8:36	SB-1	<0.10%	0.00	4.0	
6/27/18	8:14	SB-3	<0.10%	0.00	3.5	Barometric Pressure: 29.97
6/27/18	8:34	SB-1	<0.10%	0.00	4.0	
						*Probes are set 12 inches
						above the water table.

TABLE 1 - DATA COLLECTION EQUIPMENT

As a covered entity under Title II of the Americans with Disabilities Act, the City of Los Angeles does not discriminate on the basis of disability and, upon request, will provide reasonable accommodation to ensure equal access to its programs, services and activities. For efficient handling of information internally and in the internet, conversion to this new format of code related and administrative information bulletins including MGD and RGA that were previously issued will allow flexibility and timely distribution of information to the public.

AECOM Imagine it. Delivered.

Removal Action Workplan - Final

128 Hurricane Street
Venice, California 90292

Prepared for:
City of Los Angeles
Bureau of Engineering
Department of Public Works

AECOM Project number: 60553849

Prepared: July 17, 2020

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1. INTRODUCTION

The City of Los Angeles (LA) Bureau of Engineering prepared a development plan for a vacant lot owned by the City, located at 128 Hurricane Street, Venice also known as 128 Hurricane Street, Marina Del Rey, California 90292 as shown on **Figure 1**. A Phase I Environmental Site Assessment (ESA) was prepared for this site by Ninyo & Moore in 2017 and a Phase II ESA was prepared by AECOM on August 31, 2018.

AECOM's current objective is to provide an amendment to AECOM's Phase II ESA and to prepare a Removal Action Workplan (RAW) including a soil removal workplan based on the City of LA's new development plan for this Site. This RAW will be submitted to the oversight agencies, including the County of Los Angeles Fire Department-Health Hazardous Materials Division (LACFD-HHMD), The City of LA Fire Department, the California Department of Toxic Substances Control (DTSC), the Los Angeles Regional Water Quality Control Board (LARWQCB), and possibly the California Geologic Energy Management Division (CalGEM), for their review and approval to excavate and dispose of shallow residual hydrocarbon-impacted soil, provide a status update on a former on-site oil production well, and to address the methane issues in the soil vadose zone.

2. SITE BACKGROUND

Historically, the Site has been a vacant dirt lot without developed structures since 1928. An oil production well was drilled on the site in 1930 and was abandoned in 1932. Based on information provided in the Division of Oil Gas and Geothermal Resources (DOGGR), currently named CalGEM, website, the oil production well operations likely impacted the soil and might be incompletely abandoned. The surrounding area was developed with oil production facilities from 1938 to 1952 and residential properties from late 1963 to the present (Ninyo & Moore 2016). The sections below provide information regarding the site location and previous investigations and remediation performed.

2.1 Site Location and Description

The Site is approximately 4,230 square feet and is assigned to the Los Angeles County Assessor's Parcel Number 422-5010-016. The Site is bordered to the north and west by residences; to the east by the City of LA Department of Public Works Venice Pumping Plant, and to the south by a walking trail and Ballona Lagoon Grand Canal (**Figure 2)**. The site is currently a vacant dirt lot and was recently used for the storage of vehicles and other miscellaneous items during the various public construction projects (Ninyo & Moore 2016).

The site was recently purchased by the City of LA. The current development plan for this site includes an asphalt parking lot with a picnic area/green area for the surrounding community use. **Figure 3** shows the proposed site development plan.

According to the CalGEM/DOGGR well finder website, the former oil production well on site (referred to as the McDonald 2 well, API 03713842) has a total depth of 5,860 feet below ground surface (bgs). The location of the McDonald 2 well was likely discovered during the geophysical investigation for Phase II ESA and is shown on **Figure 2**. Reportedly, the McDonald 2 well was abandoned in 1932. A permit to re-abandon the well was issued in 2002 and renewed annually from 2004 to 2008. According to CalGEM/DOGGR, the well has not been re-abandoned, and the permit to re-abandon was cancelled.

The Site has not been developed with structures from at least 1928 through the time of this report. The area surrounding the Site was developed with oil production facilities from at least 1938 through 1952, and with residential properties from at least 1963 through the time of this report. The Venice Pumping Plant appeared east of the Site from at least 1963 (Ninyo & Moore 2016). According to a survey of the Site provided by the property owner, two electrical cabinets/concrete vaults were present in the southern portion of the Site, which were later removed by the City of LA. The purpose of the electrical cabinets/concrete vaults was not stated. The approximate locations of the electrical cabinets/concrete vaults are shown on **Figure 2**.

The Site is located in a methane zone and is within the Playa del Rey Oilfield. The nearby area has had oil pipelines, storage tanks and vaults. According to the CalGEM/DOGGR well finder website, numerous other historical oil production wells are also located within the Site vicinity.

2.2 Geological and Hydrogeological Summary

The Site is located at the northwest edge of the Peninsular Ranges Geomorphic Province of California. Landmarks in the vicinity of the Site include the Los Angeles Basin to the east, the Santa Monica Bay to the southwest, and the Santa Monica Mountains to the northwest. According to geologic information provided in the environmental database report, the Site is underlain by Quaternary (recent) alluvium bedrock. The primary underlying material is mostly artificial fill from filling and grading the La Ballona wetlands estuary in the Marina del Rey area (Ninyo & Moore 2016).

The upper 2 feet of soil beneath the Site appears to be fill material consisting of light brown silt and sand. Underlying the fill material, soil is predominantly brown to gray fine sand and silty sand from the surface to maximum depth explored, which was 20 feet bgs. A sandy clay layer was encountered in some borings between 3.5 and 4 feet bgs. Heaving sands were encountered at 5 and 6 feet bgs in the southern portion of the Site. Concrete debris was also encountered in some borings.

The Ballona Lagoon lies adjacent to the Site's southern boundary and the Pacific Ocean is approximately 0.22 miles southwest of the Site. The Site is within the Santa Monica Sub-basin of the Coastal Plain of Los Angeles Groundwater Basin. Groundwater was encountered across the Site from 4.5 to 6 feet bgs during the Phase II ESA. Groundwater was shallowest in the southeast (4 feet bgs) and deepest in the northwest (6 feet bgs). According to a nearby site, the groundwater generally flows in a southwesterly direction toward the Pacific Ocean (Ninyo & Moore 2016).

2.3 Summary of Previous Investigations

Reportedly, a geotechnical investigation was conducted by the City of LA Bureau of Engineering (LA BOE), Geotechnical Services Division, in 2006; the results of the investigation were documented in a report dated July 24, 2006. During the geotechnical investigation, two hand auger borings (B-1 and B-2) were advanced within the vicinity of the on-site electrical cabinets/concrete vaults to evaluate the condition of nearby soils. The borings encountered fill consisting of brown silty sand with some fragments of broken glass up to the maximum depth explored of 2 feet bgs. Soil samples were analyzed for petroleum hydrocarbons, polychlorinated biphenyls, volatile organic compounds (VOCs), and Title 22 Metals. The sample from B-1 was found to contain concentrations of petroleum hydrocarbons at 6,500 parts per million (ppm), and the sample from B-2 was found to contain concentrations of petroleum hydrocarbons at 100 ppm. No impacted soil was removed during the geotechnical investigation (Ninyo & Moore 2016).

In 2016, Ninyo & Moore of Irvine, California, conducted a Phase I ESA on behalf of the LA BOE. Ninyo & Moore reported the following Recognized Environmental Conditions (RECs) in connection with the Site:

- Abandoned former oil production well (McDonald 2, API 03713842) on the Site.
- Site is located within a methane zone.
- The results of geotechnical investigation in 2006 indicated high concentrations of petroleum hydrocarbons in on-site soil.
- The results of the vapor encroachment screening indicated that a possible vapor encroachment concern (VEC) currently exists beneath the Site.

Ninyo & Moore recommended a limited subsurface investigation to evaluate the RECs and VEC.

In August 2018, AECOM performed a Phase II ESA, which included a limited subsurface soil and groundwater sampling and analysis (AECOM 2018). The Phase II ESA report concluded:

- AECOM observed a buried flat concrete structure and a nearby magnetic peak during the geophysical survey. The magnetic peak is believed to be the location of the former oil production well. The concrete feature may require removal and additional investigation and sampling.
- Soil samples exhibited lead and total petroleum hydrocarbons (TPH; primarily weathered diesel and oil fractions). Lead concentrations ranged from 3.4 milligrams per kilogram (mg/kg) (SB-4-5) to 160 mg/kg (SO-2-5). TPH as diesel (TPH-d) concentrations ranged from 6.4 mg/kg (SO-7-5) to 4,600 mg/kg (SO-9-2.5).

TPH as oil (TPH-o) concentrations ranged from 5.0 mg/kg (SO-8-5) to 8,200 mg/kg (SO-9-2.5). The results indicated that past on-site activities related to oil production may have impacted the Site.

- Multiple shallow soil samples (2 and 4 feet bgs) exceeded commercial and/or residential screening levels for TPH-d and TPH as gasoline (TPH-g).
- Shallow soil samples (2 and 5 feet bgs) in the western portion of the Site exhibited elevated levels of lead that exceeded the commercial screening level, but not the residential screening level.
- Groundwater was encountered between 4 and 6 feet bgs. Groundwater quality is poor and not suited for beneficial uses. All groundwater concentrations were below non-drinking water screening levels.
- Methane was not detected from shallow gas probes, which classifies the Site as a Level I Site Design Level. No venting is required for hardscaping, but a passive ventilation system would be required for all future building construction.

3. CURRENT CITY'S SITE DEVELOPMENT PLAN

Proposed development plans at the Site will include development of an asphalt parking lot for employees of the Venice Pumping Plant (VPP). A portion of the Site will incorporate Open Space, as required by the Venice Specific Plan, which will include landscaped areas open to public access.

The City Development Plan (**Figure 3**), shows the proposed development for the Site. Proposed improvements include a total of eight parking spaces; one of which will be American with Disabilities Act accessible and one will be reserved for temporary bike parking. Entrance to the Site will be located along Canal Court. A 3-feet parking wall will be installed along the north and east property lines and a 6-feet decorative wall be installed along the west property line.

The landscaped and vegetated areas for the Site will be located on the south side and along the western property line.

Based on proposed site improvements, the developed conditions for the Site:

- Impervious area, including eight parking spaces and sidewalk, is approximately 3,031 square feet or 0.07 acres.
- Pervious area, including landscaped and open space area, is approximately 1,199 square feet or 0.03 acres.

Additionally, proposed improvements will include installation of a public art on the Site to comply with the City of LA Public Works Improvement Arts Program. The three-dimensional public art will be in the landscaped and open space on the south side of the Site. This area will be open to public access.

The Site will serve as the Laydown Area 1 for Stage 1 of the redevelopment. Access to the Site during construction will be from Hurricane Street.

The redevelopment of the area is anticipated to begin in April 2021 and will last approximately 26 months.

4. SCOPE

The scope of this project consists of the following:

1. Amend the Phase II ESA to reflect the City's new development plan;
2. Prepare a RAW including soil removal workplan for lead and TPH-d-impacted soil where the concentrations exceed residential screening level;
3. Provide a status update for the oil production well based on current CalGEM requirements; and
4. Address methane mitigation measures according to the City's new development plan

5. AMENDMENT TO PHASE II ESA

The 2018 Phase II ESA was completed for a real estate transaction and the development plan for this Site was not determined at that time.

The City of LA recently proposed the current development plan after the Phase II ESA had been submitted. **Table 1** presents soil analytical results, and **Table 2** presents groundwater analytical results. The Phase II ESA was amended according to the City of LA's current development plan and was submitted to the City on April 30, 2020. The following recommendations have been amended:

- Excavation of soil exceeding residential instead of commercial screening levels will be used for determining extent of the soil removal due to area developed as parking lot and landscaped area. Three areas of excavation were identified and are estimated to produce approximately 160 cubic yards (215 tons) of impacted soil. Contingency soil removal due to confirmation sampling is proposed to be 100 cubic yards (135 tons). Total soil to be removed is 260 cubic yards (350 tons) as shown in **Table 3**.
- Incomplete records of proper abandonment of the former production well necessitates uncovering the well casing and conducting a leak test under CalGEM supervision. Depending on leak testing results, CalGEM could require a complete re-abandonment of the production well or allow development over the well casing.
- A passive ventilation system will not be required due to the Site being developed as a hardscape parking lot less than 5,000 square feet and landscaped open space.

6. REMOVAL ACTION WORKPLAN (RAW)

The objective of the RAW is to consider options for remediation and select a course of action based on available data including type and extent of contamination, the threat presented by the contamination, subsurface conditions (geology and hydrogeology), and the extent of remediation required. In many cases, remedial actions are established based on findings of a human health risk assessment (HHRA) or ecological risk (ecorisk) assessment and the risk-based cleanup levels or cleanup criteria developed through fate and transport studies.

The RAW is considering the remediation of this Site to the residential screening level. AECOM assumes that considering the size, nature, and level of contamination and the City's current development plan for this Site, an HHRA or ecorisk assessment is not required and excavation and soil removal is a best-selected remedy for remediation of TPH and Title 22 metals contamination. Therefore, a soil excavation and removal workplan is included in this RAW.

The following sections describe the procedures of RAW implementation.

6.1 Agencies Notification Records

There are no records on GeoTracker or Envirostar for the Site and therefore there is no specific oversight agencies assigned. AECOM communicated with relevant regulatory agencies regarding voluntary oversight and additional requirements for the soil removal workplan. The City of LA and LACFD declined voluntary oversight and did not state additional requirements.

The DTSC and LARWQCB require an application for voluntary oversight to be submitted with the soil removal workplan. The application is included in **Appendix A**. Both agencies will review the application to determine which agency will be the lead regulator.

The South Coast Air Quality Management District (SCAQMD) requires implementing Rules 1166 and 1466 for air monitoring during soil removal, which includes site-specific plans, notification prior to field work, and dust control measures.

The City of LA Department of Building Safety (LADBS) will not require methane mitigation or permitting for the soil removal work plan per our phone conversation. Logs of AECOM communications with different agencies including emails and phone calls are also provided in **Appendix B**.

6.2 Excavation and Soil Removal Workplan

Excavation was chosen as the best cleanup alternative due to the shallow depth and small volume of the lead and TPH-d-impacted residual soil. Presented below is the rationale and proposed scope of work for implementing the excavation activities.

6.2.1 Pre-field Activities

Prior to conducting excavation of impacted soils, the following tasks will be completed:

- Schedule site access for required field activities.
- All proposed excavation areas will be clearly marked with white paint as required by Underground Service Alert (USA). USA will be contacted at least 48 hours in advance to identify the location of on-site utilities. AECOM will mark the located utilities from the previous geophysical survey from the Phase II ESA.
- Update the Site-specific Health and Safety Plan (HASP) prior to field activities.
- A temporary grading permit will be obtained by a qualified subcontractor from the Los Angeles County Department of Public Works Building Safety Department.
- A qualified subcontractor will notify the State of California, Division of Occupational Safety and Health with respect to the excavation/trenching activities as required under the subcontractor's Annual T-1 Trench Permit.
- A waste management plan will be made with the qualified subcontractor to store, transport, and dispose of the hazardous and non-hazardous waste off site.
- Rule 1166 and 1466 require site-specific plans to be submitted to SCAQMD by the qualified subcontractor. Prior to field work implementation, SCAQMD will be notified.

6.2.2 Health and Safety Plan

A Site-specific and Project-specific HASP will be updated to cover field staff health and safety associated with the RAW implementation activities. All field personnel are required to implement the procedures presented in the HASP while conducting on-site field work.

6.2.3 Site Clearing and Debris Removal

Buried concrete and wood debris in excavation areas -1 (EA-1) and EA-2, expected based on Phase II ESA soil borings, should be broken up and removed using a drill attachment on an excavator. Construction debris will be stockpiled separately. Any vegetation will be cleared as necessary.

6.2.4 Excavation Procedure and Activities

Soil will be excavated using a blade attachment on an excavator to prevent mixing of soils during excavation. Soil will be stockpiled in an area outside of the excavation areas. Each excavation area will have its own soil stockpile. If odor or staining is encountered, the soil will be segregated. During excavation, a Photoionization Detector (PID) will be used to monitor the presence and level of organic vapors from the excavation area.

Each excavation area will be excavated to the proposed extent and depth as summarized in the following sections

6.2.4.1 Soil Excavation Activities including Estimate Quantities

There are three proposed EAs. Provided below is a rationale for each EA and a proposed extent of excavation. Recent soil analytical data is presented in **Table 1**. The locations of the proposed excavation areas and historical sample locations are shown on **Figures 4 and 5.**

Any buried concrete pads, debris, and conduit encountered during the shallow soil excavation in the excavation areas, will be delineated within the property boundary, removed, and characterized prior to disposal.

6.2.4.2 Excavation Area-1 (EA-1)

EA-1 is centered around the likely location of the abandoned oil production well as shown in **Figure 5**. The excavation area was chosen due to boring SO-2 concentrations exceeding the California residential screening level for lead of 80 mg/kg; and borings SO-2 and SO-13 concentrations exceeding California residential screening level of 260 and 1,600 mg/kg for TPH-d and TPH-o, respectively. The lateral extent was chosen as approximately 5 feet in all directions based on the nearest sampling location. The excavation was extended to the northwestern and southwestern borders of the Site to ensure removal of impacted soil. The depth of the proposed excavation is estimated to be 3.5 feet bgs, since concentrations were below screening levels at 3.5 feet bgs in SO-13. One boring within EA-1 (SO-2) will require greater depth for excavation. Approximately 60 cubic yards of soil (82 tons) are estimated to be removed and stockpiled from EA-1 (not including the Excavation Sub-Area--1-1 [EA-1-1] discussed below).

Excavation Sub-Area-1-1 (EA-1-1)

Boring SO-2 lead concentration of 160 mg/kg at 5 feet bgs exceeds California residential screening level of 80 mg/kg and requires deeper excavation to 1 foot below the impacted soil sample for a total of 6 feet bgs. Excavation extends to the western site boundary and approximately 5 feet to the northwest, northeast, and southeast. Approximately 22 cubic yards of soil (30 tons) are estimated to be removed and stockpiled from EA-1-1.

6.2.4.3 Excavation Area-2 (EA-2)

EA-2 is centered around AECOM's Phase II ESA (June 2018) soil boring SB-4 and extends to boring SO-4 to connect with EA-1 (**Figure 5**). The excavation area was chosen due to boring SB-4 concentrations exceeding California residential screening levels of 260 and 1,600 mg/kg for TPH-d and TPH-o, respectively (with a concentration of 670 and 2,000 mg/kg, respectively at 3.5 feet bgs). The lateral extent was chosen to connect EA-1 and EA-2, because boring SO-4, between SO-1 and SB-4, has detectable concentrations of TPH-d. The excavation is bounded by borings SO-5 and SO-6 where the concentrations were below screening levels. The depth of the proposed excavation is estimated to be 3.5 feet bgs, as most borings included in the excavation area exhibited non-detections or concentrations below screening levels at 3.5 feet bgs. One boring (SB-4) within EA-2 will require greater depth and is mentioned in the following subsection for Excavation Sub-Area-2-1 (EA-2-1). Approximately 15 cubic yards of soil (20 tons) are estimated to be removed and stockpiled from EA-2 (not including the EA-2-1 discussed below).

Excavation Sub-Area-2-1 (EA-2-1)

Boring SB-4's TPH-d concentration of 670 mg/kg at 3.5 feet bgs exceeds the California residential screening level of 260 mg/kg and requires deeper excavation to 1 foot below the impacted soil sample for a depth of 4.5 feet bgs. The excavation extends 5 feet on either side of the boring. Approximately 19 cubic yards of soil (25 tons) are estimated to be removed and stockpiled from EA-2-1.

6.2.4.4 Excavation Area-3 (EA-3)

The excavation area was chosen due to boring SO-9 concentration exceeding the California residential lead screening level of 80 mg/kg and borings SB-6, SO-8, SO-9, and SO-11 concentrations exceeding California residential screening level of 260 and 1,600 mg/kg for TPH-d and TPH-o, respectively (**Figure 5**). The lateral extent was chosen as approximately 5 to 10 feet based on the nearest boring. It bounds the southwestern Site boundary and goes just beyond SO-11 to the northwest. The depth of the proposed excavation is estimated to be 3.5 feet bgs as most borings included in the excavation exhibited non-detections or concentrations below screening levels at 3.5 feet bgs. Approximately 43 cubic yards of soil (58 tons) are estimated to be removed and stockpiled from EA-3.

6.2.5 Confirmation Sampling

Depending on field observations an estimated forty-six primary soil confirmation samples will be collected, prior to backfilling, to show that no lead or TPH-d impacted soils remain within the newly excavated areas. Five duplicates will be sampled for a total of 51 soil confirmation samples.

6.2.5.1 Samples Locations and Depth by Areas

Provided below is a proposed confirmation sampling plan for each excavation area and shown on **Figure 6**. DTSC recommends sampling on every sidewall and every 50 square feet at the bottom of the excavation. Also, confirmation samples will be collected around any concrete pads, debris, or conduit encountered and removed during excavation.

EA-1

In EA-1, soil samples will be collected from all four sidewalls at a depth of approximately 0.5 feet bgs and 13 excavation floor samples per 7-foot by 7-foot grid at a depth of 3.5 feet. The total number of confirmation samples for EA-1 is 18 samples.

EA-1-1

In EA-1-1, soil samples will be collected from all four sidewalls at a depth of approximately 0.5 feet bgs and two excavation floor samples per 7-foot by 7-foot grid at a depth of 6 feet. The total number of confirmation samples for EA-1-1 is seven samples.

EA-2

In EA-2, soil samples will be collected from all four sidewalls at a depth of approximately 0.5 feet bgs and three excavation floor samples per 7-foot by 7-foot grid at a depth of 3.5 feet. The total number of confirmation samples for EA-2 is eight samples.

EA-2-1

In EA-2-1, soil samples will be collected from all four sidewalls at a depth of approximately 0.5 feet bgs and two excavation floor samples per 7-foot by 7-foot grid at a depth of 5 feet. The total number of confirmation samples for EA-2-1 is seven samples.

EA-3

In excavation area EA-3, soil samples will be collected from all four sidewalls at a depth of approximately 0.5 feet bgs and six excavation floor samples per -foot 7 by 7-foot grid at a depth of 3.5 feet. The total number of confirmation samples for EA-3 is 11 samples.

6.2.5.2 Soil Sample Sampling and Analysis

All soil samples will be collected in eight-ounce jars from the excavation sidewalls or bottom. Samples will be labeled, capped, and stored on ice and submitted to a California-certified laboratory. All samples will be analyzed for TPH-d by United States Environmental Protection Agency (EPA) Method 8015 (M) and total lead by EPA Method 6010B. The laboratory will hold all samples and analyze for Soluble Threshold Limit Concentration (STLC) if the total lead results exceed 10 times the STLC and for Toxicity Characteristic Leaching Procedure (TCLP) if the total lead results exceeds 20 times the STLC.

The excavated areas will be widened and/or deepened, as described below in Section 6.2.6, if the soil confirmation sampling data results show elevated TPH-d and/or lead concentrations exceeding residential screening levels.

6.2.6 Contingency for Proposed Remedial Excavation

Following excavation and soil removal, confirmation sampling should occur on the side walls and base of excavations according to this RAW. A contingency of 100 cubic yards due to confirmation sampling requiring further excavation should be included. This contingency would be approximately 100 cubic yards (135 tons) of additional soil for the proposed remedial excavation areas. No off-site excavation due to sidewall confirmation sampling exceeding

residential screening levels will be conducted. No additional excavation due to floor confirmation sampling exceeding residential screening levels below the water table will be conducted.

The volume of impacted soil to be removed is estimated to be 160 cubic yards or 215 tons (EA-1: 60 cubic yards/82 tons; EA-1-1: 22 cubic yards/30 tons; EA-2: 15 cubic yards/20 tons; EA-2-1: 19 cubic yards/25 tons; EA-3: 43 cubic yards/58 tons).

The total of impacted soil plus contingency to be removed is 260 cubic yard or 350 tons. Total volume and weight of excavated soil is summarized on **Table 3**.

6.2.7 Backfilling

Grading will consist of approved imported fill graded to previous levels according to LA County's temporary guidelines and DTSC's clean fill advisory (DTSC, 2001). Imported soil fill will meet the requirements specified by the client and/or overseeing agencies. Design-based and engineered grading, compaction, or compaction reports are not included.

6.2.8 Soil Profiling and Disposal

All excavated soils will be stockpiled (each EA will have its own soil stockpile) and will be profiled by analyzing one composite sample per approximately 20 cubic yards of soil prior to disposal (approximately 13 composite samples). The composite waste samples will be analyzed for VOCs by EPA method 8260B, TPH-g, -d, and -o by modified EPA method 8015 (M), and Title 22 Metals by EPA method 6010. If a metal concentration exceeds 10 times the Total Threshold Limit Concentration (TTLC), STLC will be run on the sample. If metal concentrations exceed 20 times the TTLC, and/or STLC exceeds the TTLC, TCLP will be run on the sample. Soil will be segregated if it has an odor or stain.

Upon receiving soil profile analytical results for each stockpile, soil and construction debris will be loaded into trucks and transported and disposed of properly by the qualified subcontractor. Soil with acceptable concentrations will be classified and disposed as non-hazardous waste. Non-hazardous waste shall be transported by a licensed hauler to a permitted waste disposal facility. The hazardous waste shall be transported by a licensed hauler to a permitted hazardous waste disposal facility. Prior to leaving the Site, trucks will be inspected to ensure the load is properly covered and clean. A manifest or bill of lading will be prepared for each truck leaving the Site. Due to the small size of all the excavations and the vacancy of the lot, traffic control is not needed for this soil removal workplan.

6.2.9 Dust Control and Air Monitoring

Rules 1166 and 1466 of the SCAQMD will be followed to control VOC emissions and potentially toxic dust generated during excavation, loading, and transportation of impacted soil. A site-specific Rule 1166 plan will be submitted to SCAQMD for the removal of VOC-containing soil. Less than 2,000 cubic yards of VOC impacted soil will be excavated during RAW implementation. Therefore, a various locations Rule 1166 plan will be used for the excavation, grading, and handling of VOC containing soil. A 1166 notification form must be submitted at least 24 hours prior to excavation activities. The operator must submit a Rule 1466 Notification Form, a map outlining the excavation boundaries, soil concentrations, and location of dust monitors. Generation of dust during removal activities will be minimized with the use of water as a dust suppressant. Water will be sprayed prior to daily work activities, during excavation/loading activities, and at truck staging locations. Watering equipment will be continuously available to provide proper dust control. Visqueen sheeting beneath and above stockpiles will be used to control dust from temporary soil stockpile storage areas. A DataRam real-time dust monitor will be used to monitor worker dust exposure. As precautionary measure, if dust levels exceed 25.0 milligrams per cubic meter, work will stop as additional control measures are implemented.

A qualified subcontractor with a multiple-site SCAQMD permit will be used for impacted soil excavation, handling, transportation, and disposal.

Due to the size of excavation (less than 500 cubic yards), level of contamination, dust control with the use of water, and fence with plastic sheets around the property line, the impacted dust generated by field activities will be

minimized. This issue will be discussed with SCAQMD at the time of RAW implementation and active air monitoring may not be necessary.

6.2.10 Asbestos Survey/Abatement Permits

Due to the age of the site, and presence of underground debris, and a linear feature identified during the geophysical survey, there is a chance that asbestos containing materials may be encountered during excavation activities. Encountering asbestos containing materials would require an asbestos survey. Based on the results of the survey, additional SCAQMD permits may be required for abatement of those asbestos containing materials.

6.2.11 Schedule

Upon approval of the soil removal workplan by the regulatory agencies and a notice to proceed from the client, the following schedule maybe implemented:

Pre-field activities including permits ..... 2 weeks

Excavation and Confirmation Sampling Activities ..... 2 weeks

Grading and Disposal ..... 2 weeks

Report Write-up ..... 4 weeks

Time of Completion ..... 12 weeks

6.2.12 Cost Estimate

The budgetary estimated cost for implementation of the soil removal workplan is **$160,000**. A 20% contingency should be added to this budgetary cost that brings the total cost of soil removal to **$192,000**. This proposed cost estimate has been prepared based on readily available site information, typical agency requirements and guidance documents, industry knowledge, and related project experience. This cost estimate is for the pre-field activities, soil excavation, confirmation sampling and laboratory analysis, backfill, waste disposal, and report writing. It assumes the scope will be conducted in accordance with the soil management plan.

A more updated cost estimate will be provided before implementation and after agencies approval of this soil removal workplan.

The oil production well re-abandonment and leak test cost is detailed in section 6.3.4.

6.2.13 Assumptions

The following assumptions are made in preparing the schedule for implementation of this soil removal work plan

- Schedule is dependent upon availability of the subcontractor and oversight agencies approval.
- Standard laboratory turnaround time for confirmation soil sampling and stockpile sampling is assumed.
- Half of confirmation samples (25 samples) will be analyzed for STLC and TCLP.
- Sample duplicates will amount to 10% of the 46 samples (five duplicates) to 51 samples in total for confirmation sampling.
- No excavation off site will occur. No geotechnical work or testing for the construction of the City Development Plan will occur.
- Subcontractor pricing is based on prevailing wage.
- Excavation for remediation purposes does not reach water table. No dewatering of excavations area will occur.
- Engineered compaction testing and reporting are not included.

- Encroachment Permitting/Traffic Planning/ or Storm Water Pollution Prevention Plan are not included. These items will be addressed by the City as part of general site re-development plan.
- SCAQMD Rule 1466 cost is assumed to be determined during RAW implementation with SCAQMD input and is not included.
- Resurfacing of the area is not included.
- Cost is assumed on 2020 rates.
- Subcontractor quoted costs are valid for 60 days.
- Site survey and landscaping are not included.
- Voluntary regulatory agency oversight application will be signed by the City of LA BOE representative. As per City's request, AECOM can submit the application with relevant documents to the oversight agency on the City's behalf.
- All costs related to voluntary regulatory oversight including applications fee are the City's responsibility.
- Asbestos containing materials survey and abatement costs are not included, but can be added as needed, through appropriate change order procedures.

6.3 Oil Well Status Update

Phase I ESA performed in 2016 by Ninyo & Moore for this Site indicated that there is an on-site abandoned former oil production well. According to the CalGEM/DOGGR well finder website, a historical oil production well is present on the site (McDonald 2, API 03713842). Based on a review of documents provided by the user, the "McDonald 2" well was abandoned in 1932. A permit to re-abandon the well was issued in 2002 and renewed annually from 2004 to 2008. According to DOGGR, the well has not been re-abandoned. This represents a REC (Ninyo & Moore 2016).

The Site is in a methane zone and is within the Playa del Rey Oilfield. The nearby area has had oil pipelines, storage tanks and vaults. According to the CalGEM/DOGGR well finder website, numerous other historical oil production wells are located in the Site vicinity.

6.3.1 CalGEM Files Review and Records

According to CalGEM, which replaced DOGGR well finder current website, this historical oil production well has a total depth of 5,860 feet bgs. The well went dry and was abandoned in May 1932. The bottom of the hole was plugged at 2,018 feet bgs. Various cement plugs were placed in the hole from 1,996 to 1,929 feet and 729 to 675 feet bgs. All other spaces were filled with heavy mud. The hole had been cemented at deeper depths prior to this final abandonment.

AECOM contacted CalGEM by emails and phone calls to obtain any recent activities, information, requirements, and a status update for this oil production well. AECOM's email and CalGEM's response is included in **Appendix C**. Location of the oil well is shown in **Figures 3** and **5**.

6.3.2 CalGEM Requirements

CalGEM in their email indicated that the McDonald 2 well, API 03713842, should be re-abandoned according to CalGEM's current requirements. CalGEM also provided their instruction to fill out the application and sent an application for re-abandonment.

6.3.3 Oil Well Re-Abandonment Scope

AECOM will use a qualified subcontractor with expertise in Southern California oil production well drilling and abandonment to re-abandon this oil well according to the current CalGEM requirements.

AECOM proposes the following scope and a rough budgetary cost estimate to re-abandon the oil well at the Site in the Playa Del Rey oil field, as per the current requirements of the CalGEM. The scope consists the following:

1. Pre-field activities and preparation of site-specific HASP.
2. Obtain permit from CalGEM.
3. Excavate around the well and make it safe for the welder and backhoe to install the wellhead to the casing and install the cellar ring around the well.
4. Install wellhead and cellar ring.
5. Mobilize the rig and all drilling equipment.
6. Install blowout preventer equipment approved by CalGEM.
7. Drill out old cement and cleanout the well to a total re-abandon depth.
8. Cement and perforating well per CalGEM Permit to surface.
9. Demobilize rig and equipment.
10. Remove cellar ring, cut casing to a final depth.
11. Gas test install I.D. plate and backfill with compaction wheel.
12. Schedule all required CalGEM inspections.
13. Dispose of waste generated from wells re-abandonment.
14. Complete reporting.

6.3.4 Oil Well Re-Abandonment Cost Estimate and Schedule

The approximate cost to re-abandon the oil production well McDonald 2, API 037-13842, with a total depth 5,860 feet bgs is between **$520,000** to **$640,000** depending on the condition, complexity, and depth of abandonment. This budgetary cost is based on prevailing wage for subcontractors and includes oversight by AECOM. It is assumed that there will be no problem encountered during drilling to a total depth. It should be noted that the total depth of re-abandonment depends on CalGEM's inspection during field activities.

Since there are many unknown factors in an old deep oil production well re-abandonment process, a 25% contingency is usually added to the estimated budgetary costs. This will bring the cost between **$650,000** and **$800,000**.

Bonds, if required, for oil well re-abandonment will be the responsibility of the LA BOE.

It takes approximately four to six months to perform re-abandonment of an oil production well depending on CalGEM inspections and approval.

This cost is based on 2020 rates and subcontractor's cost that expires in 90 days. A more detailed cost estimate and schedule will be provided when the City's new development plan will be implemented.

6.4 Methane Mitigation Measures

Per a phone conversation with LADBS, no methane mitigation is necessary for the development of the parking lot and landscaping due to the size of the lot (less than 5,000 square feet) and the non-detects of methane in soil vapor probes installed during the Phase II ESA. Log of the AECOM phone conversation with LADBS is included in **Appendix B.**

7. REFERENCES

AECOM, 2020. Amended Phase II Environmental Site Assessment, 128 Hurricane Street, Los Angeles, California. April 30.

AECOM, 2018. Phase II Environmental Site Assessment, 128 Hurricane Street, Venice, California. October 2.

California Department of Conservation, Division of Oil, Gas, and Geothermal Resources, 2018. Well Finder website, http://www.conservation.ca.gov/dog/Pages/Wellfinder.aspx.

California State Water Resources Control Board (SWRCB), 1988. Resolution No. 88-63, "Sources of Drinking Water Policy." Amended February 1, 2006.

Department of Toxic Substances (DTSC), 2001. Information Advisory Clean Imported Fill Material. October.

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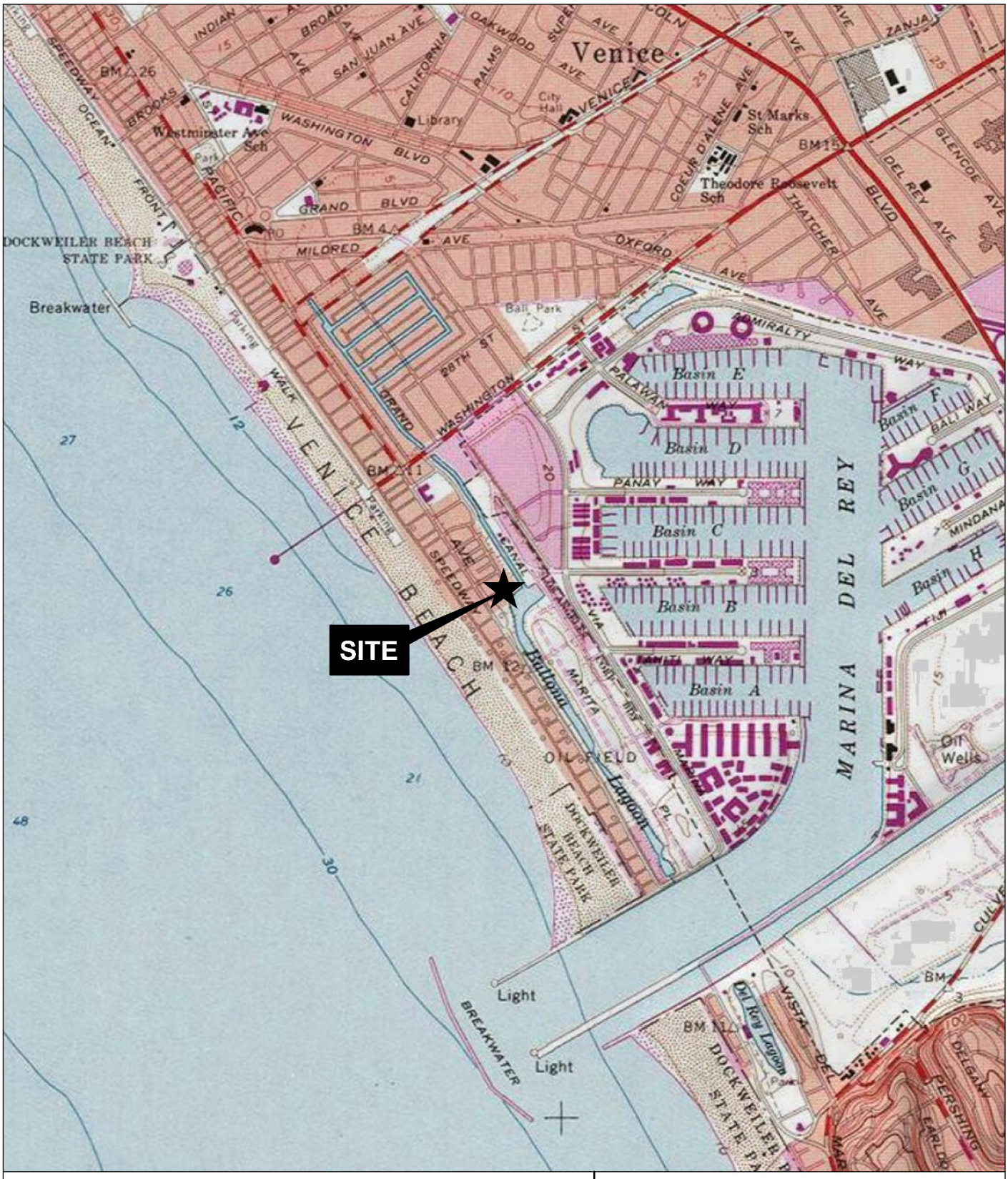
McAlister GeoScience, 2016. 2015 Second Semi-Annual Groundwater Monitoring Program Report, Del Rey Landing, 13800 Bora Bora Way, Marina Del Rey, California, dated February 23.

Ninyo & Moore, 2016. Phase I Environmental Site Assessment, 128 Hurricane Street, Venice, California 90292. June 21.

San Francisco Bay Regional Water Quality Control Board (SFBRWQCB), 2019. Environmental Screening Levels Workbook. January.

United States Environmental Protection Agency (EPA), 2020. Regional Screening Levels – Generic Tables. November.

Figures



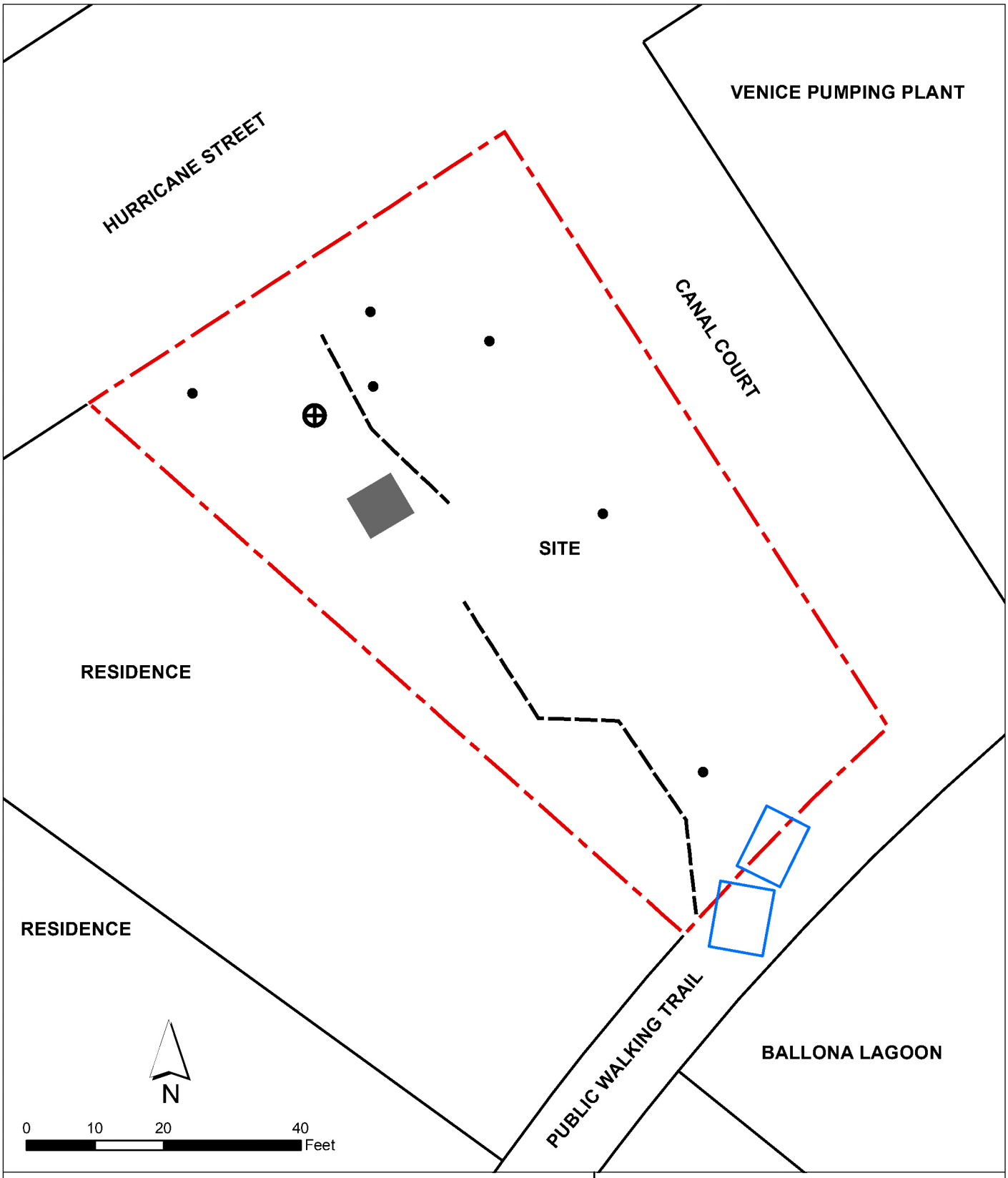
Reference: Topo 2013 National Geographic USGS Map

AECOM

SITE LOCATION MAP

Site:	Figure:
128 Hurricane St. Venice, CA	1
Project: 60553849	Date: 5/6/2020

Path: R:\Projects\ENV\City of LA BOE\60553849_TO5SewerEn\900-CAD-GIS\920-GIS or Graphics\Figure 1 - Site Vicinity.mxd



Legend

- Former Oil Well/Magnetic Peak (Approximate)
- Buried Metal (Approximate)
- Former Electrical Cabinets/Concrete Vaults (Approximate)
- Subsurface Conduits (Approximate)
- Site Boundary
- Concrete Pad
- County Parcels

AECOM

SITE FEATURES

Site: 128 Hurricane St. Venice, CA	Figure: 2
Project: 60553849	Date: 5/6/2020

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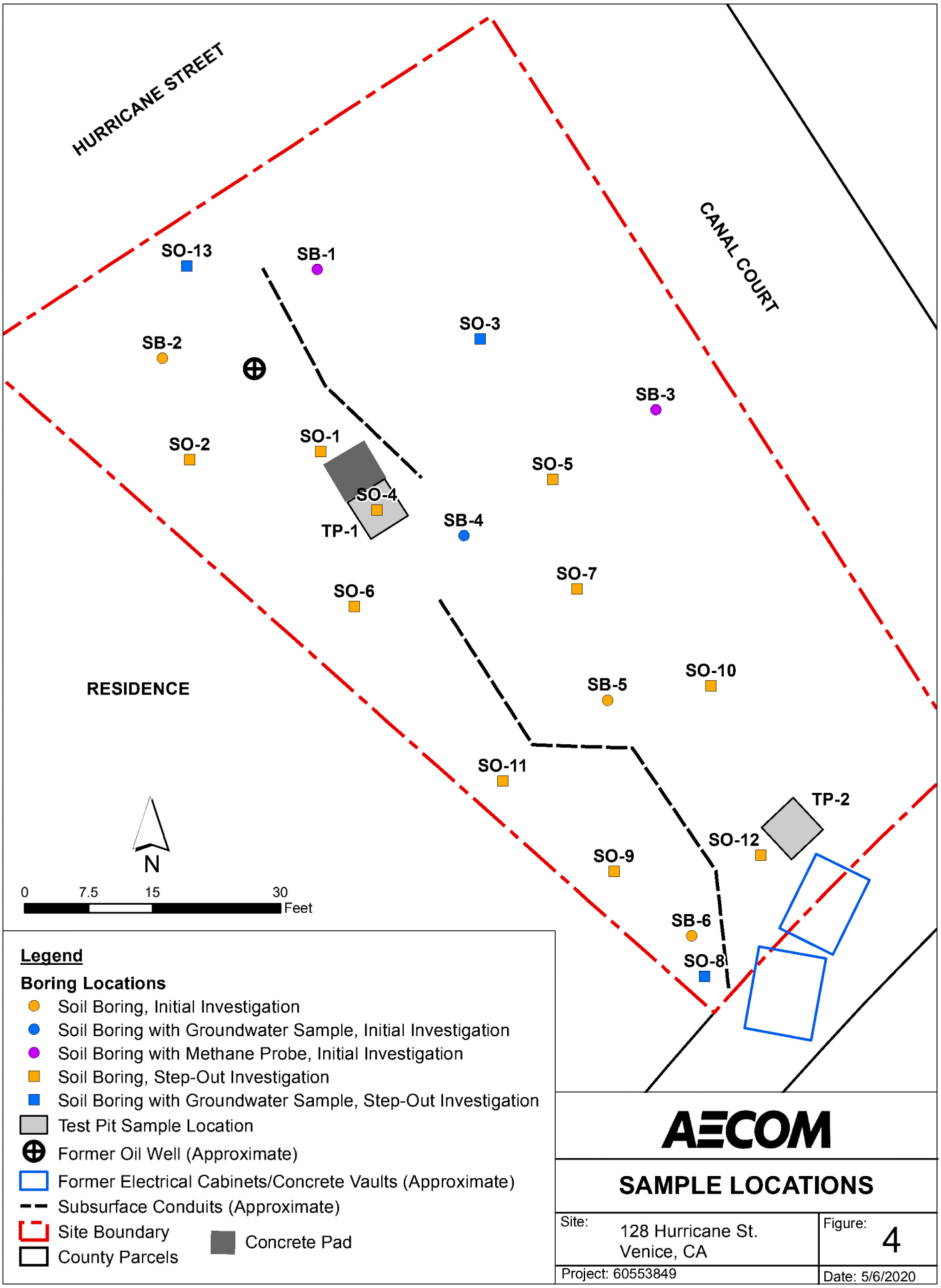
AECOM

CITY DEVELOPMENT PLAN

Site: 128 Hurricane St. Venice, CA	Figure: 3
Project: 60553849	Date: 5/6/2020

CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING



AECOM

SAMPLE LOCATIONS

Site: 128 Hurricane St. Venice, CA	Figure: 4
Project: 60553849	Date: 5/6/2020

Path: \\172.28.218.25\LosAngeles\Projects\ENV\City of LA BOE\60553849_TO5SewerEn\900-CAD-GIS\920-GIS or Graphics\Figure 3 - Sample Locations.mxd

CANAL COURT

HURRICANE STREET

PUBLIC WALKING TRAIL

LEGEND

- SITE BOUNDARY
- PROPOSED REMEDIAL AREAS
- ISOCONCENTRATION CONTOUR
- SOIL BORING, INITIAL INVESTIGATION
- SOIL BORING WITH GROUNDWATER SAMPLE, INITIAL INVESTIGATION
- SOIL BORING WITH METHANE PROBE, INITIAL INVESTIGATION
- SOIL BORING, STEP-OUT INVESTIGATION
- SOIL BORING WITH GROUNDWATER SAMPLE, STEP-OUT INVESTIGATION
- APPROXIMATE LOCATION OF FORMER OIL WELL
- TEST PIT SAMPLE LOCATION
- CONCRETE PAD LOCATION

Excavation Area EA-1

Excavation Area EA-1-1

Excavation Area EA-2

Excavation Area EA-2-1

Excavation Area EA-3

SB-1 SB-2 SB-3 SB-4 SB-5 SB-6

SO-1 SO-2 SO-3 SO-4 SO-5 SO-6 SO-7 SO-8 SO-9 SO-10 SO-11 SO-12 SO-13

TP-1

TP-2 ND

SITE REMEDIATION PLAN

4' 0 4' 8'

1" = 4'-0"

AECOM

AMENDED PROPOSED EXCAVATION AREA

Site: 128 Hurricane St. Venice, CA

Figure: 5

Project: 60553849

Date: 5/6/2020

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DEPARTMENT OF PUBLIC WORKS

CITY OF LOS ANGELES

CANAL COURT

HURRICANE STREET

PUBLIC WALKING TRAIL

Excavation Area EA-1

Excavation Area EA-2-1

Excavation Area EA-2

Excavation Area EA-3

Excavation Area EA-1-1

SB-1 SB-2 SB-3 SB-4 SB-5 SB-6

SO-1 SO-2 SO-3 SO-4 SO-5 SO-6 SO-7 SO-8 SO-9 SO-10 SO-11 SO-12 SO-13

TP-1

TP-2 ND

LEGEND

- SITE BOUNDARY
- PROPOSED REMEDIAL AREAS
- ISOCONCENTRATION CONTOUR
- SOIL BORING, INITIAL INVESTIGATION
- SOIL BORING WITH GROUNDWATER SAMPLE, INITIAL INVESTIGATION
- SOIL BORING WITH METHANE PROBE, INITIAL INVESTIGATION
- SOIL BORING, STEP-OUT INVESTIGATION
- SOIL BORING WITH GROUNDWATER SAMPLE, STEP-OUT INVESTIGATION
- PROPOSED CONFIRMATION SAMPLING LOCATIONS
- APPROXIMATE LOCATION OF FORMER OIL WELL
- TEST PIT SAMPLE LOCATION
- CONCRETE PAD LOCATION

SITE REMEDIATION PLAN

4' 0 4' 8'
1" = 4'-0"

AECOM

PROPOSED EXCAVATION AREA AND CONFIRMATION SAMPLING LOCATIONS

Site: 128 Hurricane St. Venice, CA	Figure: 6
Project: 60553849	Date: 5/6/2020

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CITY OF LOS ANGELES

Tables

TABLE 1
SOIL ANALYTICAL RESULTS
128 Hurricane Street
Los Angeles, California

Detected Analytes	California Screening Level Residential	California Screening Level Commercial	Boring ID:	TP-01	TP-01	TP-02	TP-02	TP-02	SB-01	SB-01	SB-01	SB-02	SB-02	SB-02	SB-03	SB-03	SB-03	SB-03	SB-03	SB-04	SB-04	SB-04
			Sample ID:	TP-1-1.5	TP-1-2.5	TP-2-0.5	TP-2-2.5	TP-2-2.5 DUP	SB-1-0.5	SB-1-1	SB-1-2.5	SB-2-0.5	SB-2-1	SB-2-1 DUP	SB-3-0.5	SB-3-1	SB-3-2.5	SB-3-5	SB-3-5 DUP	SB-4-0.5	SB-4-1	SB-4-2.5
			Sample Date:	06/21/18	06/21/18	06/21/18	06/21/18	06/21/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18
			Sample Depth:	1.5	2.5	0.5	2.5	2.5	0.5	1.0	2.5	0.5	1.0	1.0	0.5	1.0	2.5	5.0	5.0	0.5	1.0	2.5
Metals																						
Arsenic	12*	12*	mg/kg	**2.8**	4.3	4.3	2.4	2.2	2.2	-	2.8	2.7	-	-	2.4	-	2.2	-	-	3	-	-
Barium	15000	220000	mg/kg	42	**81**	57	35	51	50	-	39	39	-	-	69	-	83	-	-	54	-	-
Chromium	120000	1800000	mg/kg	12	15	12	11	16	13	-	14	11	-	-	17	-	13	-	-	13	-	-
Cobalt	23	350	mg/kg	3.6	5.4	3.8	ND (<3.0)	4.4	3.3	-	3.5	3.3	-	-	5.3	-	3.8	-	-	3.2	-	-
Copper	3100	47000	mg/kg	3.1	11	3.8	ND (<3.0)	3.4	6.1	-	ND (<3.0)	ND (<3.0)	-	-	3.6	-	ND (<3.0)	-	-	10	-	-
Lead	80	320	mg/kg	28	130	5.2	4.5	ND (<3.0)	37	-	11	7.3	-	-	18	-	5.6	3.8	-	34	6.7	6.8
Mercury	1	4.4	mg/kg	0.079	0.078	0.36	0.027	0.022	0.13	-	0.068	0.080	-	-	0.066	-	0.63	-	-	0.25	-	-
Nickel	820	11000	mg/kg	10	26	8.5	8.8	13	10	-	10	9.4	-	-	10	-	8.9	-	-	9.2	-	-
Vanadium	390	5800	mg/kg	26	51	25	21	30	28	-	26	23	-	-	36	-	24	-	-	25	-	-
Zinc	23000	350000	mg/kg	57	160	20	18	23	73	-	38	23	-	-	42	-	22	-	-	74	-	-
Organochlorine Pesticides																						
alpha-Chlordane*	1.7	6.1	mg/kg	-	-	-	-	-	0.0069	-	-	-	-	-	ND (<0.004)	-	-	-	-	0.018	-	-
Chlordane (technical)	1.7	7.7	mg/kg	-	-	-	-	-	0.035	-	-	-	-	-	ND (<0.02)	-	-	-	-	0.078	-	-
4,4'-DDD	1.9	6.2	mg/kg	-	-	-	-	-	0.004	-	-	-	-	-	ND (<0.004)	-	-	-	-	ND (<0.004)	-	-
4,4'-DDE	2	9.3	mg/kg	-	-	-	-	-	ND (<0.004)	-	-	-	-	-	ND (<0.004)	-	-	-	-	ND (<0.004)	-	-
4,4'-DDT	1.9	7.1	mg/kg	-	-	-	-	-	ND (<0.004)	-	-	-	-	-	ND (<0.004)	-	-	-	-	0.0043	-	-
Dieldrin	0.034	0.093	mg/kg	-	-	-	-	-	0.0062	-	-	-	-	-	0.0055	-	-	-	-	0.031	-	-
Endosulfan II**	470	7000	mg/kg	-	-	-	-	-	ND (<0.004)	-	-	-	-	-	ND (<0.004)	-	-	-	-	ND (<0.004)	-	-
gamma-Chlordane**	1.7	6.1	mg/kg	-	-	-	-	-	ND (<0.004)	-	-	-	-	-	ND (<0.004)	-	-	-	-	0.0092	-	-
Total Petroleum Hydrocarbons																						
Gasoline Range Organics (C6-C10)	100	120	mg/kg	ND (<5.0)	ND (<50)	ND (<25)	ND (<25)	ND (<25)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	-	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)
Diesel Range Organics (C10-C23)	260	260	mg/kg	14	690	ND (<25)	ND (<25)	ND (<25)	5.2	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	-	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)
Oil Range Organics (C23-C44)	1600	1600	mg/kg	220	4300	ND (<25)	ND (<25)	ND (<25)	58	100	63	21	23	23	-	20	33	12	8.7	98	28	47
Volatile Organic Compounds																						
Acetone	61000	670000	mg/kg	-	-	-	-	-	-	ND (<0.05)	-	-	ND (<0.05)	ND (<0.05)	-	ND (<0.05)	-	ND (<0.05)	ND (<0.05)	-	ND (<0.05)	-
Carbon Disulfide	770	3500	mg/kg	-	-	-	-	-	-	ND (<0.005)	-	-	0.005	ND (<0.005)	-	ND (<0.005)	-	ND (<0.005)	ND (<0.005)	-	0.0062	-

Notes

Hierarchy of sources for California screening levels:

1. Department of Toxic Substances Control, Human and Ecological Risk Office, Human Health Risk Assessment Note 3, June 2020

2. United States Environmental Protection Agency Regional Screening Level, November 2020

3. Direct exposure human health environmental screening levels, San Francisco Bay Regional Water Quality Control Board, 2019

* Background concentration for arsenic in Southern California shown for comparison

** Endosulfan and chlordane screening levels used as surrogates for endosulfan II and gamma-chlordane, respectively

Exceeds residential screening level
Exceeds commercial screening level
mg/kg - milligrams per kilogram
ND - not detected
- Not Analyzed
Sample depth in feet below ground surface
Various samples were analyzed for total petroleum carbon chains, full scan VOCs, title 22 metals, SVOCs, herbicides, and organochlorine pesticides (OCPs), and polychlorinated biphenyls (PCBs). Only detected compounds are reported in table.

RSLs:
EPA Regional Screening Levels for Chemical Contaminants at Superfund Sites - Region 9 (11/2020) - Residential RSLs
EPA Regional Screening Levels for Chemical Contaminants at Superfund Sites - Region 9 (11/2020) - Industrial RSLs

HERO Note 3:
DTSC HERO Note 3 (06/2020) - Residential Soil Screening Levels (Cancer Endpoint)
DTSC HERO Note 3 (06/2020) - Residential Soil Screening Levels (Noncancer Endpoint)
DTSC HERO Note 3 (06/2020) - Industrial Soil Screening Levels (Cancer Endpoint)
DTSC HERO Note 3 (06/2020) - Industrial Soil Screening Levels (Noncancer Endpoint)

ESLs:
San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (ESLs) (01/2019)

TABLE 1
SOIL ANALYTICAL RESULTS
128 Hurricane Street
Los Angeles, California

Detected Analytes	California Screening Level Residential	California Screening Level Commercial	Boring ID:	SB-04	SB-04	SB-04	SB-04	SB-05	SB-05	SB-05	SB-05	SB-06	SB-06	SB-06	SB-06	SO-01	SO-02	SO-02	SO-02	SO-03	SO-03	SO-03	SO-03
			Sample ID:	SB-4-3.5	SB-4-5	SB-4-10	SB-4-15	SB-5-0.5	SB-5-1	SB-5-2.5	SB-5-5	SB-6-0.5	SB-6-1	SB-6-2.5	SB-6-5	SO-1-2.5	SO-2-2.5	SO-2-3.5	SO-2-5	SO-3-2.5	SO-3-3.5	SO-3-5	SO-3-10
			Sample Date:	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/20/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18
			Sample Depth:	3.5	5.0	10.0	15.0	0.5	1.0	2.5	5.0	0.5	1.0	2.5	5.0	2.5	2.5	3.5	5.0	2.5	3.5	5.0	10.0
Metals																							
Arsenic	12*	12*	mg/kg	**3.5**	**2**	**4.1**	-	**2.8**	**3.3**	**4.3**	-	**2.7**	-	**2.9**	-	-	-	-	-	-	-	-	-
Barium	15000	220000	mg/kg	**62**	**10**	**21**	-	**54**	**56**	**92**	-	**60**	-	**81**	-	-	-	-	-	-	-	-	-
Chromium	120000	1800000	mg/kg	**13**	**11**	**10**	-	**10**	**11**	**15**	-	**13**	-	**12**	-	-	-	-	-	-	-	-	-
Cobalt	23	350	mg/kg	**4.0**	ND (<3.0)	ND (<3.0)	-	**3.1**	**3.3**	**3.4**	-	**3.8**	-	**4.0**	-	-	-	-	-	-	-	-	-
Copper	3100	47000	mg/kg	**15**	ND (<3.0)	ND (<3.0)	-	**7.2**	**16**	**5.4**	-	**5.4**	-	**14**	-	-	-	-	-	-	-	-	-
Lead	80	320	mg/kg	**58**	**3.4**	ND (<3.0)	-	**12**	**24**	**17**	-	**17**	-	**40**	**5.1**	**12**	**29**	ND (<3.0)	**160**	**5.0**	ND (<3.0)	**3.6**	ND (<3.0)
Mercury	1	4.4	mg/kg	**0.090**	**0.030**	ND (<0.020)	-	**0.42**	**2.4**	**0.038**	-	**0.19**	-	**0.084**	-	-	-	-	-	-	-	-	-
Nickel	820	11000	mg/kg	**14**	**7.2**	**6.8**	-	**7.5**	**8.9**	**13**	-	**10**	-	**13**	-	-	-	-	-	-	-	-	-
Vanadium	390	5800	mg/kg	**30**	**25**	**23**	-	**22**	**27**	**29**	-	**27**	-	**34**	-	-	-	-	-	-	-	-	-
Zinc	23000	350000	mg/kg	**99**	**7.2**	**8.4**	-	**30**	**51**	**100**	-	**62**	-	**120**	-	-	-	-	-	-	-	-	-
Organochlorine Pesticides																							
alpha-Chlordane*	1.7	6.1	mg/kg	-	-	-	-	-	-	-	-	**0.012**	-	-	-	-	-	-	-	-	-	-	-
Chlordane (technical)	1.7	7.7	mg/kg	-	-	-	-	-	-	-	-	**0.086**	-	-	-	-	-	-	-	-	-	-	-
4,4'-DDD	1.9	6.2	mg/kg	-	-	-	-	-	-	-	-	ND (<0.004)	-	-	-	-	-	-	-	-	-	-	-
4,4'-DDE	2	9.3	mg/kg	-	-	-	-	-	-	-	-	**0.022**	-	-	-	-	-	-	-	-	-	-	-
4,4'-DDT	1.9	7.1	mg/kg	-	-	-	-	-	-	-	-	**0.018**	-	-	-	-	-	-	-	-	-	-	-
Dieldrin	0.034	0.093	mg/kg	-	-	-	-	-	-	-	-	ND (<0.002)	-	-	-	-	-	-	-	-	-	-	-
Endosulfan II**	470	7000	mg/kg	-	-	-	-	-	-	-	-	**0.0063**	-	-	-	-	-	-	-	-	-	-	-
gamma-Chlordane**	1.7	6.1	mg/kg	-	-	-	-	-	-	-	-	**0.0058**	-	-	-	-	-	-	-	-	-	-	-
Total Petroleum Hydrocarbons																							
Gasoline Range Organics (C6-C10)	100	120	mg/kg	ND (<25)	ND (<5.0)	ND (<5.0)	ND (<5.0)	-	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<25)	ND (<5.0)	ND (<5.0)	ND (<50)	ND (<50)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)
Diesel Range Organics (C10-C23)	260	260	mg/kg	**670**	ND (<5.0)	ND (<5.0)	ND (<5.0)	-	ND (<5.0)	**130**	ND (<5.0)	ND (<5.0)	**6.7**	**530**	ND (<5.0)	**11**	**99**	**1300**	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)
Oil Range Organics (C23-C44)	1600	1600	mg/kg	**2000**	**40**	**11**	**11**	-	**80**	**840**	**30**	**61**	**86**	**2600**	**82**	**150**	**1300**	**1900**	**6.6**	**20**	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)
Volatile Organic Compounds																							
Acetone	61000	670000	mg/kg	**0.056**	ND (<0.05)	ND (<0.05)	ND (<0.05)	-	ND (<0.05)	-	ND (<0.05)	-	ND (<0.05)	-	ND (<0.05)	-	-	-	-	-	-	-	-
Carbon Disulfide	770	3500	mg/kg	ND (<0.005)	ND (<0.005)	ND (<0.005)	ND (<0.005)	-	ND (<0.005)	-	ND (<0.005)	-	**0.01**	-	ND (<0.005)	-	-	-	-	-	-	-	-

Notes
Hierarchy of sources for California screening levels:

1. Department of Toxic Substances Control, Human and Ecological Risk Office, Human Health Risk Assessment Note 3, June 2020

2. United States Environmental Protection Agency Regional Screening Level, November 2020

3. Direct exposure human health environmental screening levels, San Francisco Bay Regional Water Quality Control Board, 2019

* Background concentration for arsenic in Southern California shown for comparison

** Endosulfan and chlordane screening levels used as surrogates for endosulfan II and gamma-chlordane, respectively

Exceeds residential screening level
Exceeds commercial screening level
mg/kg - milligrams per kilogram
ND - not detected
- Not Analyzed
Sample depth in feet below ground surface
Various samples were analyzed for total petroleum carbon chains, full scan VOCs, title 22 metals, SVOCs, herbicides, and organochlorine pesticides (OCPs), and polychlorinated biphenyls (PCBs). Only detected compounds are reported in table.

RSLs:
EPA Regional Screening Levels for Chemical Contaminants at Superfund Sites - Region 9 (11/2020) - Residential RSLs
EPA Regional Screening Levels for Chemical Contaminants at Superfund Sites - Region 9 (11/2020) - Industrial RSLs

HERO Note 3:
DTSC HERO Note 3 (06/2020) - Residential Soil Screening Levels (Cancer Endpoint)
DTSC HERO Note 3 (06/2020) - Residential Soil Screening Levels (Noncancer Endpoint)
DTSC HERO Note 3 (06/2020) - Industrial Soil Screening Levels (Cancer Endpoint)
DTSC HERO Note 3 (06/2020) - Industrial Soil Screening Levels (Noncancer Endpoint)

ESLs:
San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (ESLs) (01/2019)

TABLE 1
SOIL ANALYTICAL RESULTS
128 Hurricane Street
Los Angeles, California

Detected Analytes	California Screening Level Residential	California Screening Level Commercial	Boring ID:	SO-04	SO-04	SO-04	SO-04	SO-05	SO-05	SO-05	SO-06	SO-06	SO-06	SO-06	SO-07	SO-07	SO-07	SO-07	SO-08	SO-08	SO-08	SO-08	SO-09	SO-09
			Sample ID:	SO-4-2.5	SO-4-3.5	SO-4-5	SO-4-5DUP	SO-5-2.5	SO-5-3.5	SO-5-5	SO-6-0.5	SO-6-2.5	SO-6-3.5	SO-6-5	SO-7-2.5	SO-7-3.5	SO-7-5	SO-7-5DUP	SO-8-2.5	SO-8-3.5	SO-8-5	SO-8-10	SO-9-2.5	SO-9-3.5
			Sample Date:	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18
			Sample Depth:	2.5	3.5	5.0	5.0	2.5	3.5	5.0	0.5	2.5	3.5	5.0	2.5	3.5	5.0	5.0	2.5	3.5	5.0	10.0	2.5	3.5
Metals																								
Arsenic	12*	12*	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	15000	220000	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	120000	1800000	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	23	350	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	3100	47000	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	80	320	mg/kg	ND (<3.0)	ND (<3.0)	**10**	**7.1**	**5.2**	**3.5**	**3.5**	**27**	**32**	**8.0**	ND (<3.0)	**7.0**	**7.8**	**6.7**	**8.6**	**46**	ND (<3.0)	ND (<3.0)	ND (<3.0)	**82**	ND (<3.0)
Mercury	1	4.4	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	820	11000	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	390	5800	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	23000	350000	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Organochlorine Pesticides																								
alpha-Chlordane*	1.7	6.1	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlordane (technical)	1.7	7.7	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,4´-DDD	1.9	6.2	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,4´-DDE	2	9.3	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
4,4´-DDT	1.9	7.1	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Dieldrin	0.034	0.093	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Endosulfan II**	470	7000	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
gamma-Chlordane**	1.7	6.1	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Petroleum Hydrocarbons																								
Gasoline Range Organics (C6-C10)	100	120	mg/kg	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<50)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<50)	ND (<5.0)	ND (<5.0)	ND (<5.0)	**58**	ND (<5.0)
Diesel Range Organics (C10-C23)	260	260	mg/kg	**53**	ND (<5.0)	**11**	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	**180**	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)	**6.4**	ND (<5.0)	**1700**	ND (<5.0)	ND (<5.0)	ND (<5.0)	**4600**	**61**
Oil Range Organics (C23-C44)	1600	1600	mg/kg	**370**	ND (<5.0)	**330**	**7.5**	ND (<5.0)	ND (<5.0)	ND (<5.0)	**78**	**1100**	ND (<5.0)	ND (<5.0)	**6.5**	**9.0**	**39**	**24**	**5100**	**19**	**5.0**	ND (<5.0)	**8200**	**240**
Volatile Organic Compounds																								
Acetone	61000	670000	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon Disulfide	770	3500	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes
Hierarchy of sources for California screening levels:

1. Department of Toxic Substances Control, Human and Ecological Risk Office, Human Health Risk Assessment Note 3, June 2020

2. United States Environmental Protection Agency Regional Screening Level, November 2020

3. Direct exposure human health environmental screening levels, San Francisco Bay Regional Water Quality Control Board, 2019

* Background concentration for arsenic in Southern California shown for comparison

** Endosulfan and chlordane screening levels used as surrogates for endosulfan II and gamma-chlordane, respectively

Exceeds residential screening level
Exceeds commercial screening level
mg/kg - milligrams per kilogram
ND - not detected
- Not Analyzed
Sample depth in feet below ground surface
Various samples were analyzed for total petroleum carbon chains, full scan VOCs, title 22 metals, SVOCs, herbicides, and organochlorine pesticides (OCPs), and polychlorinated biphenyls (PCBs). Only detected compounds are reported in table.

RSLs:
EPA Regional Screening Levels for Chemical Contaminants at Superfund Sites - Region 9 (11/2020) - Residential RSLs
EPA Regional Screening Levels for Chemical Contaminants at Superfund Sites - Region 9 (11/2020) - Industrial RSLs

HERO Note 3:
DTSC HERO Note 3 (06/2020) - Residential Soil Screening Levels (Cancer Endpoint)
DTSC HERO Note 3 (06/2020) - Residential Soil Screening Levels (Noncancer Endpoint)
DTSC HERO Note 3 (06/2020) - Industrial Soil Screening Levels (Cancer Endpoint)
DTSC HERO Note 3 (06/2020) - Industrial Soil Screening Levels (Noncancer Endpoint)

ESLs:
San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (ESLs) (01/2019)

TABLE 1
SOIL ANALYTICAL RESULTS
128 Hurricane Street
Los Angeles, California

Detected Analytes	California Screening Level Residential	California Screening Level Commercial	Boring ID:	SO-09	SO-10	SO-10	SO-11	SO-11	SO-12	SO-12	SO-12	SO-13	SO-13	SO-13	SO-13	SO-13
			Sample ID:	SO-9-5	SO-10-2.5	SO-10-3.5	SO-11-2.5	SO-11-3.5	SO-12-2.5	SO-12-3.5	SO-12-5	SO-13-2.5	SO-13-3.5	SO-13-5	SO-13-5DUP	SO-13-10
			Sample Date:	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18	06/28/18
			Sample Depth:	5.0	2.5	3.5	2.5	3.5	2.5	3.5	5.0	2.5	3.5	5.0	5.0	10.0
Metals																
Arsenic	12*	12*	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-
Barium	15000	220000	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-
Chromium	120000	1800000	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-
Cobalt	23	350	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-
Copper	3100	47000	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-
Lead	80	320	mg/kg	ND (<3.0)	**6.2**	**7.0**	**17**	**8.6**	**5.9**	**9.2**	**34**	**4.9**	ND (<3.0)	ND (<3.0)	ND (<3.0)	ND (<3.0)
Mercury	1	4.4	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-
Nickel	820	11000	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-
Vanadium	390	5800	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-
Zinc	23000	350000	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-
Organochlorine Pesticides																
alpha-Chlordane*	1.7	6.1	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-
Chlordane (technical)	1.7	7.7	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-
4,4´-DDD	1.9	6.2	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-
4,4´-DDE	2	9.3	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-
4,4´-DDT	1.9	7.1	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-
Dieldrin	0.034	0.093	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-
Endosulfan II**	470	7000	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-
gamma-Chlordane**	1.7	6.1	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-
Total Petroleum Hydrocarbons																
Gasoline Range Organics (C6-C10)	100	120	mg/kg	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<50)	ND (<5.0)	ND (<5.0)	7.4	ND (<5.0)	ND (<50)	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)
Diesel Range Organics (C10-C23)	260	260	mg/kg	ND (<5.0)	ND (<5.0)	ND (<5.0)	**250**	**7.0**	**33**	**150**	**170**	**1900**	ND (<5.0)	ND (<5.0)	ND (<5.0)	ND (<5.0)
Oil Range Organics (C23-C44)	1600	1600	mg/kg	**8.2**	**32**	**7.5**	**1300**	**120**	**890**	**420**	**1600**	**3700**	**9.7**	**6.6**	ND (<5.0)	ND (<5.0)
Volatile Organic Compounds																
Acetone	61000	670000	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-
Carbon Disulfide	770	3500	mg/kg	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes
Hierarchy of sources for California screening levels:

1. Department of Toxic Substances Control, Human and Ecological Risk Office, Human Health Risk Assessment Note 3, June 2020

2. United States Environmental Protection Agency Regional Screening Level, November 2020

3. Direct exposure human health environmental screening levels, San Francisco Bay Regional Water Quality Control Board, 2019

* Background concentration for arsenic in Southern California shown for comparison

** Endosulfan and chlordane screening levels used as surrogates for endosulfan II and gamma-chlordane, respectively

Exceeds residential screening level
Exceeds commercial screening level
mg/kg - milligrams per kilogram
ND - not detected
- Not Analyzed
Sample depth in feet below ground surface
Various samples were analyzed for total petroleum carbon chains, full scan VOCs, title 22 metals, SVOCs, herbicides, and organochlorine pesticides (OCPs), and polychlorinated biphenyls (PCBs). Only detected compounds are reported in table.

RSLs:
EPA Regional Screening Levels for Chemical Contaminants at Superfund Sites - Region 9 (11/2020) - Residential RSLs
EPA Regional Screening Levels for Chemical Contaminants at Superfund Sites - Region 9 (11/2020) - Industrial RSLs

HERO Note 3:
DTSC HERO Note 3 (06/2020) - Residential Soil Screening Levels (Cancer Endpoint)
DTSC HERO Note 3 (06/2020) - Residential Soil Screening Levels (Noncancer Endpoint)
DTSC HERO Note 3 (06/2020) - Industrial Soil Screening Levels (Cancer Endpoint)
DTSC HERO Note 3 (06/2020) - Industrial Soil Screening Levels (Noncancer Endpoint)

ESLs:
San Francisco Bay Regional Water Quality Control Board Environmental Screening Levels (ESLs) (01/2019)

TABLE 2
GROUNDWATER ANALYTICAL RESULTS
128 Hurricane Street
Los Angeles, California

Detected Analytes	MCL	NL	Direct Contact ESL	Boring ID: / Sample ID: / Sample Date:	SB-04 / SB-4 / 06/20/18	SO-03 / SO-3 / 06/28/18	SO-08 / SO-8 / 06/28/18	SO-13 / SO-13 / 06/28/18
General Minerals								
Chloride	500	NA	NA	mg/l	-	**1300**	**3800**	**1400**
Hardness	NA	NA	NA	mg/l	-	**680**	**1600**	**730**
Nitrate as N	10	NA	NA	mg/l	-	**0.56**	**0.60**	**0.37**
pH	NA	NA	NA	ph units	-	**6.5**	**6.5**	**7.0**
Salinity	NA	NA	NA	salinity u	-	**2.8**	**8.1**	**2.8**
Specific Conductance (EC)	1600	NA	NA	umhos/cm	-	**5200**	**14000**	**5200**
Sulfate	500	NA	NA	mg/l	-	**140**	**560**	**160**
Total Dissolved Solids	1000	NA	NA	mg/l	-	**3300**	**8600**	**3300**
Metals								
Arsenic	0.01	NA	50	mg/l	**0.1**	-	-	-
Barium	1	NA	50	mg/l	**0.3**	-	-	-
Chromium	0.05	NA	50	mg/l	**0.026**	-	-	-
Cobalt	NA	NA	50	mg/l	**0.006**	-	-	-
Copper	1.3	NA	50	mg/l	**0.017**	-	-	-
Lead	0.015	NA	50	mg/l	**0.011**	-	-	-
Molybdenum	NA	NA	50	mg/l	**0.06**	-	-	-
Nickel	0.1	NA	50	mg/l	**0.049**	-	-	-
Vanadium	NA	0.05	50	mg/l	**0.035**	-	-	-
Zinc	NA	NA	50	mg/l	**0.046**	-	-	-
Total Petroleum Hydrocarbons								
Diesel Range Organics (C10-C23)	NA	NA	640	ug/l	**190**	**420**	**420**	**250**
Oil Range Organics (C23-C44)	NA	NA	1600	ug/l	**170**	**560**	**230**	**340**

Notes
MCL - Maximum Contaminant Level (primary or secondary)
NL - Notification Level
Gross contamination environmental screening level (ESL), San Francisco Bay Regional Water Quality Control Board, 2019
NA - Not published
- Not analyzed
mg/l - milligrams per liter
ug/l - micrograms per liter
umhos/cm - micromhos per centimeter
Exceeds MCL
Various samples were analyzed for total petroleum carbon chains, full scan VOCs and oxygenates, title 22 metals, and general parameters. Only detected compounds are reported in table.

MCL:
Federal (U.S. EPA 05/2009) and Title 22 California Code of Regulations (SWRCB 04/16/2019) - primary MCLs only (Copper and Lead are Regulatory Action Levels).
https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Chemicalcontaminants.html
Drinking Water Standards (MWDSC, 2019)
http://www.mwdh2o.com/pdf_about_your_water/2.3.1_annual_water_quality_report.pdf
NL:
Drinking Water Notification Levels (SWRCB 02/06/2020)
https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/NotificationLevels.html

Table 3
Soil Removal Calculations
128 Hurricane Street
Venice, California
1 of 1

Area	Sub-Area	Volume	Volume	Weight
		ft^3	yd^3	tons
EA-1		**1633**	**60**	**82**
	EA-1-1	**600**	**22**	**30**
EA-2		**393**	**15**	**20**
	EA-2-1	**500**	**19**	**25**
EA-3		**1166**	**43**	**58**

All Excavations	***4,292 cubic feet***	***160 cubic yards***	***215 tons***
Contingency	***2,700 cubic feet***	***100 cubic yards***	***135 tons***
Total	***6,992 cubic feet***	***260 cubic yards***	***350 tons***

Formulas:

1 yd^3 = 27 ft^3

Soil density calculation is cubic footage x (100 lb/ft3)/(2000 lb/ton)

Notes and Assumptions:

EA-1 depth chosen as 1 foot below last sample exceeding screening levels (3.5 feet bgs)

EA-1-1 depth chosen as 1 foot below last sample exceeding screening levels (6 feet bgs)

EA-2 depth chosen as 1 foot below last sample exceeding screening levels (3.5 feet bgs)

EA-2-1 depth chosen as 1 foot below last sample exceeding screening levels (4.5 feet bgs)

EA-3 depth chosen as 1 foot below last sample exceeding screening levels (3.5 feet bgs)

Extents of excavation is five feet in each direction from boring sample exceeding screening levels

Contingency volume and weight is for excavation related to confirmation sampling

The numbers are preliminary and were not approved by agencies

The numbers may change after confirmation sampling

Excavations, Contingency, and Total volume in cubic feet/cubic yards/tons is rounded up to the nearest one or nearest ten for total cubic yards

ft = feet

yd = yard

Appendix A – Application for Voluntary Agency Oversight

Request for Agency Oversight Application

The purpose of this application is to provide the Department of Toxic Substances Control (DTSC) and the Regional Water Quality Control Board (Water Board) sufficient information to determine which agency will be the appropriate lead agency to provide oversight for the assessment and/or remediation of this Brownfield site. The detailed site information requested in this application will also help the appropriate lead agency to expedite the development of a cost recovery agreement, so that the applicant can begin work in a timely and efficient manner.

For a California Land Reuse and Revitalization Act (CLRRA) Agreement or a Prospective Purchaser Agreement, please complete the appropriate Supplemental Attachment since additional information is required for these programs.

SECTION 1
APPLICANT/PRIMARY CONTACT INFORMATION

The Applicant (i.e., individual, business entity, or organization) requesting oversight must possess all necessary rights and access to the site so that it can carry out any and all activities that the oversight agency may require in making its regulatory decisions.

Applicant Name: City of Los Angeles - Bureau of Engineering

Applicant Point of Contact Name: Mr. Sylvester Kueh

E-mail Address: sylvester.kueh@lacity.org

Phone: (213)485-1693

Address, City, County & Zip Code: 1149 S. Broadway Street, Los Angeles, Los Angeles County 90015

Applicant's relationship to site: Current Owner ☒ Operator ☐
Local Agency ☐ Prospective Purchaser ☐ Developer ☐
Other (please describe):

Current Owner (if different from Applicant):

Owner Point of Contact Name:

E-mail Address:

Phone: ( ) -

Address, City, County & Zip Code:

Consulting Firm Name: AECOM (for technical questions only)

Consultant Point of Contact Name: Shapoor Hamid, PhD, Principal Scientist

E-mail Address: shapoor.hamid@aecom.com

Phone: (213)996-2630

Request for Agency Oversight Application

Address, City, County & Zip Code: 300 S. Grand Avenue, Los Angeles, Los Angeles County 90071

Primary Point of Contact for this Site: Applicant Contact ☒ or Consultant Contact ☒ or Owner Contact ☒

Billable Party Information:

Billing Point of Contact Name:

E-mail Address:

Phone: ( ) -

Address, City, County & Zip Code:

Tax ID Number (applicable only to business entities and organizations; please do not provide individual social security numbers):

SECTION 2
SITE INFORMATION

If applicable, the applicant may reference information from an attached Phase 1 Environmental Assessment or other site investigation reports available for the Site.

1. Is this Site listed on Envirostor? Yes ☐ No ☒ and/or Geotracker? Yes ☐ No ☒

2. Name of Site: 128 Hurricane Street - VAPP

3. Address City County ZIP: 128 Hurricane Street, Venice also known as 128 Hurricane Street, Marina Del Rey, CA 90292

4. APN(s): 422-5010-016 Acres: 0.097 Zoning: Mixed

5. Provide a Site Location Map and a Site Diagram showing significant features

6. Describe the current use of the Site and include description of features:
   Vacant Lot

7. Describe the surrounding land use (including proximity to residential housing, schools, churches, etc.):
   Surrounded by Residential housing, and water treatment plant. School within 0.3 miles.

8. Background: Current & Previous Business Operations
   Name: Currently, no business operations. Past business operations was oil production from 1928 to 1932.

Request for Agency Oversight Application

Type: Public Facilities

Years of Operation:4

9. If known, list all previous businesses operating on this Site:
   1. McDonald Petroleum, Ltd.
   2.
   3.
   4.
   5.

10. What hazardous substances, pollutants, or contaminants have been or are being used/stored at the Site?
    Petroleum hydrocarbons

11. What environmental media is/was/may be contaminated (check all that apply)?
    Soil ☒ Air ☐ Groundwater ☐ Surface Water ☐ Unknown ☐

12. Has sampling been conducted? Yes ☒ No ☐ If yes, then identify the contaminants detected, including the maximum concentrations, and contaminants that exceeded screening levels (e.g., Preliminary Remediation Goals or California Human Health Screening Levels).Reports Attached

13. Is there currently a potential of exposure of the community or workers to hazardous substances, pollutants, or contaminants at the Site?
    Yes ☒ No ☐ If yes, then explain. Direct exposure to petroleum hydrocarbons if excavation occurs.

14. Provide a brief summary of removal or remedial activities that have been undertaken or completed at the Site, if any. see attached RAP

15. Provide a description of known or possible water quality impacts at the Site. Also, provide information about the type(s) of water supply for the Site and, if known, any information on municipal, domestic, agricultural or industrial water supply wells that are either on the Site or within a 1-mile radius of the project area.

    Not known

16. Are any Federal, State or Local regulatory agencies currently involved with the Site? Yes ☒ No☐ If yes, describe the regulatory agencies' involvement with the Site, and provide the regulatory agencies' contact names and telephone numbers below.

Agency Involvement Contact Name Phone

Agency	Involvement	Contact Name	Phone Number

Request for Agency Oversight Application

Army Corps of Engineering	**Section 404 Water Permit**	**Deana J. Cummings**	**(213)452-3002**
Los Regional Water Quality	**Section 401 Water Permit**	**Dana Cole**	**(213)576-5733**
Califoria Coastal Commission	**State Coastal Development Permit**	**Shannon Vaughn**	**(562)590-5071**

17. What is the proposed future use of the Site? Develop as parking lot, open space, and landscaping

18. If the Site is not cleaned-up to unrestricted standards, will the owner accept land use restrictions? Yes

19. What oversight service is being requested of the Lead Agency (check all that apply)?

Initial Investigation/Preliminary Endangerment Assessment ☐
Supplemental Investigation ☐
Remedial Investigation/Feasibility Study ☐
Removal Action/Remedial Action ☒
Case Closure ☐
Document Review ☐
Other:

20. Provide a general description of the nature of the proposed redevelopment, including a general timeline for construction: The city plans to develop the vacant lot into a parking lot, open space, and landscaping. Timeline is not known at this time.

21. Provide information about the potential benefits of the proposed redevelopment, if available:

Anticipated number of jobs created/retained: Unknown
Anticipated number of proposed residential units: 0
Anticipated square footage of planned commercial space: 3,031
Anticipated square footage of planned open space: 1,199
Anticipated acres made ready for re-use by proposed Site cleanup: 0.097

22. Provide information on the environmental documents produced for the Site to date. Note that copies may be requested by the designated Lead Agency.

☐ Preliminary Endangerment Assessment, dated
☒ Phase 1 Environmental Assessment, dated June 21,2016

Request for Agency Oversight Application

- ☒ Phase 2 Environmental Assessment, dated August 31, 2018, amended May 2020
- ☐ Health Risk Assessment, dated
- ☒ Other, describe and provide date: Geotechnical Investigation Summary Report dated July 24, 2006
- ☒ Other, describe and provide date: Phase III ESA - Remediation Plan, May 2020
- ☐ Other, describe and provide date

SECTION 3
COMMUNITY PROFILE INFORMATION

1. What are the demographics of the community (e.g., socioeconomic level, ethnic composition, specific language considerations, etc.)?
   As of 2017, Median household income: 106,612; 69.7% white, 9.52% hispanic

2. **Local Interest**: Has there been any media coverage?
   no

3. **Past Public Involvement**: Has there been any past public interest in the Site as reflected by community meetings, ad hoc committees, workshops, fact sheets, newsletters, etc.?
   Yes, the VAPP EIR process and public hearings with the Department of City Planning

4. **Key Issues and Concerns**: Have any specific concerns/issues been raised by the community regarding past operations or present activities at the Site?
   Noise, vibration, traffic

5. Are there any concerns/issues anticipated regarding Site activities?
   No

6. Are there any general environmental concerns/issues in the community relative to neighboring sites?
   Noise, vibration, traffic

7. Describe the visibility of activities and any known interest the Site:
   Activities would be visible from nearby residential buildings and along the walking trail known as the Espanade, but is a low traffic area.

Request for Agency Oversight Application

SECTION 4
CERTIFICATION

The signatory below is an authorized representative of the Applicant and certifies to the best of his/her knowledge and belief that the information contained in this application, including any attachments, is true and complete and accurately describes the Applicant, the Site, and related conditions. The Applicant agrees to promptly inform the agency of any changes that occur in the information contained in this application.

The Applicant agrees to reimburse the lead agency (the Department of Toxic Substances Control or the Regional Water Quality Control Board) for the lead agency's costs in preparing and negotiating the appropriate cost recovery agreement, regardless of whether the agreement is subsequently executed by the Applicant and the lead agency, and, in the event the cost recovery agreement is executed by the parties, for oversight of the activities identified in the Scope of Work of the selected Agreement.

_____	_____	_____
Applicant Representative	Date	Title

Request for Agency Oversight of a Brownfield Site
Supplemental Attachment: California Land Reuse and Revitalization Act (CLRRA) Application

Please complete this form ONLY if you are an eligible entity applying for a California Land Reuse and Revitalization Act (CLRRA) Agreement

Definitions of terms used in the CLRRA Application can be found in Article 2 "Definitions," and Article 6, "Streamlined Site Investigation and Response Plan Agreements," Chapter 6.82, Division 20 of the Health and Safety Code (commencing with section 25395.60).

1. Are you applying as a/an:
   - ☐ Bona fide purchaser (BFP)
   - ☐ Contiguous property owner (CPO)
   - ☐ Innocent landowner (ILO)
   - ☐ Prospective purchaser (PP)
   - ☐ Bona ground tenant (BGT)

2. Is the Site located outside an infill area in an urban area?
   Yes☐ No☐

3. Is the Site solely impacted by petroleum from an underground storage tank and eligible for reimbursement from the Underground Storage Tank Cleanup Fund?
   Yes☐ No☐

   If you answered YES to either question 2 or 3, contact a DTSC Brownfield Coordinator to discuss Site-specific details.

4. Current zoning and planned use of the Site:

5. Do you own the Site? Yes☐ No☐

6. Did (will, in the case of a PP) the owner conduct due diligence or All Appropriate Inquiry (AAI) prior to acquiring Site? Yes☐ No☐

   Date AAI was conducted (will be conducted, in the case of a PP) _____.

7. Did the owner take reasonable steps with regard to contamination at the Site including, as appropriate; stopping continuing releases, preventing threatened releases, and preventing or limiting human, environmental or natural resource exposure to earlier hazardous substance releases? Yes☐ No☐

8. Date the Site was/will be purchased and title was/will be transferred

See attached Addendum for definitions of CLRRA terms used in this Supplemental Attachment.

Request for Agency Oversight of a Brownfield Site
Supplemental Attachment: California Land Reuse and Revitalization Act (CLRRA) Application

Applicant's Disclosure Statement:

In submitting this application, I verify that, to the best of my knowledge, I can meet the requirements for a Bona Fide Purchaser, Contiguous Property Owner Innocent Landowner, Prospective Purchase or Bona Fide Ground Tenant set forth in Division 20, Chapter 6.82 (commencing with section 25395.60) of the Health and Safety Code and, upon request by the oversight agency, will submit documentation that I meet each of the following conditions in accordance with Health and Safety Code section 25395.80:

> *On or before the date of property acquisition, I made "All Appropriate Inquiries" into the previous ownership and uses of the site; and*
>
> *I am not potentially liable or affiliated with any other person who is potentially liable through any direct or indirect familial relationship, or through any contractual, corporate, or financial relationship unless that relationship was created by the instrument by which title or possession to the site was conveyed or financed or was a contract for the sale of goods or services, or through the result of a reorganization of a business entity that was potentially liable for the release or threatened release of hazardous materials at the site.*

The Applicant agrees to reimburse the lead agency (the Department of Toxic Substances Control or the Regional Water Quality Control Board) for the lead agency's costs in preparing and negotiating the CLRRA Agreement, regardless of whether the agreement is subsequently executed by the Applicant and the lead agency, and, in the event a CLRRA Agreement is executed by the parties, for oversight of the activities identified in the agreement.

The signatory below is an authorized representative of the Applicant and certifies to the best of his/her knowledge and belief that the information contained in this application, including any attachments, is true and complete and accurately describes the Applicant, the Property, and related conditions. The Applicant agrees to promptly inform the lead agency of any changes that occur in the information contained in this application.

Signature of Applicant:

_____

Date:

_____ _____

Name & Title:

_____ _____

Address:

_____ _____

Request for Agency Oversight of a Brownfield Site
Supplemental Attachment: Prospective Purchaser Agreement

Please complete this form ONLY if you are an eligible entity applying for a Prospective Purchaser Agreement with DTSC

1. Is the current owner aware of your plans to seek a Prospective Purchaser Agreement with DTSC?
   Yes ☐ No ☐

   a) If "yes," then when do you expect to take title to the Site?

   b) If "no," then what is your proposed interest in the Site and what vehicle will be used to consummate the transaction?

2. Please describe if known, the timing of the proposed property transaction in sufficient detail to give DTSC a sense of your needs and timetable.

3. Attach a copy of the Site map, legal boundary description and Title Report.

4. Describe the "substantial benefit" to the State of California that will result if your proposal is implemented. For example, describe the changes expected in the local and state tax base or other benefits to the community and surrounding neighborhood which could occur as a result of the Site redevelopment.

5. Describe the financing to be used to complete remediation prior to the development of the Site.

6. Briefly describe, in general terms, the removal or remedial activities to be performed in the future.

7. Attach a list of names and addresses of potentially responsible parties, and describe all efforts to identify the potentially responsible parties.

Note: If remediation is occurring during and after construction, such as for groundwater treatment or soil vapor extraction, a separate Operation and Maintenance Agreement must be executed to ensure that remedial activities occur until remedial goals are met.

Request for Agency Oversight of a Brownfield Site
Supplemental Attachment: Prospective Purchaser Agreement

Applicant's Disclosure Statement:

In submitting this application, I verify under penalty of perjury that, to the best of my knowledge, the Applicant is not a responsible party or affiliated with a responsible party for this site.

The Applicant agrees to reimburse the lead agency for its costs in preparing and negotiating the Prospective Purchaser Agreement, regardless of whether the agreement is subsequently executed by the Applicant and the lead agency, and, in the event a Prospective Purchaser Agreement is executed by the parties, for oversight of the activities identified in the agreement.

The signatory below is an authorized representative of the Applicant and certifies to the best of his/her knowledge and belief that the information contained in this application, including any attachments, is true and complete and accurately describes the Applicant, the Property, and related conditions. The Applicant agrees to promptly inform DTSC of any changes that occur in the information contained in this application.

Signature of Applicant:

_____

Date:

Name & Title:

Appendix B – Communication Log with Regulatory Agencies

Table B-1
Agency Contact and Requirements
128 Hurricane Street
Venice, California
1 of 1

Agency	Contact Name	Contact Phone Number	Contact Email	Notes
LA City Fire Department - CUPA	Alvin Dong	213-238-3515	alvin.dong@lacity	Site and scope does not fall under agency jurisdiction.
LA County Fire Department	Richard Clark	213-890-4106	richard.clark@fire.lacounty.gov	Agency is not accepting new applications for voluntary environmental oversight cases due to COVID-19; referred new cases to DTSC.
AQMD	Stephen Boggs	909-396-2141	sboggs@aqmd.gov	Rules 1166 (VOCs) and 1466 (lead) apply to this site. Variable site plan acceptable for 1166. Rule 1466 needs site specific plan.
DTSC	Irena Edwards	714-484-5385	irena.edwards@dtsc.ca.gov	DTSC sent an application for voluntary agency oversight. The application must be submitted with the RAP. It will determine whether the DTSC or LARWQCB will be the lead agency. They had no additional requirements beyond what the current guidance documents prescribe.
LARWQCB	NA	916-341-5272	info@waterboards.ca.gov	Emailed and called; no response; application supplied by DTSC will determine whether DTSC or LARWQCB will assume lead agency.
LADBS	Catherine Nuezca-Gaba	213-473-3231	NA	No methane mitigation is needed for scope of RAP.

Notes:
NA - Not available
LA City Fire Department - CUPA - Los Angeles City Fire Department - Certified Unified Program Agency
LA County Fire Department - Los Angeles County Fire Department - Certified Unified Program Agency
AQMD - Air Quality Management District
DTSC - Department of Toxic Substances and Control
LARWQCB - Los Angeles Regional Water Quality Control Board
LADBS - Los Angeles Department of Building Services
RAP - Remedial Action Plan
VOC - Volatile Organic Compound

Call Logs

Los Angeles City Fire Department – CUPA

AECOM spoke with Alvin Dong over the phone. After discussing the scope and location of the site, Mr. Dong stated that the scope of the RAP does not fall under the agency's jurisdiction. No further action is needed.

LADBS

AECOM spoke with Catherine Nuezca-Gaba over the phone. After discussing the scope and results of the methane investigation, Ms. Nuezca-Gaba stated that no methane mitigation methods need to be implemented under the scope of the RAP. No permits or notifications are necessary during RAP implementation.

LARWQCB

AECOM called and left voicemail. No response via email or phone. Voluntary Agency Application states that it will be shared by DTSC with LARWQCB upon submittal.

Stephens, Samuel

From: Clark, Richard <Richard.Clark@fire.lacounty.gov>
Sent: Tuesday, April 21, 2020 12:03 PM
To: Stephens, Samuel
Subject: [EXTERNAL] Automatic reply: Agency Requirements for Soil Management Plan of TPH-d and Lead Impacted Site

Categories: Important

MARCH 25, 2020 UPDATED (COVID-19) NOTICE: This Department's Site Mitigation Unit (SMU) is an essential government agency. SMU staff are currently working on their environmental oversight cases.

FEBUARY 2020 UPDATED NOTICE: The Site Mitigation Unit (SMU) is currently not accepting any new sites at this time. Nor, is SMU placing any addtional sites on the SMU waiting list at this time, unless you meet one of the EXCEPTIONS addressed below or acquire special circumstance approval - Subject to Review and Approval. **Future Sites** that enter into a voluntary Remedial Action Agreement with SMU will be placed on the GeoTracker Internet Website, and any volatile organic compound (VOC) affected soil/soil vapor will undergo an **initial/preliminary screening** [i.e., attenuation factors (DTSC subslab ~ 0.05); (USEPA residential/commercial ~ 0.03); (DTSC residential/commercial ~ 0.002/0.001)] to screen for the potential of a vapor intrusion pathway. In the meantime, if you are not on the SMU waiting list (or you can't wait any longer), please contact the DTSC or LARWQCB for oversight as discussed below:

NOTICE: Information regarding most SMU oversight cases can be obtained through this Department's Health Hazardous Materials Division (HHMD)/Los Angeles County Certified Unified Program Angency (CUPA) "Public Records Act Request" Internet webpage at the following URL: https:/www.fire.lacounty.gov/hhmd-2/public-records-requests/

The Site Mitigation Unit (SMU) of this Department is not processing any new voluntary environmental oversight case applications at this time. In the meantime, you will have to pursue oversight with the Cal-EPA Department of Toxic Substances Control (DTSC) by contacting Irena Edwards of the DTSC Site Mitigation and Restoration Program either by phone (714-484-5385) and/or by email (irena.edwards@dtsc.ca.gov). You can also contact the Los Angeles Regional Water Quality Control Board (LARWQCB).

There are a few **EXCEPTIONS** to the current "hold-status" on the SMU processing of new oversight cases. Meaning, there are certain exceptions (for certain types of sites) whereby SMU will still pursue oversight. These exceptions include (but are not limited to):

- Active Permitted CUPA hazardous waste facilities
- Active hazardous waste generating facilities requiring a CUPA Permit
- Active Permitted CUPA PBR and/or CA hazardous waste treatment facilities (subject to Corrective Action oversight)
- Inactive Non-Permited CUPA PBR and/or CA hazardous waste treatment facilities (subject to Corrective Action oversight)
- Case by Case Basis: Site evaluation by SMU supervisor

If you believe one of these exceptions apply to your prospective site, please call Perla Garcia at (323) 890- 4035, or email Ms. Garcia at perla.garcia@fire.lacounty.gov and request a site evaluation by the SMU supervisor. Thank you.

Sincerely,

Richard Clark, MS, PE
Deputy Health Officer
Site Mitigation Unit Supervisor
Los Angeles County Fire Department

Stephens, Samuel

From: Stephen Boggs <sboggs@aqmd.gov>
Sent: Tuesday, April 21, 2020 1:28 PM
To: Stephens, Samuel
Cc: Ostensen, Carole; Hamid, Shapoor
Subject: [EXTERNAL] RE: Agency Requirements for Soil Management Plan of TPH-d and Lead Impacted Site

Categories: Important

Good afternoon Samuel,

Thank you for reaching out in regards to your project. Due to the presence of TPH-d, lead, and historical oil production wells at the site, South Coast AQMD Rule 1166 and 1466 seem to apply to this project. Below there is additional information for obtaining a Rule 1166 excavation plan. Rule 1466 pertains to controlling particulate emissions from soils with toxic air contaminants but does not require a plan to be submitted. Since lead has been found at the site, please review and be familiar Rule 1466.

A Rule 1166 plan shall be submitted for the excavation, grading, handling, and treating of VOC containing soil (per Rule 1166(c)(1) on page 1166-2). VOC containing soil is soil that contains VOC (there is no lower limit threshold). VOC stands for volatile organic compounds. Typically VOCs that are encountered may include gasoline, diesel, crude, waste oil, adhesive, paint, solvent, etc., but it could be any other VOC containing material.

There are two types of Rule 1166 plans: 1) Various Locations Plan and 2) Site Specific Plan.

1) A Various Locations Plan is designed for contractors that conduct on a regular basis smaller scale excavations. This plan allows the plan holder to operate at multiple sites under a single plan. A Various Locations Plan may be continuously renewed on an annual basis. A various locations plan may be obtained if:
    - The excavation involves less than 2000 cubic yards of VOC-contaminated soil in any 12 month period at a particular site,
    - Another various locations plan is not being used at the same site within a 12 month period,
    - The excavation site is greater than 1000 feet from the outer boundary of a school, and
    - The excavation does not involve grading, soil treatment or remediation, or landfills.

    Submitting a Rule 1166 Various Locations Plan requires:
    - A signed and completed Form 400-A (please indicate Compliance Plan in Section D7a),
        - Instructions for Form 400-A
    - A signed and completed Applicant's Statement
    - A check in the amount of $322.50

2) A Site Specific Plan is designed for larger excavations and projects that cannot obtain a Various Location Plan. Note that a Site Specific Plan expires two years from the date of issuance, and cannot be renewed beyond two years.

    Submitting a Rule 1166 Site Specific Plan requires:
    - A signed and completed Form 400-A (please indicate Compliance Plan in Section D7a),
        - Instructions for Form 400-A

- A signed and completed Form 400-CEQA
    - Instructions for Form 400-CEQA
    - If a CEQA document has been prepared for the project, include the Notice of Determination and any Air Quality mitigation measures identified in the CEQA document.
- Reasons for excavation or grading.
- A site summary indicating the cause of VOC soil contamination and the site history.
- Description of tanks or piping associated with the soil contamination (if applicable).
- The operating schedule for excavation and removal (hours/day, days/week, weeks/year, or equivalent).
- Description of how the excavation or grading will be conducted.
- Description of mitigation measures for dust, odors, and VOC.
- Details of disposal of VOC contaminated soil, including the name of the facility where contaminated soil will be taken for treatment or disposal.
- Description of monitoring equipment and techniques.
- A plot plan indicating the location of the excavation, with property lines, and surrounding area up to 2500 feet away, and including any schools, residential areas or other sensitive receptors such as hospitals or locations where children or elderly people live or work.
- Designation of a person who can conduct a site inspection with the Executive Officer prior to issuance of the plan.
- The total amount of soil to be excavation in cubic yards under this project.
- The total amount of soil that could be stockpiled on site at any one time in cubic yards under this project.
- Any soil/soil gas analysis that may have been conducted for the site.
- A check in the amount of $725.60

If you need the plan in an expedited fashion, you may want to request for an expedited plan by submitting:

- A signed Form 400-XPP
- An additional 50% more fees from the plan fees listed above.
- Please note that requesting expedited processing does not guarantee that you will receive plan approval within in a certain timeframe, but it will allow dedicated time for our staff to process the plan based on staff availability.

Currently our office is closed to the public, so we are excepting applications by mail or they can be submitted electronically. Applications, along with fees, can be mailed to the address in the top right corner of Form 400-A.

South Coast AQMD
P.O. Box 4944
Diamond Bar, CA 91765-0944

Or

If you would like to submit the application and fees electronically, please submit to PermitServicesOnline@aqmd.gov along with the fee payment voucher receipt. The fees can be paid online using the Permit Application Processing Fee Portal (https://xappprod.aqmd.gov/icafe/startcafe.aspx). Be sure to print out the receipt voucher and include that with the application submittal.

If you plan to request expedited processing, use Option 2 from our Permit Processing Fee Portal page. Option 1, the Online Fee Calculator, does not give the option to select expedited processing for plan applications.

For your information you can check out the Rule 1166 Site Specific and Various Locations Mitigation Plan webpage to see an example of a Sample Rule 1166 Site Specific Plan. 1166 Notification Forms are also available at that location.

Also note that South Coast AQMD is open Tuesday – Friday from 7am-5:30pm. We are closed on Mondays.

Please feel free to contact me with any questions.

Best,

Stephen Boggs
South Coast AQMD
Air Quality Engineer
(909) 396-2141
sboggs@aqmd.gov

From: Stephens, Samuel <Samuel.Stephens@aecom.com>
Sent: Tuesday, April 21, 2020 12:02 PM
To: Stephen Boggs <sboggs@aqmd.gov>
Cc: Ostensen, Carole <carole.ostensen@aecom.com>; Hamid, Shapoor <shapoor.hamid@aecom.com>
Subject: Agency Requirements for Soil Management Plan of TPH-d and Lead Impacted Site

Hello Mr. Boggs,

My name is Samuel Stephens with AECOM, and I am writing a soil management plan for a site in Marina del Rey, California. A Phase II ESA showed a select number of soil samples exhibiting TPH-d and lead concentrations exceeding residential screening levels.

I would like to discuss if there are any requirements and permits for removing the impacted soil. I can be reached via email or phone any time today or tomorrow.

Background: Historically, the Site was a vacant, dirt lot without developed structures since 1928. The Site consisted of an oil production well that was drilled in 1930 and was abandoned in 1932 according to the DOGGR well finder website. The oil production well operations likely impacted the soil and might be incompletely abandoned. The surrounding area was developed with oil production facilities from 1938 to 1952 and residential properties from late 1963 to the present. The Site has not undergone any remediation. The contamination is confined mainly to the western side of the site. Soil samples exceeding residential screening levels occur between 2.5 and 5 feet below ground surface (bgs). Groundwater is encountered between 4 and 6 feet bgs. Groundwater sample concentrations did not exceed environmental screening levels (ESL). The three excavation areas and two sub-areas are estimated to be approximately 160 cubic yards (215 tons).

Please let me know if you need more information. Thank you for your time.

Samuel Stephens, GIT
Staff Geologist, Environment
D +1-213-996-2315
M +1-713-446-9202
samuel.stephens@aecom.com

AECOM
300 S. Grand Avenue
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T +1-213-593-8100
aecom.com

Stephens, Samuel

From: Stephens, Samuel
Sent: Thursday, April 30, 2020 4:14 PM
To: Edwards, Irena@DTSC
Subject: Re: Agency Requirements for Soil Management Plan of TPH-d and Lead Impacted Site

I am planning to submit the Phase II ESA with the RAP as an appendix. Thank you for your help in all this.

Samuel Stephens, GIT
Staff Geologist, Environment
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samuel.stephens@aecom.com

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Staff Geologist, Geoscience Remediation Division
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M +1-713-446-9202
samuel.stephens@aecom.com

From: Edwards, Irena@DTSC <Irena.Edwards@dtsc.ca.gov>
Sent: Thursday, April 30, 2020 3:38:49 PM
To: Stephens, Samuel <Samuel.Stephens@aecom.com>
Subject: [EXTERNAL] Re: Agency Requirements for Soil Management Plan of TPH-d and Lead Impacted Site

Hi Samuel,

Do you have a site assessment report? If yes, please submit it with the application. It will be easier to prepare a cost estimate for the VCA.

Thanks,
Irena

From: Stephens, Samuel <Samuel.Stephens@aecom.com>
Sent: Thursday, April 30, 2020 1:25 PM
To: Edwards, Irena@DTSC <Irena.Edwards@dtsc.ca.gov>

Cc: Hamid, Shapoor <shapoor.hamid@aecom.com>
Subject: RE: Agency Requirements for Soil Management Plan of TPH-d and Lead Impacted Site

Hello Irena,

Does a Health and Safety Plan need to be submitted with the application and RAP? I found no mention in the application.

Samuel Stephens, GIT
Staff Geologist, Environment
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From: Edwards, Irena@DTSC <Irena.Edwards@dtsc.ca.gov>
Sent: Tuesday, April 28, 2020 11:57 AM
To: Stephens, Samuel <Samuel.Stephens@aecom.com>
Subject: [EXTERNAL] RE: Agency Requirements for Soil Management Plan of TPH-d and Lead Impacted Site

Dear Samuel,
Please send me the application and the Soil Management Plan and any reports you have. Once DTSC receives the application we'll coordinate with the Waterboard. Takes less than a week.
We can review the Plan while processing the VCA.
Thanks,
Irena Edwards

From: Stephens, Samuel <Samuel.Stephens@aecom.com>
Sent: Tuesday, April 28, 2020 11:42 AM
To: Edwards, Irena@DTSC <Irena.Edwards@dtsc.ca.gov>
Cc: Hamid, Shapoor <shapoor.hamid@aecom.com>
Subject: RE: Agency Requirements for Soil Management Plan of TPH-d and Lead Impacted Site

Hello Irena,

Thank you for the response. I have some clarifying questions:

1. Is this application required prior to submittal of the soil management work plan that I am drafting or is the application due prior to implementation? In other words, will I need to submit the Soil Management Plan to DTSC and the Waterboard?

2. How long is the application approval process?

Samuel Stephens, GIT
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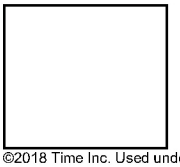

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From: Edwards, Irena@DTSC <Irena.Edwards@dtsc.ca.gov>
Sent: Thursday, April 23, 2020 9:34 AM
To: Stephens, Samuel <Samuel.Stephens@aecom.com>
Subject: [EXTERNAL] Fw: Agency Requirements for Soil Management Plan of TPH-d and Lead Impacted Site

Dear Samuel,

Attached is a VCA application for your client for DTSC to oversee lead soil removal.
You should use all applicable US EPA and California laws, regulations, and guidance documents for cleanup of hazardous waste sites. Please feel free to look them up on DTSC web site.

Sincerely,
Irena Edwards

From: Stephens, Samuel <Samuel.Stephens@aecom.com>
Sent: Tuesday, April 21, 2020 1:40 PM
To: Edwards, Irena@DTSC <Irena.Edwards@dtsc.ca.gov>
Cc: Ostensen, Carole <carole.ostensen@aecom.com>; Hamid, Shapoor <shapoor.hamid@aecom.com>
Subject: Agency Requirements for Soil Management Plan of TPH-d and Lead Impacted Site

Hello Ms. Irena Edwards,

My name is Samuel Stephens with AECOM, and I am writing a soil management plan for a site in Marina del Rey, California. A Phase II ESA showed a select number of soil samples exhibiting TPH-d and lead concentrations exceeding residential screening levels.

I would like to discuss if there are any requirements for removing the impacted soil. I can be reached via email or phone any time today or tomorrow.

Background: Historically, the Site was a vacant, dirt lot without developed structures since 1928. The Site consisted of an oil production well that was drilled in 1930 and was abandoned in 1932 according to the DOGGR well finder website. The oil production well operations likely impacted the soil and might be incompletely abandoned. The surrounding area was developed with oil production facilities from 1938 to 1952 and residential properties from late 1963 to the present. The Site has not undergone any remediation. The contamination is confined mainly to the western side of the site. Soil samples exceeding residential screening levels occur between 2.5 and 5 feet below ground surface (bgs). Groundwater is encountered between 4 and 6 feet bgs. Groundwater sample concentrations did not exceed environmental screening levels (ESL). The three excavation areas and two sub-areas are estimated to be approximately 160 cubic yards (215 tons).

Please let me know if you need more information. Thank you for your time.

Samuel Stephens, GIT
Staff Geologist, Environment
D +1-213-996-2315
M +1-713-446-9202
samuel.stephens@aecom.com

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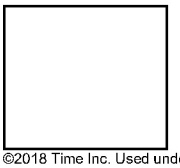

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Appendix C – CalGEM Correspondence

Stephens, Samuel

From: Brandt, Grace@DOC <Grace.Brandt@conservation.ca.gov>
Sent: Wednesday, April 22, 2020 9:18 AM
To: Ostensen, Carole
Subject: [EXTERNAL] RE: Information for McDonald 2 Well (API 03713842)
Attachments: WellSTAR QRG - CSWR.PPT; CSWR Application WSformat (template).pdf; CSWR_Instructions_rev1-2020.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Carole,

CalGEM has a Construction Site Well Review (CSWR) program, which allows a developer to request the appropriate local Division to review the records for wells on a specific property. After review, CalGEM will submit a report to the appropriate land use authority with a copy to the developer, on the current state of abandonment of the well(s) in question. This report gives the land use authority technical information on the well abandonment, including, whether the abandonment meets current Division standards. The land use authority will use this information in their permitting decision-making process.

A well is plugged to current standards if it is in compliance with Public Resources Code (PRC) § 3208 which states in parts that:

"A well is properly abandoned when it has been shown, to the satisfaction of the supervisor, that all proper steps have been taken to isolate all oil-bearing or gas-bearing strata encountered in the well, and to protect underground or surface water suitable for irrigation or farm or domestic purposes from the infiltration or addition of any detrimental substance and to prevent subsequent damage to life, health, property, and other resources."

I have attached CSWR application and instructions along with the WellSTAR's quick reference guide (QRG).

The Construction Site Well Review (CSWR) application can be submitted to this office either by:

- mail
- email
- or through WellSTAR

I've tried to answer your questions below in green. Let me know if you have any additional questions.

Grace P. Brandt
Associate Oil and Gas Engineer
California Geologic Energy Management Division
Southern District
Email: Grace.Brandt@conservation.ca.gov

From: Ostensen, Carole <carole.ostensen@aecom.com>
Sent: Monday, April 20, 2020 10:03 AM

To: CalGEMSouthern@DOC <CalGEMSouthern@conservation.ca.gov>
Cc: Hamid, Shapoor <shapoor.hamid@aecom.com>; Stephens, Samuel <Samuel.Stephens@aecom.com>
Subject: Information for McDonald 2 Well (API 03713842)

To Whom This May Concern,

AECOM is a consulting firm working for the City of Los Angeles at a newly purchased site for redevelopment located at 128 Hurricane Street, Marina del Rey, CA. According to the State of California Geologic Energy Management Division (CalGEM) well finder website, a historical oil production well is present on this Site (Well No. McDonald 2, API 03713842), with a total depth of 5,860 feet below ground surface (bgs). The well went dry, and was abandoned in May 1932. The bottom of the hole was plugged at 2,018 feet bgs. Various cement plugs were emplaced in the hole, from 1996 to 1929 feet and 729 to 675 feet. All other spaces were filled with heavy mud. The hole had been cemented at deeper depths prior to this final abandonment.

The City has plan for redevelopment of this site into a parking lot with picnic area (note that the McDonald 2 well will be located within a parking area not a picnic area). No buildings are being planned.

We would like to get information on the current status of the oil well in relation to the latest CalGEM requirements. Specifically, we have the following questions we were wondering if you could help us with:

Questions:

1. Prior to Site Redevelopment, are there specific requirements for the abandoned oil production well, McDonald 2 (API 03713842) (which was abandoned in 1932 according to our latest information)?

This will be addressed in the CSWR report.

2) It is our understanding that the owners of many older oil production wells received letters in 2017 to re-abandon the wells on their properties according to the new requirements. Is it possible to determine if the abandoned McDonald 2, API 03713842 well received a directive letter in response to the new regulatory requirements?

It depends if the well is leaking and/or if access to the well is impeded.

3) Does an inspection or leak testing need to be conducted or should the well be re-abandoned? If so, what is the criteria and procedures for inspection, leak testing, or re-abandonment (whichever is applicable)?

Yes, CalGEM recommends that the well be leak tested and re-abandoned.

4. What is the latest requirements and criteria for development on a site with an abandoned oil well?

CalGEM recommends that no structure be placed in a manner that will impede access to the oil well, however CalGEM does not have land use authority.

Your assistance in this matter is greatly appreciated.

Sincerely,

Carole M. Ostensen
Geoscience Remediation Division

D 1-213-996-2465 C 1-213-700-9473
Carole.Ostensen@aecom.com

AECOM
300 S. Grand Ave., 8th Floor
Los Angeles, CA 90071
T 1-213-593-8100 F 1-213-593-8604
www.aecom.com

Appendix D – Community Update

Department of Toxic Substances Control

COMMUNITY UPDATE

The mission of DTSC is to protect California's people and environment from harmful effects of toxic substances by restoring contaminated resources, enforcing hazardous waste laws, reducing hazardous waste generation, and encouraging the manufacture of chemically safer products.

February 2021

VENICE AUXILIARY PUMPING PLANT

DRAFT REMEDIAL ACTION WORKPLAN (RAW)

128 HURRICANE STREET, MARINA DEL REY, CALIFORNIA, 90292

The Department of Toxic Substances Control (DTSC) is announcing a public comment period for the Venice Auxiliary Pumping Plant Draft Remedial Action Workplan (RAW). DTSC will be accepting comments on the RAW that proposes the cleanup of soil contaminated with petroleum hydrocarbons from the property located at 128 Hurricane Street, Marina Del Rey.

SITE LOCATION

The site was recently purchased by the City of LA. The current development plan for this site includes an asphalt parking lot with a picnic area/green area for the surrounding community use.
Proposed development plans at the Site will include development of an asphalt parking lot for employees of the Venice Pumping Plant (VPP). A portion of the Site will incorporate Open Space, as required by the Venice Specific Plan, which will include landscaped areas open to public access. Proposed improvements include a total of eight parking spaces; one of which will be American with Disabilities Act accessible and one will be reserved for temporary bike parking.

HOW YOU CAN PARTICIPATE:

Please review the draft RAW and submit comments during the 30-day public comment period. The 30-day public comment period begins February 10, 2021 and ends March 11, 2021. Please submit comments **no later than 11:59 pm on March 11, 2021** and send to: **Viktoriya Anashkina, DTSC Project Manager**, 9211 Oakdale Avenue, Chatsworth, CA 91311, or to her e-mail address at: **Viktoriya.Anashkina@dtsc.ca.gov**. A copy of the draft RAW is available for public review electronically at: https://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60003054 , and at the following Information Repositories:

DTSC Chatsworth Regional Records Office (By appointment only)
9211 Oakdale Ave., Chatsworth, CA 91311, Phone: (818) 717-6521

Who to contact at DTSC for more information:

Viktoriya Anashkina
Project Manager
(818) 717-6549
Viktoriya.Anashkina@dtsc.ca.gov

Elsa Lopez
Public Participation Specialist
(818) 717-6566
Elsa.Lopez@dtsc.ca.gov

Appendix E – Public Notice

Department of Toxic Substances Control **February 2021**

Public Notice

The mission of DTSC is to protect California's people and environment from harmful effects of toxic substances by restoring contaminated resources, enforcing hazardous waste laws, reducing hazardous waste generation, and encouraging the manufacture of chemically safer products.

VENICE AUXILIARY PUMPING PLANT
DRAFT REMEDIAL ACTION WORKPLAN (RAW)
128 HURRICANE STREET, MARINA DEL REY, CALIFORNIA, 90292
30-DAY PUBLIC COMMENT PERIOD: FEBRUARY 10, 2021 TO MARCH 11, 2021

Para información español contacte a Elsa Lopez (818) 717-6566

WHAT IS BEING PROPOSED? The Department of Toxic Substances Control (DTSC) is announcing a public comment period for the Venice Auxiliary Pumping Plant Draft Remedial Action Workplan (RAW). DTSC will be accepting comments on the RAW that proposes the cleanup of soil contaminated with petroleum hydrocarbons from the property located at 128 Hurricane Street, Marina Del Rey.

HOW YOU CAN PARTICIPATE: Please review the draft RAW and submit comments during the 30-day public comment period. The 30-day public comment period begins February 10, 2021 and ends March 11, 2021. Please submit comments **no later than 11:59 pm on March 11, 2021** and send to: **Viktoriya Anashkina, DTSC Project Manager,** 9211 Oakdale Avenue, Chatsworth, CA 91311, or to her e-mail address at: **Viktoriya.Anashkina@dtsc.ca.gov.** A copy of the draft RAW is available for public review electronically at: https://www.envirostor.dtsc.ca.gov/public/profile_report.asp?global_id=60003054, and at the following Information Repositories:

DTSC Regional Records Office
(By appointment only)
9211 Oakdale Ave., Chatsworth, CA 91311
Phone: (818) 717-6521

CONTACT INFORMATION: If you have any questions or concerns, please contact:

Viktoriya Anashkina
Project Manager
(818) 717-6549
Viktoriya.Anashkina@dtsc.ca.gov

Elsa Lopez
Public Participation Specialist
(818) 717-6566
Elsa.Lopez@dtsc.ca.gov

Hearing Impaired Individuals may use the California Relay Service at 711 or 800-855-7100 (TDD).

Appendix F – CEQA Documents

CALIFORNIA ENVIRONMENTAL QUALITY ACT
STATEMENT OF FINDINGS

The Department of Toxic Substances Control (DTSC) has issued Findings for this project pursuant to the California Environmental Quality Act (CEQA; California Public Resources Code, Division 13, Section 21081) and implementing Guidelines (California Code of Regulations, Title 14, Division 6, Chapter 3, Sections 15091 et seq.)

A. PROJECT SUBJECT TO DTSC APPROVAL

PROJECT TITLE: Removal Action Workplan for Venice Auxiliary Pumping Plant		SITE CODING:
PROJECT ADDRESS: 128 Hurricane Street	CITY: Marina Del Rey	COUNTY: Los Angeles
PROJECT SPONSOR: City of Los Angeles	CONTACT: Jan Green Rebstock	PHONE/ EMAIL: jan.green.rebstock@lacity.org (213) 485-5671

Approval Action Under Consideration by DTSC:

☒ Removal Action Workplan ☐ Interim Removal ☐ Initial Permit Issuance ☐ Permit Re-Issuance
☐ Corrective Measure Study/Statement of Basis ☐ Permit Modification ☐ Closure Plan
☐ Remedial Action Plan ☐ Regulations
☐ Other (specify):

STATUTORY AUTHORITY:

☐ California H&SC, Chap. 6.5 ☒ California H&SC, Chap. 6.8 ☐ Other (specify):

PROJECT DESCRIPTION: The proposed project activities involve excavation, removal, and offsite disposal of approximately 260 cubic yards (cy) of lead and hydrocarbon-contaminated soil. Project activities would be accomplished through approval of a Removal Action Workplan (RAW) for lead and hydrocarbon-impacted soils at 128 Hurricane Street, Marina Del Rey, California (Site).

Background: The Site is an approximately 4,223 square-foot vacant dirt lot that was recently used for the storage of vehicles and other miscellaneous items during various public construction projects. The Site has been a vacant dirt lot without developed structures since 1928. The Site is bordered to the north and west by residences; to the east by the City of Los Angeles Department of Public Works Venice Pumping Plant, and to the south by a walking trail and Ballona Lagoon Grand Canal. The area surrounding the Site was developed with oil production facilities from at least 1938 through 1952, and with residential properties since at least 1963. The Venice Pumping Plant appeared east of the Site from at least 1963. Two electrical cabinets/concrete vaults were present in the southern portion of the Site, which were later removed by the City of Los Angeles.

Soil samples collected during a 2018 investigation revealed the presence of lead and total petroleum hydrocarbons (TPH; primarily weathered diesel and oil fractions). Lead concentrations ranged from 3.4 milligrams per kilogram (mg/kg) to 160 mg/kg. TPH as diesel (TPH-d) concentrations ranged from 6.4 mg/kg to 4,600 mg/kg.

Project Activities: Excavation of approximately 260 cy of soil with lead and TPH concentrations above residential screening levels was selected as the removal action. Excavation of soil exceeding residential screening levels will be used for determining extent of the soil removal. Three areas of excavation were identified and are estimated to have approximately 160 cy (215 tons) of impacted soil. Excavation also includes a contingency of an additional 100 cy (135 tons) of impacted soil that could be removed and will be determined during soil confirmation. The total maximum amount of impacted soil to be removed is estimated to be 260 cy (350 tons). A total of 37 truck trips occurring over 2 weeks will be required for excavating and transporting the contaminated soil.

Specific project activities consist of the following:

- Breaking up and removal of buried concrete and wood/construction debris, as well as clearing any existing vegetation (e.g., trees, plants);
- Excavating and stockpiling approximately 260 cy of impacted soil from three excavation areas (depth from 1 to 10 feet below ground surface (bgs));

- Conducting confirmation soil sampling to verify the efficacy of the remedial excavation activities and to verify that soils left in place comply with the conditions necessary for case closure;
- Monitoring ambient particulate matter (PM_{10}) on the Site;
- Implementing dust control measures (e.g., use of water as a suppressant, sheeting beneath and above soil stockpiles, real-time dust monitor, fence with plastic sheets around the property line), as needed;
- Providing field-based notifications to the South Coast Air Quality Management District (SCAQMD), as required;
- Transporting the stockpiled soil to an appropriately licensed facility; and
- Importing 260 cy of clean certified fill for use as backfill in the excavation.

DTSC utilized information and analysis in the Venice Auxiliary Pumping Plant Draft Environmental Impact Report (DEIR) to support a final determination about the type of environmental document required to be prepared for the proposed Removal Action Workplan for Venice Auxiliary Pumping Plant as provided by Sections 15162, 15163, and 15164 of the CEQA Guidelines. Specifically, the DEIR analyzed potential impacts related to contaminated soils in Section 3.5 (Geology and Soils) and potential impacts related to grading and construction in Section 3.2 (Air Quality), Section 3.4 (Cultural Resources), Section 3.6 (Greenhouse Gases), Section 3.7 (Hydrology), Section 3.9 (Noise and Vibration), and Section 3.10 (Transportation).

B. LEAD AGENCY ENVIRONMENTAL DOCUMENT REVIEWED

Lead Agency: City of Los Angeles
Lead Agency's Environmental Document: Venice Auxiliary Pumping Plant Draft Environmental Impact Report
Date Certified: August 9, 2017
State Clearinghouse Number: 2015111038

C. STATEMENT OF FINDINGS AND FACTS FOR ADEQUACY OF LEAD AGENCY ENVIRONMENTAL DOCUMENT

Using its independent judgment, DTSC makes the following findings:

☒ The Lead Agency Final Environmental Document includes a description of the Project now before DTSC for decision

☒ The Lead Agency Final Environmental Document adequately analyzed impacts associated with the Project before DTSC for decision.

☒ DTSC concurs with the findings made by the Lead Agency Final Environmental Document relating to the Project before DTSC for decision.

☒ Mitigation measures are included in the Lead Agency Final Environmental Document for the following resources that would potentially be affected by the DTSC project.

☐ Aesthetics	Mitigation Measure: None
☐ Agricultural Resources	Mitigation Measure: None
☒ Air Quality	Mitigation Measure: AQ-1 (refer to Draft Environmental Impact Report (October 2016), see Attachment A)
☐ Agricultural Resources	Mitigation Measure: None
☐ Biological Resources	Mitigation Measure: None

☒ Cultural Resources	Mitigation Measure: CUL-1 (refer to Draft Environmental Impact Report (October 2016), see Attachment A)
☐ Energy	Mitigation Measure: None
☒ Geology / Soils	Mitigation Measure: HAZ-1a (refer to Draft Environmental Impact Report (October 2016), see Attachment A)
☐ Greenhouse Gas Emissions	Mitigation Measure: None
☐ Hazards / Hazardous Materials	Mitigation Measure: None
☐ Hydrology / Water Quality	Mitigation Measure: None
☐ Land Use / Planning	Mitigation Measure: None
☐ Mineral Resources	Mitigation Measure: None
☒ Noise	Mitigation Measure: NOI-1 and NOI-2 (refer to Draft Environmental Impact Report (October 2016), see Attachment A)
☐ Population / Housing	Mitigation Measure: None
☐ Public Services	Mitigation Measure: None
☐ Recreation	Mitigation Measure: None
☒ Transportation / Traffic	Mitigation Measure: TRANS-1 and TRANS-2 (refer to Draft Environmental Impact Report (October 2016), see Attachment A)
☐ Tribal Cultural Resources	Mitigation Measure: None
☐ Utilities / Service Systems	Mitigation Measure: None
☐ Wildfire	Mitigation Measure: None

☒ Mitigation measures identified in the Lead Agency Final Environmental Document have been adopted by DTSC for this Project and will be implemented to avoid, reduce, or substantially lessen the project impacts. No additional mitigation measures are necessary, and no additional mitigation monitoring plan is required pursuant to CEQA.

For each significant environmental effect identified for the Project:

☒ Changes or alterations have been required in, or incorporated into, the Project which avoid or substantially lessen the significant environmental effects as identified in the Lead Agency Final Environmental Document.

☒ Such changes or alterations are within the responsibility and jurisdiction of the City of Fountain Valley not DTSC.

☒ Such changes have been adopted by this public agency or can and should be adopted by this public agency.

☐ Mitigation measures included in the Lead Agency Final Environmental Document are infeasible, and therefore, will not be incorporated into the DTSC Project for the following reasons: N/A

BASED ON THE ABOVE FINDINGS, DTSC CONCLUDES:

☒ The proposed Project will not result in significant and unavoidable effects to the environment.

☐ The proposed Project will result in significant and unavoidable effects to the following environmental resources:

☐ Air Quality
☐ Agricultural Resources
☐ Mineral Resources
☐ Noise

☐ Biological Resources	☐ Population/Housing
☐ Cultural Resources	☐ Public Services
☐ Energy	☐ Recreation
☐ Geology/ Soils	☐ Transportation/Traffic
☐ Greenhouse Gas Emissions	☐ Tribal Cultural Resources
☐ Hazards/Hazardous Materials	☐ Utilities/ Service Systems
☐ Hydrology/ Water Quality	☐ Wildfire

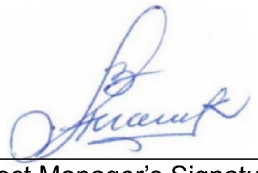
Impacts to these resources would remain significant even after applying mitigation measures described in the Lead Agency Final Environmental Document, or there is no feasible mitigation available.

In accordance with Cal. Code of Regs., title 14, section 15093, a Statement of Overriding Considerations was adopted by the Lead Agency for these resources. DTSC adopts a Statement of Overriding Considerations for these resources having determined that the DTSC Project benefits outweigh the significant environmental effects for the following reasons: The DTSC remedial actions reduce the exposure of contaminated soil, soil gas, and groundwater in order to render it safe for Site occupants. The DTSC remedial project also serves to protect human health and the environment, which are DTSC's responsibilities under the California Health and Safety Code.

☒ None of the conditions requiring a subsequent EIR or Negative Declaration pursuant to Cal. Code Regs., tit. 14 Section 15162 exist.

☒ In accordance with Cal. Code of Regs., title 14, section 15093, a Notice of Determination indicating the results of said Findings will be filed with the Governor's Office of Planning and Research / State Clearinghouse.

D. CERTIFICATION



Project Manager's Signature		**03/16/2021** Date
Viktoriya Anashkina	Environmental Scientist	818-717-6549
Project Manager's Name	Title	Phone #



Branch Chief's Signature		03/23/2021 Date
Haissam Salloum, P.E.	Branch Chief	818-717-6538
Acting Branch Chief's Name	Branch Chief	Phone #

Attachment A

The following mitigation measures are included in the Lead Agency Final Environmental Document would potentially be affected by the DTSC project.

AQ-1: Tier 3 construction equipment.
All off-road diesel-powered construction equipment greater than 50 horsepower will meet Tier 3 emission standards. All construction equipment will be outfitted with ARB best available control technology devices. Any emissions-control device used by the contractor will achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by ARB regulations. A copy of each unit's certified tier specification, best available control technology documentation, and ARB or SCAQMD operating permit will be provided at the time of mobilization of each applicable unit of equipment.

CUL-1: Unanticipated Archaeological and/or Tribal Cultural Resource Discoveries
In the unlikely event that any prehistoric artifact of historic period materials or bone, shell, or nonnative stone is encountered during construction, work shall be immediately stopped, the area secured, and work relocated to another area until the found materials can be assessed by a qualified archaeologist. Examples of such cultural materials might include historical trash pits containing bottles and/or ceramics; or structural remains or concentrations of grinding stone tools such as mortars, bowls, pestles, and manos; chipped stone tools such as projectile points or choppers; and flakes of stone not consistent with the immediate geology such as obsidian or fused shale. If the Archeologist determines that an artifact may qualify as a tribal cultural resource, a Native American monitor shall be consulted. The contractor shall stop construction within 30 feet of the exposure of these finds until a qualified archaeologist can be retained to evaluate the find (see 36 CFR 800.11.1, 14 CCR 15064.5(f) and PRC § 21084.3(b)). If the resources are found to be significant, they shall be avoided or impacts shall be mitigated consistent with Section 106, State Historic Preservation Officer Guidelines, and/or Assembly Bill 52.

HAZ-1a: Soil and Soil Vapor Subsurface Investigation.
Prior to construction, a soil and soil vapor subsurface investigation shall be conducted by a qualified environmental consultant specializing in the identification and handling of hazardous materials. The subsurface investigation may include, but would not be limited to:

- A scope of work consisting of Pre-Field Activities, such as preparation of a Health and Safety Plan (HASP), determining and marking sampling/boring locations and obtaining utility clearance, and Field Activities, such as identifying appropriate sampling procedures, health and safety measures, chemical testing methods, and quality assurance/quality control (QA/QC) procedures in accordance with the ASTM Standard.
- Necessary permits for boring advancement.
- A Sampling and Analysis Plan (SAP) in accordance with the scope of work.
- Laboratory analyses conducted by a State-certified laboratory.
- Disposal process including transport by a State-certified hazardous material hauler to a State-certified disposal or recycling facility licensed to accept and treat hazardous waste.

NOI-1: Prepare and Implement a Construction Noise Control Plan.
To reduce the significant construction noise impacts, the Los Angeles Bureau of Engineering (LABOE) and Contractor shall develop a noise control plan that includes the implementation of the following noise reduction measures during construction.
a) Construction Hours - The operation of construction equipment shall occur only between 8:00 a.m. to 6:00 p.m. Monday through Saturdays. No construction activity shall occur on national holidays or at any time on Sundays. Access to the construction site may occur prior to construction hours for the purpose of set up, conducting safety meetings, etc. The use of the pile driver, grader and jackhammer construction equipment shall be limited to the hours of 9 a.m. to 3:30 p.m. However, specific work related to the VAPP connection the manifold will be exempt from these hours, along with any emergency conditions or unforeseen work that would require the use of this equipment to complete a specific task in one continuous work event. Haul trucks can only access the site through local neighborhood streets from 9 a.m. to 4 p.m. Construction personnel shall not be permitted on the Project Site (including laydown and storage areas) outside of the hours of 7:30 am to 6:00 pm. Material or equipment deliveries and collections shall not occur outside the hours of 8:00 am to 6:00 pm. In addition, no construction worker parking would be allowed along Hurricane Street or on adjacent local streets. Construction workers shall park offsite and arrive by shuttle to the construction site, as arranged by the construction contractor.
b) Piles - All piles, including sheeting, shall be installed and extracted using vibration- and percussive-free methods.
c) Construction Mitigation Coordinator – The City and/or its Contractor shall maintain good communication with the surrounding community regarding the schedule, duration, and progress of construction activities. Residents at properties within 500 feet of construction activities shall be notified 72 hours in advance of the planned activities prior to the start of work. The notification shall advise that there will be loud noise associated with the construction, and shall state the date,

time, and expected duration of the planned activities. The notification shall provide a telephone contact number for affected parties to ask questions or share any concerns. A construction mitigation coordinator for the Project will be required to maintain a call log, so that the City can track resolution and nature of any complaints. These complaints may range from noise, vibration, dust, traffic, etc. The call log shall contain the name and address (if available) of the person making the complaint, i the date and time of the call, and any details regarding the nature of the complaint related to noise, vibration, dust, parking, traffic, etc. related to construction activities. The call log shall be provided to the Public Works Department (Public Affairs Office, LA Sanitation, LABOE) upon request. Residents shall be informed of the construction mitigation coordinator and on-site construction supervisor contact information by posting of the phone number on the construction site. Signage should be visible from Canal Court, the Esplanade, Via Dolce, and Hurricane Street.

d) Noise barriers - To the extent practicable, temporary noise barriers with a minimum height of 20 feet shall be employed around the Project Site. Openings in the barriers shall be kept to the minimum necessary for access of vehicles, equipment, and construction material. These barriers shall be constructed as follows.

From commercially available acoustical panels lined with sound-absorbing material (the sound-absorptive faces of the panels shall face the construction equipment); or,

From acoustical blankets hung over or from a supporting frame. The blankets shall provide a minimum sound transmission class rating of 28 and a minimum noise-reduction coefficient of 0.80 and shall be firmly secured to the framework with the sound-absorptive side of the blankets oriented toward the construction equipment. The blankets shall be overlapped by at least 6 inches at seams and taped so that no gaps exist. The largest blankets available shall be used in order to minimize the number of seams. The blankets shall be draped to the ground to eliminate any gaps at the base of the barrier.

e) For noise-generating equipment that cannot be shielded by site perimeter barriers, localized noise barriers or enclosures shall be employed wherever feasible. The height and location of these barriers/enclosures shall be designed to block the line of sight between the equipment and the surrounding homes.

f) Noise Monitoring Plan - LABOE/Contractor shall retain the services of an acoustical/noise consultant to prepare a Noise Monitoring Plan. The plan shall be site-specific for monitoring and reporting construction noise levels in the community to evaluate the Contractor's performance. Based on details of the Contractor's specific construction schedule, the plan shall develop construction noise goals, in terms of 1-hour Leq, that should be achieved for each phase of construction with the inclusion of feasible and practicable noise abatement measures. If noise monitoring indicates the applicable noise goals have been exceeded, steps shall be taken to promptly implement any additional effective abatement measures that are feasible and/or practicable.

g) Quiet construction equipment - To the fullest extent practicable, the quietest available type of construction equipment shall be used. Newer equipment is generally quieter than older equipment. The use of electric-powered equipment is typically quieter than diesel- or gasoline-powered equipment, and hydraulic-powered equipment is typically quieter than pneumatic-powered equipment.

h) Construction equipment noise compliance - All construction equipment used on the proposed Project that is regulated for noise output by a local, state, or federal agency shall comply with such regulation while in the course of Project activity and use on site.

i) Proper maintenance - All construction equipment shall be properly maintained, as poor maintenance of equipment may cause excessive noise levels.

j) Equipment mufflers, shrouds and shields - All construction equipment shall be equipped with properly operating and maintained mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features that meet or exceed original factory specifications.

k) No idling - All construction equipment shall be operated only when necessary, and shall be switched off when not in use. Idling inactive construction equipment for prolonged periods (i.e., more than 2 minutes) shall not be permitted.

l) Minimum use of audible safety warnings - The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.

m) NoProject-relatedpublicaddressormusicsystemshallbeaudibleatanyadjacent residential receptor.

n) Construction work training - Construction employees shall be trained in the proper operation and use of the equipment. Careless or improper operation or inappropriate use of equipment can increase noise levels. Poor loading, unloading, excavation, and hauling techniques are examples of how a lack of adequate guidance and training may lead to increased noise levels.

o) Generator and compressor placement - Stationary noise sources such as generators and compressors shall be positioned as far as possible from noise sensitive areas.

p) Construction equipment storage – Construction equipment shall be stored on the Project Site or designated laydown areas while in use, to the extent feasible. This will eliminate noise associated with repeated transportation of the equipment to and from the site.

NOI-2: Implement ground-borne vibration control measures to reduce construction- generated vibration.
To reduce the significant construction vibration impacts, LABOE/Contractor shall implement the following vibration reduction measures during project construction:
All piles, including sheeting, shall be installed and extracted using vibration- and percussive-free methods.
LABOE and/or Contractor shall retain a qualified structural or geotechnical engineer to conduct pre-construction surveys of adjacent neighboring structures (including photographing and/or videotaping) to document existing building conditions for future comparison if any vibration- related damage is suspected or results from construction-related activities.
If considered appropriate by the structural/geotechnical engineer, monitoring shall be conducted during construction to check for vibration-related damage from equipment during its use. Such monitoring may include vibration measurements obtained inside or outside of the buildings, or other tests and observations deemed necessary.

TRANS-1: Construction Worker Shuttles
Construction workers would park at an off-site location and be shuttled to and from the Project Site each workday on 10 to 15-passenger shuttles or vans. While no specific off-site location has been identified at this time, it would likely lie within five miles of the Project Site. The selected contractor would be required to identify and secure a suitable location.

TRANS-2. Coordination with Emergency Service Providers
To minimize impacts on emergency access to the site during construction, the contractor, on behalf of the LABOE, shall coordinate with emergency service providers (police, fire, ambulance and paramedic services), prior to initiating construction, to provide advance notice of any lane closures, construction hours, and changes to local access and to identify alternative routes where appropriate.

CALIFORNIA ENVIRONMENTAL QUALITY ACT
NOTICE OF DETERMINATION

To: Office of Planning and Research
State Clearinghouse
P.O. Box 3044, 1400 Tenth Street, Room 212
Sacramento, CA 95812-3044

From: Department of Toxic Substances Control
Site Mitigation and Restoration Program
9211 Oakdale Avenue
Chatsworth, CA 91311

Subject: FILING OF NOTICE OF DETERMINATION IN COMPLIANCE WITH SECTION 21108 OF THE PUBLIC RESOURCES CODE

Project Title: Removal Action Workplan for Venice Auxiliary Pumping Plant

State Clearinghouse Number: 2015111038

Project Location: 128 Hurricane Street, Marina Del Rey

County: Los Angeles

Project Applicant: City of Los Angeles

Project Description: The proposed project activities involve excavation, removal, and offsite disposal of approximately 260 cubic yards (cy) of lead and hydrocarbon-contaminated soil. Project activities would be accomplished through approval of a Removal Action Workplan (RAW) for lead and hydrocarbon-impacted soils at 128 Hurricane Street, Marina Del Rey, California (Site).

Excavation of approximately 260 cy of soil with lead and TPH concentrations above residential screening levels was selected as the removal action. Excavation of soil exceeding residential screening levels will be used for determining extent of the soil removal. Three areas of excavation were identified and are estimated to have approximately 160 cy (215 tons) of impacted soil. Excavation also includes a contingency of an additional 100 cy (135 tons) of impacted soil that could be removed and will be determined during soil confirmation. The total maximum amount of impacted soil to be removed is estimated to be 260 cy (350 tons). A total of 37 truck trips occurring over 2 weeks will be required for excavating and transporting the contaminated soil.

Specific project activities consist of the following:

- Breaking up and removal of buried concrete and wood/construction debris, as well as clearing any existing vegetation (e.g., trees, plants);
- Excavating and stockpiling approximately 260 cy of impacted soil from three excavation areas (depth from 1 to 10 feet below ground surface (bgs));
- Conducting confirmation soil sampling to verify the efficacy of the remedial excavation activities and to verify that soils left in place comply with the conditions necessary for case closure;
- Monitoring ambient particulate matter (PM_{10}) on the Site;
- Implementing dust control measures (e.g., use of water as a suppressant, sheeting beneath and above soil stockpiles, real-time dust monitor, fence with plastic sheets around the property line), as needed;
- Providing field-based notifications to the South Coast Air Quality Management District (SCAQMD), as required;
- Transporting the stockpiled soil to an appropriately licensed facility; and
- Importing 260 cy of clean certified fill for use as backfill in the excavation.

The Department of Toxic Substances Control (DTSC) utilized information and analysis in the Venice Auxiliary Pumping Plant Draft Environmental Impact Report (DEIR) to support a final determination about the type of environmental document required to be prepared for the Removal Action Workplan for Venice Auxiliary Pumping Plant Project as provided by Sections 15162, 15163, and 15164 of the CEQA Guidelines. The DEIR was adopted by the City of Los Angeles on August 9, 2017. The DEIR evaluated the potential environmental effects of the RAW, specifically the cleanup and haul away of contaminated soils associated with the proposed remediation action of the Site.

As Responsible Agency under the California Environmental Quality Act (CEQA), DTSC approved the above-described project on March 19, 2021 and has made the following determinations:

1. The project will not have a significant effect on the environment.
2. A Mitigated Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures were made a condition of project approval.

4. A Statement of Overriding Considerations was not adopted for this project.
5. Findings were made pursuant to the provisions of CEQA.

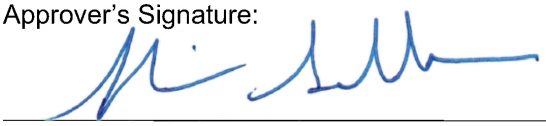
The administrative record for this project is available to the public by appointment at the following location:

Department of Toxic Substances Control
Site Mitigation and Restoration Program
9211 Oakdale Avenue
Chatsworth, CA 91311

Additional project information is available on EnviroStor:
www.envirostor.dtsc.ca.gov/public/profile_report?global_id=60003054

Contact Person	Contact Title	Phone Number
Viktoriya Anashkina	Environmental Scientist	(818) 717-6549

Approver's Signature:



Date:

March 19, 2021

Approver's Name	Approver's Title	Approver's Phone Number
Haissam Y. Salloum, P.E.	Branch Chief	818-717-6538

TO BE COMPLETED BY OPR ONLY

Date Received for Filing and Posting at OPR:

Appendix G – Administrative Records

Department of Toxic Substances Control

Jared Blumenfeld
Secretary for
Environmental Protection

Meredith Williams, Ph.D., Director
9211 Oakdale Avenue
Chatsworth, California 91311

Gavin Newsom
Governor

Sent Via Email Only

March 19, 2021

Mr. Sylvester Kueh
City of Los Angeles
Bureau of Engineering
1149 South Broadway
Los Angeles, California 90015

APPROVAL OF REMOVAL ACTION WORK PLAN FOR VENICE AUXILIARY PUMPING PLANT, 128 HURRICANE STREET, MARINA DEL REY, CALIFORNIA 90292 (SITE CODE: 301916)

Dear Mr. Kueh:

The Department of Toxic Substances Control (DTSC) hereby approves the Removal Action Work Plan (RAW) for the subject property (Site) for implementation. The RAW was reviewed pursuant to the Standard Voluntary Agreement (Docket No. HSA-FY20/21-058) between DTSC and the City of Los Angeles Bureau of Engineering.

The Site is approximately 4,230 square feet and is identified by Los Angeles County Assessor Identification Number 4225-010-016. The Site is currently a vacant dirt lot and was recently used for storage of vehicles and miscellaneous items during various public construction projects. The City plans to construct an asphalt parking lot with a picnic/green area for the surrounding community use.

The RAW proposes excavation and off-site disposal of soil contaminated with petroleum hydrocarbons and metals. DTSC held a public comment period from February 10, 2021 to March 11, 2021. No comments were received on the proposed RAW. DTSC will file a California Environmental Quality Act (CEQA) Notice of Determination and a Statement of Findings with the State Clearinghouse shortly after this RAW approval.

Please submit a final version of the RAW that includes the Community Update, the Public Notice, CEQA documents and the administrative record for this Site as appendices to the document.

Please notify DTSC of the field schedule seven (7) days prior to start of fieldwork. If you have any questions regarding the project, please contact Ms. Viktoriya Anashkina, Project Manager at (818) 717-6549 or email at Viktoriya.Anashkina@dtsc.ca.gov.

Sincerely,

Haissam Y. Salloum, P.E.
Branch Chief
Site Mitigation and Restoration Program - Chatsworth

cc: Ms. Viktoriya Anashkina (via e-mail)
Project Manager
Site Mitigation and Restoration Program
Department of Toxic Substances Control
Chatsworth, California 91311
Viktoriya.Anashkina@dtsc.ca.gov

Jose Diaz (via e-mail)
Unit Chief
Site Mitigation and Restoration Program
Department of Toxic Substances Control
Chatsworth, California 91311
Jose.Diaz@dtsc.ca.gov

William Jones (via e-mail)
Environmental Supervisor II
City of Los Angeles Department of Public Works
Bureau of Engineering, EMG
1149 South Broadway, 9th Floor
Los Angeles, California 90015
william.jones@lacity.org

Eileen Schoetzow (via e-mail)
Environmental Supervisor I
City of Los Angeles Department of Public Works
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1149 South Broadway, 9th Floor
Los Angeles, California 90015
eileen.schoetzow@lacity.org

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From: **Anashkina, Viktoriya@DTSC** <Viktoriya.Anashkina@dtsc.ca.gov>
Date: Tue, Mar 23, 2021 at 2:46 PM
Subject: Removal Action Workplan Approval: 128 Hurricane Street, Marina Del Rey, CA
To: Sylvester Kueh <Sylvester.Kueh@lacity.org>
Cc: Diaz, Jose@DTSC <Jose.Diaz@dtsc.ca.gov>, William Jones <william.jones@lacity.org>, Eileen Schoetzow <eileen.schoetzow@lacity.org>

Hello Sylvester

DTSC has reviewed the Removal Action Workplan (RAW) prepared by AECOM for the above-referenced site, dated July 17, 2020. The RAW is hereby approved – please find the official letter and additional documentation attached. Furthermore, please review DTSC comments regarding the RAW report that should be addressed during the implementation/in the Removal Action Completion Report.

Please let me know if you have any questions or concerns.

Thank you,

Viktoriya Anashkina
Environmental Scientist
Department of Toxic Substances Control
9211 Oakdale Avenue
Chatsworth, CA 91311
Office: (818) 717-6549

Viktoriya.Anashkina@dtsc.ca.gov

Department of Toxic Substances Control

Jared Blumenfeld
Secretary for
Environmental Protection

Meredith Williams, Ph.D.
Director
5796 Corporate Avenue
Cypress, California 90630

Gavin Newsom
Governor

MEMORANDUM

TO: Viktoriya Anashkina
Project Manager
Site Mitigation and Restoration Program
Chatsworth, California

FROM: Efrem A.H. Neuwirth, Ph.D., DABT
Staff Toxicologist
Human and Ecological Risk Office

DATE: **Draft** January 13, 2021

SUBJECT: "Amendment to Phase II Environmental Site Assessment" and " Remedial Action Plan Including Soil Removal Workplan", 128 Hurricane Street, Venice, California 90292

Activity Code: 12018 Site Code: 301916-11 MPC: SI-CR and PS-R

The Human and Ecological Risk Office (HERO) reviewed the revised report titled "Amendment to Phase II Environmental Site Assessment" (Revised Report) and the revised workplan titled "Remedial Action Plan Including Soil Removal Workplan" (Revised RAP) for the property at 128 Hurricane Street in Venice, CA (DTSC Site Code 301916-11, MPC's SI-CR and PS-R).

Both documents were prepared by AECOM for the City of Los Angeles, Bureau of Engineering, Department of Public Works. Despite an address of Venice, California, the property is located in the adjacent unincorporated community of Marina Del Rey. The Revised Report is dated April 30, 2020, and the Revised RAP is dated July 27, 2020. These are the dates of the original (unrevised) Report and RAP which were previously reviewed by HERO and commented upon in a memorandum dated December 2, 2020. The dates were not updated in the Revised Report and Workplan.

Printed on Recycled Paper

Scope of Review

The Revised Report and Revised RAP were only reviewed for the changes which were previously recommended, with emphasis on those aspects of the report which may influence assessment of human and ecological health. Comments on the document are described below.

Comments

1) In response to HERO Specific Comment 1, some risk based screening levels (RBSLs) were revised to reflect the most recent versions of DTSC's Human Health Risk Assessment (HHRA) Note Number 3, US EPA Regional Screening Levels (RSLs) or San Francisco Regional Water Quality Control Board (SFRWQCB) Environmental Screening Levels (ESLs). The most important example is the Total Petroleum Hydrocarbons (TPH) in the diesel range which is the primary chemical of potential concern identified in soil that is the basis for the excavation planned in the Revised RAP. However, HERO notes that other RBSLs were not updated (as one example, DDT), or were update using a non-human health risk based screening level (ESLs for TPH in the gasoline range and oil range). None of the chemicals utilizing out of date screening levels are above their residential human health RBSLs. In regards to the TPH ESLs, the ESL of 100 mg/kg for the TPH-gasoline is for nuisance odors while the residential human health risk ESL is 430 mg/kg. The TPH-oil ESL of 1600 mg/kg is for terrestrial habitat while the residential human health risk ESL is 12000 mg/kg. It is acceptable to utilize these lower screening levels for the TPH-gasoline and TPH-oil or to modify them again to reflect the human health residential ESLs which are recommended by HERO. The TPH fractions are collocated and remediation of the TPH-diesel will likely lead to removal of all the TPH.

2) HERO recommended in Specific Comment 4 adding RBSLs for the direct contact with chemicals in groundwater where there is no Maximum Contaminant Level (MCL). The changes made to the groundwater tables were to rename the column of concentrations from "gross contamination ESL" to direct contact ESLs". The tapwater RBSLs provided for the metals however are still the same gross contamination ESLs rather the tapwater RBSLs recommended in DTSC's HHRA Note Number 3 or as appropriate the US EPA RSLs. The ESLs for the TPH-diesel and oil range provided were an aquatic habitat risk based goal for the diesel (640 μg/L) and for the oil the source of the screening level is unclear (1600 μg/L). HERO recommends correcting the tables to provide the human health RBSLs for metals and TPH in groundwater as was intended from HERO's Specific Comment 4. The direct exposure (tapwater) human health ESL for the TPH-

diesel is 200 μg/L. The ESL for the TPH- hydrocarbon oxidation products (HOPs) which HERO recommended using for the insoluble oil range fraction is 410 μg/L. The source of the screening levels should also be updated in the table footnotes as appropriate.

HERO is also attaching the most recent SFRWQCB ESL tables to this memorandum since it is not currently available on the SFRWQCB web site.

HERO notes that the recommendations made in this memorandum are site specific and should not be construed as a policy decision applicable to other sites. If you have additional questions, please contact me at (714) 484-5421 or efrem.neuwirth@dtsc.ca.gov.

Review/concur:

Shukla Roy-Semmen, Ph.D.
Senior Toxicologist
Southern California Unit Chief
Human and Ecological Risk Office

Department of Toxic Substances Control

Jared Blumenfeld
Secretary for
Environmental Protection

Meredith Williams, Ph.D., Director
9211 Oakdale Avenue
Chatsworth, California 91311

Gavin Newsom
Governor

M E M O R A N D U M

TO: Ms. Viktoriya Anashkina
Project Manager
Site Mitigation and Restoration Program – Chatsworth Office

FROM: Maia Bachman, P.G.,
Engineering Geologist
Chatsworth Geological Services Unit

PROFESSIONAL GEOLOGIST
MAIA A. BACHMAN
9792
STATE OF CALIFORNIA

DATE: March 4, 2021

SUBJECT: 128 HURRICANE STREET, VENICE (or MARINA DEL REY), REVISED AMENDMENT TO PHASE II ENVIRONMENTAL SITE ASSESSMENT (ESA) REPORT, APRIL 30, 2020 and REMOVAL ACTION WORKPLAN (RAW) (Including Soil Removal Workplan) REPORT, JULY 27, 2020.

PCA: 12018 Site Code: DTSC301916 -11 Work Request #20072322

As requested, the Department of Toxic Substances Control (DTSC) Geological Services Unit (GSU) has reviewed the revised, "Amendment to Phase II Environmental Site Assessment (ESA) Report, April 30, 2020, and Removal Action Workplan, July 20, 2020" (Phase II and RAW, respectively) prepared by AECOM, for the property located at 128 Hurricane Street in Venice (also known as 128 Hurricane Street, Marina del Rey) (Site). The Report was prepared on behalf of the City of Los Angeles Bureau of Engineering (City of LA BOE).

The Phase II and RAW were amended in part to address comments presented in a GSU Memo prepared dated December 7, 2020. Comments in the GSU Memo requested clarification on portions of the sampling procedures and protocol, and requests for clarity on Figures.

Revisions made to the Phase II adequately address many of my comments. GSU had requested language explaining how the conduit portions that extend beyond the excavation extents will be removed and confirmatory sampled. Both Reports state: *"any*

buried concrete pads, debris, and conduit encountered during the shallow soil excavation in the excavation areas, will be delineated within the property boundary, removed, and characterized prior to disposal." This language suggests that the portion of the conduits outside the excavation areas will not be handled in a defined manner. Procedures for managing conduits that extend outside the excavation areas should be described.

While the ESA has been revised, it is not designated as a revised document and it is dated the same as the original document. The ESA title should be updated to indicate that it is a revised document, and to include the revision date. Once these changes are made DTSC GSU recommends accepting the Phase II Report and requesting outstanding comments be addressed in the final amended Removal Action Workplan.

If there are any questions or comments, please call me at (818) 717-6624 or e-mail me at maia.bachman@dtsc.ca.gov.

Reviewed by John Naginis: J.N.

Department of Toxic Substances Control

Meredith Williams, Ph.D., Director
9211 Oakdale Avenue
Chatsworth, California 91311

Jared Blumenfeld
Secretary for
Environmental Protection

Gavin Newsom
Governor

Sent Via E-mail Only

December 8, 2020

Mr. Sylvester Kueh
City of Los Angeles,
Bureau of Engineering
1149 South Broadway,
Los Angeles, CA 90015

SITE CHARACTERIZATION REPORT AND REMEDIAL ACTION WORK PLAN VENICE AUXILIARY PUMPING PLANT, 128 HURRICANE STREET, MARINA DEL REY, CALIFORNIA 90292 (SITE CODE: 301916)

Dear Mr. Kueh:

The Department of Toxic Substances Control (DTSC) has reviewed the Amendment to Phase II Environmental Site Assessment (Report) dated April 30, 2020 and the Remedial Action Plan Including Soil Removal Workplan (RAP) dated July 27, 2020 prepared by Aecom for the subject property (Site). The Report and the RAP were reviewed pursuant to the Standard Voluntary Agreement (Docket No. HSA-FY20/21-058) between DTSC and City of Los Angeles Bureau of Engineering (City).

The Site is approximately 4,230 square feet and is identified by Los Angeles County Assessor Identification Number 4225-010-016. The Site is bordered to the north and west by residences, to the east by the City of Los Angeles Department of Public Works Venice Pumping Plant, and to the south by a waling train and Ballona Lagoon Grand Canal. The Site is currently a vacant dirt lot and was recently used for storage of vehicles and miscellaneous items during various public construction projects.

The lot has had no structures going back to at least 1928. Between approximately 1938 and 1952 the surrounding properties contained oil production facilities. In 1963 the Venice Pumping Plant was constructed. The City plans to construct an asphalt parking lot with a picnic/green area for the surrounding community use.

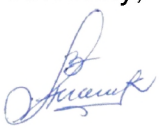
Soil samples were analyzed for total petroleum hydrocarbons (TPH), metals, volatile organic compounds, polycyclic aromatic hydrocarbons, organochlorine pesticides (OCPs), herbicides, and polychlorinated biphenyls. TPH, lead, and some OCPs were

detected above screening levels in soil. TPH and arsenic were detected in groundwater above their respective screening levels or maximum contaminant levels. The Report and RAP propose to clean up the Site soils to meet residential land use.

DTSC hereby approves the Report as presented. Enclosed please find comments requiring responses that should be incorporated into the RAP document. According to estimates included in the RAP, the cost to implement the proposed remedy is less than two million dollars; therefore, the document should be relabeled and presented as Removal Action Workplan (RAW).

Please contact me at (818) 717-6549 or at email Viktoriya.Anashkina@dtsc.ca.gov with any questions.

Sincerely,



Viktoriya Anashkina
Project Manager
Site Mitigation and Restoration Program - Chatsworth

Enclosures (3)

cc: William Jones (via e-mail)
Environmental Supervisor II
City of Los Angeles Department of Public Works
Bureau of Engineering, EMG
1149 South Broadway, 9th Floor
Los Angeles, California 90015
william.jones@lacity.org

Eileen Schoetzow (via e-mail)
Environmental Supervisor I
City of Los Angeles Department of Public Works
Bureau of Engineering, EMG
1149 South Broadway, 9th Floor
Los Angeles, California 90015
eileen.schoetzow@lacity.org

Jose Diaz (via e-mail)
Unit Chief
Site Mitigation and Restoration Program
Department of Toxic Substances Control

Chatsworth, California 91311
Jose.Diaz@dtsc.ca.gov

Department of Toxic Substances Control

Meredith Williams, Ph.D., Director
9211 Oakdale Avenue
Chatsworth, California 91311

Jared Blumenfeld
Secretary for
Environmental Protection

Gavin Newsom
Governor

M E M O R A N D U M

TO: Ms. Viktoriya Anashkina
Project Manager

Brownfields Restoration & School Evaluation Branch
Site Mitigation and Restoration Program – Chatsworth Office

FROM: Maia Bachman, P.G.,
Engineering Geologist
Chatsworth Geological Services Unit

PROFESSIONAL GEOLOGIST
MAIA A. BACHMAN
9792
STATE OF CALIFORNIA

DATE: December 7, 2020

SUBJECT: 128 HURRICANE STREET, VENICE (or MARINA DEL REY), AMENDMENT TO PHASE II ENVIRONMENTAL SITE ASSESSMENT (ESA) REPORT, APRIL 30, 2020 and REMEDIAL ACTION PLAN (RAP) (Including Soil Removal Workplan) REPORT, JULY 27, 2020.

PCA: 12018 Site Code: DTSC301916 -11
Work Request # 20070496 and 20070498

As requested, the Department of Toxic Substances Control (DTSC) Geological Services Unit (GSU) has reviewed the, "Amendment to Phase II Environmental Site Assessment (ESA) Report, April 30, 2020" (Report) prepared by AECOM, for the property located at 128 Hurricane Street in Venice (also known as 128 Hurricane Street, Marina del Rey) (Site). The Report was prepared on behalf of the City of Los Angeles Bureau of Engineering (City of LA BOE).

This Site has been generally vacant, though a historical oil production well is present on the Site. This well, at 5,860 feet below ground surface (bgs), was planned for abandonment in 1932, but the well is still present, and will require re-abandonment. This Site has been used as a storage yard/lay-down yard for various construction projects, as well as for two electrical cabinets/concrete vaults, which were later removed. The previous geotechnical borings found debris/refuse in the top two feet of soil at the Site.

Previous investigations indicate the possible presence of total petroleum hydrocarbon (TPH) ranges due to the oil production well, and the vague historical use for storage. Soil data indicate the presence of total petroleum hydrocarbons, as well as lead, in the subsurface.

Further work includes excavation of the TPH- and lead-impacted soil.

DTSC GSU recommends accepting the Phase II Report and requesting all comments be addressed in an amended Remedial Action Plan.

Comments

Phase II:

1. Page 12, Section 3.3.1 – General Minerals – When discussing the groundwater results, the State Water Resources Control Board's (SWRCB's) Resolution No. 88-63, "Sources of Drinking Water Policy exception for water with high total dissolved solids (TDS)" is used to compare against the groundwater data. Has this area been designated 'MUN' by the SWRCB in the Basin Plan? If so, just being brackish may not be enough to be de-designated. If the water has not been de-designated, then drinking water standards will need to be used.

2. Page 15, Section 5 – Proposed Remedial Excavation – Excavation Area EA-1 – The Report states: *"Part of the excavation may include buried concrete and debris removal."* Will this excavation include the removal of the concrete pad at depth (encountered during the shallow soil investigation)? If not, what is the plan for the concrete at depth? If the concrete will be part of the excavation, it will need to be appropriately characterized for disposal. If it will be abandoned in place, soil samples need to be taken above and below it, as well as concrete chip samples to ensure it is not an environmental hazard. If it is to be left in place, then the full extent of the pad would need to be delineated.

3. Figures – Please show an approximate location of the assumed concrete pad that was encountered during the subsurface investigation.

4. Figures – The subsurface conduits shown on Figures 3 and 4, discovered during the geophysical survey, could be conduits for groundwater and soil vapor migration. The majority of the conduits lie within planned excavation extents. Please discuss how the conduit portions that extend beyond the excavation extents will be removed and confirmatory sampled.

Remedial Action Plan:

1. Page 5, Section 6.2.4.2 – Excavation Area-1 (EA-1) – The Report states: *"Part of the excavation may include buried concrete and debris removal."* Will this excavation include the removal of the concrete pad at depth (encountered during the shallow soil investigation)? If not, what is the plan for the concrete at depth? If the concrete will be part of the excavation, it will need to be appropriately characterized for disposal. If it will be abandoned in place, soil samples need to be taken above and below it, as well as concrete chip samples to ensure it is not an environmental hazard. If it is to be left in place, then the full extent of the pad would need to be delineated.

2. Page 7, Section 6.2.5.2 – Soil Sample Sampling and Analysis – The Report states: *"All soil samples will be collected in eight-ounce jars from the bucket of the excavator."* Confirmation samples should be collected directly from the excavation sidewall or bottom, not from the bucket.

3. Page 8, Section 6.2.8 – Soil Profiling and Disposal – The report states: "*All excavated soils will be stockpiled (each EA will have its own soil stockpile) and will be profiled by analyzing a composite sample prior to disposal."* This language is ambiguous as to how many samples will be collected. One soil waste characterization sample should be collected for approximately every 20 cubic yards of soil.

4. Figures – Please show an approximate location of the assumed concrete pad that was encountered during the subsurface investigation.

If there are any questions or comments, please call me at (818) 717-6624 or e-mail me at maia.bachman@dtsc.ca.gov.

Reviewed by Tanya Brosnan: ___T.B._____

Department of Toxic Substances Control

Jared Blumenfeld
Secretary for
Environmental Protection

Meredith Williams, Ph.D.
Director
5796 Corporate Avenue
Cypress, California 90630

Gavin Newsom
Governor

MEMORANDUM

TO: Viktoriya Anashkina
Project Manager
Site Mitigation and Restoration Program
Chatsworth, California

FROM: Efrem A.H. Neuwirth, Ph.D., DABT
Staff Toxicologist
Human and Ecological Risk Office

DATE: December 2, 20120

SUBJECT: "AMENDMENT TO PHASE II ENVIRONMENTAL SITE ASSESSMENT" AND "REMEDIAL ACTION PLAN INCLUDING SOIL REMOVAL WORKPLAN", 128 HURRICANE STREET, VENICE, CALIFORNIA 90292

Activity Code: 12018 Site Code: 301916-11 MPC: SI-CR and PS-R

The Human and Ecological Risk Office (HERO) reviewed the report titled "Amendment to Phase II Environmental Site Assessment" (Report) and the workplan titled "Remedial Action Plan Including Soil Removal Workplan" (RAP) for the property at 128 Hurricane Street. Despite an address of Venice, California, the property is located in the adjacent unincorporated community of Marina Del Rey. The Report is dated April 30, 2020, and the RAP is dated July 27, 2020. Both documents were prepared by AECOM for the City of Los Angeles, Bureau of Engineering, Department of Public Works.

Background

The Site is on the narrow peninsula between the marina of Marina Del Rey and the Pacific Ocean. The Site is a very small vacant lot (4,230 square feet/0.1 acres) which is intended to be a parking lot for the adjacent Venice Pumping Station with a green area for use by the surrounding community. The lot is also adjacent to residences and a pedestrian pathway adjacent to the Ballona Lagoon. According to the Report, the lot has had no structures going

back to at least 1928. Between approximately 1938 and 1952 the surrounding properties contained oil production facilities. In 1963 the Venice Pumping Plant was constructed. An oil well on the Site was abandoned in 1932, which still needs to be re-evaluated to determine if the well was properly abandoned. Two electric cabinets/concrete vaults were once present on the Site and were removed by the City of Los Angeles (date not provided). No other historical activities or structures are identified in the Report.

Soil has been most extensively sampled and analyzed for lead and total petroleum hydrocarbons (TPH) with carbon chain breakdown. Soil has also been sampled for 9 other metals, VOCs including fuel oxygenates, and limited samples for other chemicals of potential concern including, semi-volatile organic compounds (SVOCs) including the polycyclic aromatic hydrocarbons (PAHs), organochlorine pesticides (OCPs), herbicides, and polychlorinated biphenyls.

Four grab groundwater samples were analyzed for the TPH. One groundwater sample was also analyzed for metals and for VOCs where TPH was present at 3.5 ft bgs. Static groundwater levels were measured at 4-5 ft bgs depending on the four locations. Soil vapor was sampled for methane. Groundwater samples were also sampled for mineral content which is an indicator of whether the groundwater may have beneficial uses.

The chemicals of potential concern identified in soil are the TPH in the diesel range above the San Francisco Regional Water Quality Control Board (SFRWQCB), environmental screening level (ESLs) for TPH in soil. Three sample for lead were also found above residential screening level of 80 mg/kg (maximum detected concentration of 160 mg/kg). The other metals in soil are low in concentrations and are below risk-based concertation or appear consistent with typical background levels (arsenic). OCPs were also detected below risk-based screening levels. Only one OCP (dieldrin) was present in at a level near the cancer risk-based screening level in one of four samples. Other OCPs detected were greater than 10-fold lower than current risk based screening levels.

Low levels of TPH in the diesel and oil ranges were measured in groundwater. VOCs were non-detect. Groundwater concentrations were compared to drinking maximum contaminant limits and SFRWQCB ESL gross contamination levels. Arsenic was present above MCLs.

A comparison with screening levels is the only risk assessment, provided for the Site. The Report and RAW propose cleanup of Site soils to meet residential land use. The RAW targets all soil with diesel range -TPH greater than the 2016 San Francisco Regional Water Quality

Control Board (SFRWQCB), environmental screen level (ESL) of 230 mg/kg, and lead above the DTSC screening level of 80 mg/kg.

Scope of Review

The Report and RAW were reviewed for major scientific and technical deficiencies only, with emphasis on those aspects of the report which may influence assessment of human and ecological health. Comments on the document are described below.

General Comments

1) The Phase I Report (Ninyo & Moore, 2016. Phase I Environmental Site Assessment, 128 Hurricane Street, Venice, California 90292) was not presented to the DTSC for review. HERO defers to the DTSC Project Manager to determine whether the necessary review of the Site history has been performed to ensure the adequate characterization of the Site.

2) HERO defers to the DTSC Project Manager to determine whether the site will be acceptable for unrestricted land uses. Although the RAP proposes to remove contaminated soils to residential risk-based screening levels, groundwater concentrations of chemicals of potential concern were measured above drinking water standards (arsenic) or risk based levels (TPH). According to the Report, the level of dissolved solids present indicates that the water is unlikely to have beneficial uses according to the California State Water Resources Control Board.

Specific Comments

1) Report and RAP: The Report and RAP utilize screening levels from the DTSC (HHRA Note Number 3, June 2018), USEPA Regional Screening Levels (May 2018) and the SFRWQCB (2016), that include values which are out of date. The most current human health risk-based screening level for diesel range organics (SFRWQCB, 2019) in soil is 260 mg/kg rather than the 230 mg/kg used in the Report and the RAP. Since the screening level used in the RAP is more protective, changes do not need to be made, however, the option is provided to use the current screening level. However, HERO does recommend that data from the post remedy confirmation sampling proposed in the RAP, as well as fill material imported to the Site should be compared to the most current risk based screening levels from the DTSC, USEPA and the SFRWQCB.

2) Report, Section 3.2: HERO recommends adding a description of the SVOC analysis results (which were non-detect) to section 3.2 of the Report.

3) Report, Table 2 and 3: HERO recommends adding footnotes or otherwise modifying the sample analysis results tables to describe the analyses which were not presented due to a lack of detections.

4) Report Table 3: HERO recommends adding risk-based goals to Table 3 for those chemicals which lack MCLs. For the TPH, HERO recommends using the ESLs for direct contact with groundwater. TPH in the oil range can conservatively be compared to the ESLs for Hydrocarbon Oxidation Products since oil range TPH are insoluble.

5) RAP: HERO recommends referencing in the RAP, DTSC's (2001) clean fill advisory, for guidance on evaluating soil for import following the proposed excavations of lead and TPH impacted soil (https://dtsc.ca.gov/wp-content/uploads/sites/31/2018/09/SMP_FS_Cleanfill-Schools.pdf).

HERO notes that the recommendations made in this memorandum are site specific and should not be construed as a policy decision applicable to other sites. If you have additional questions, please contact me at (714) 484-5421 or efrem.neuwirth@dtsc.ca.gov.

Review/concur:

Shukla Roy-Semmen, Ph.D.
Senior Toxicologist
Southern California Unit Chief
Human and Ecological Risk Office

Shukla Roy-Semmen

STATE OF CALIFORNIA
ENVIRONMENTAL PROTECTION AGENCY
DEPARTMENT OF TOXIC SUBSTANCES CONTROL

In the Matter of: 128 Hurricane Street -Venice Auxiliary Pumping Plant (VAPP) 128 Hurricane Street Venice, California 90292 Proponent: City of Los Angeles Bureau of Engineering 1149 South Broadway Los Angeles, California 90015	Docket No. HSA-FY20/21-058 Standard Voluntary Agreement Health and Safety Code Section 25355.5(a)(1)(C)

The California Department of Toxic Substances Control (DTSC) and the City of Los Angeles Bureau of Engineering, (Proponent) enter into this Standard Voluntary Agreement (Agreement) and agree as follows:

1. Site. This Agreement applies to the Site located at 128 Hurricane Street in Los Angeles County, California 91723 (Site), identified by Los Angeles Assessor's Parcel Number(s) 422-5010-016, and any off-site area to which hazardous substances have or may have migrated from the Site. The Site is approximately 0.097 acres in size and is bordered by Hurricane Street on the southwest and Canal Court on the southeast. There are no structures on the Site. The property was used for oil production from 1928 to 1932. The Site is surrounding by residential housing, a waste water pumping plant. Site location map and a Site diagram are attached as Exhibits A and B.

2. Jurisdiction. This Agreement is entered into by DTSC and Proponent pursuant to Health and Safety Code section 25201.9, which authorizes DTSC to provide assistance to a person in complying with Health and Safety Code chapter 6.8 and its implementing regulations.

3. Purpose. The purpose of this Agreement is for the Proponent to investigate, remediate, and/or evaluate a release, a threatened release, or a potential release of any hazardous substance at or from the Site under the oversight of DTSC. The purpose of this Agreement is also for DTSC to obtain reimbursement from Proponent for DTSC's oversight costs incurred pursuant to this Agreement.

4. Ownership and Notification.

4.1. The Site is owned by the City of Los Angeles.

4.2. Prior to DTSC providing oversight or review or comment on any document, Proponent shall provide DTSC with all of the following: (a) proof of the identity of all current record owners of fee title to the Site and their mailing addresses; (b) written evidence that the owners of record have been sent a notice that describes the actions completed or proposed by Proponent; and (c) an acknowledgment of the receipt of the notice required in subparagraph (b) from the property owners or proof that Proponent has made reasonable efforts to deliver the notice to the property owner and was unable to do so.

4.3. Proponent shall notify DTSC of any changes in ownership of the Site subsequent to the Effective Date of this Agreement and provide written evidence that Proponent notified the new owner(s) of record of the actions completed or proposed by Proponent under this Agreement.

5. Substances Found at the Site. Based on the information available to DTSC and Proponent, the Site is or may be contaminated with hazardous substances, including total petroleum hydrocarbons.

6. Scope of Work and DTSC Oversight. DTSC shall review and provide Proponent with written comments on all Proponent's deliverables as described in Exhibit C (Scope of Work) and other documents applicable to the scope of the project. DTSC shall provide oversight of field activities, including sampling and remedial activities, as appropriate. Proponent agrees to perform all the work required by this Agreement. Proponent shall perform the work in accordance with applicable local, state and federal statutes, regulations, ordinances, rules and guidance documents, in particular, Health and Safety Code section 25300 et seq., as amended.

7. Additional Activities. DTSC and Proponent may amend this Agreement to include additional activities in accordance with Paragraph 17 of this Agreement. If DTSC expects to incur additional oversight costs for these additional activities, it will provide an estimate of the additional oversight costs to Proponent.

8. Endangerment During Implementation.

8.1 Proponent shall notify DTSC's Project Manager immediately upon learning of any condition that may pose an immediate threat to public health or safety or the environment. Within seven days of the onset of such a condition, Proponent shall

furnish a report to DTSC, signed by Proponent's Project Manager, setting forth the conditions and events that occurred and the measures taken in response thereto.

8.2 In the event DTSC determines that any activity (whether or not pursued in compliance with this Agreement) may pose an imminent or substantial endangerment to the health or safety of people on the Site or in the surrounding area or to the environment, DTSC may order Proponent to conduct additional activities in accordance with Paragraph 7 of this Agreement or to stop further implementation of this Agreement for such period of time as may be needed to abate the endangerment. DTSC may request that Proponent implement interim measures to address any immediate threat or imminent or substantial endangerment.

9. Access. Proponent shall provide, and/or obtain access to the Site and take all reasonable efforts to obtain access to offsite areas to which access is necessary to implement the Agreement. Such access shall be provided to DTSC's employees, contractors, and consultants at all reasonable times. Nothing in this paragraph is intended or shall be construed to limit in any way the right of entry or inspection that DTSC or any other agency may otherwise have by operation of law.

10. Sampling, Data and Document Availability. When requested by DTSC, Proponent shall make available for DTSC's inspection, and shall provide copies of, all data and information concerning contamination at or from the Site, including technical records and contractual documents, sampling and monitoring information and photographs and maps, whether or not such data and information was developed pursuant to this Agreement. For all final reports, Proponent shall submit one hard (paper) copy and one electronic copy with all applicable signatures and certification stamps as a text-readable Portable Document Formatted (pdf) file compatible with Adobe Acrobat or a formatted file compatible with Microsoft Word.

11. Record Preservation. Proponent shall retain, during the implementation of this Agreement and for a minimum of six years after its termination, all data, reports, and other documents that relate to the performance of this Agreement. If DTSC requests that some or all of these documents be preserved for a longer period of time, Proponent shall either comply with the request, deliver the documents to DTSC, or permit DTSC to copy the documents at Proponent's expense prior to destruction.

12. Notification of Field Activities. Proponent shall inform DTSC at least seven days in advance of all field activities pursuant to this Agreement and shall allow DTSC and its authorized representatives to take duplicates of any samples collected by Proponent pursuant to this Agreement.

13. Project Managers. Within 14 days of the effective date of this Agreement, DTSC and Proponent shall each designate a Project Manager and shall notify each other in writing of the Project Manager selected. The Proponent's Project Manager shall have the technical expertise in project management, regulatory compliance, and hazardous substance site investigation and remediation sufficient to fulfill his or her responsibilities. Each Project Manager shall be responsible for overseeing the implementation of this Agreement and for designating a person to act in his/her absence. All communications between DTSC and Proponent, and all notices, documents and correspondence concerning the activities performed pursuant to this Agreement shall be directed through the Project Managers. Each party may change its Project Manager with at least seven days prior written notice.

14. Proponent's Consultant and Contractor. All engineering work performed pursuant to this Agreement shall be under the direction and supervision of a registered professional engineer licensed in California, with expertise in hazardous substance site investigation and remediation. All geological work performed pursuant to this Agreement shall be under the direction and supervision of a registered professional geologist licensed in California, with expertise in hazardous substance site investigation and remediation. Proponent's contractors and consultants shall have the technical expertise sufficient to fulfill his or her responsibilities. Within 14 days of the effective date of this Agreement, Proponent shall notify DTSC's Project Manager in writing of the name, title, and qualifications of the registered professional engineer and/or professional geologist and of any contractors or consultants and their personnel to be used in carrying out the work under this Agreement in conformance with applicable state law, including but not limited to, Business and Professions Code sections 6735 and 7835.

15. DTSC Review and Approval. All work performed pursuant to this Agreement is subject to DTSC's review and approval. If DTSC determines that any report, plan, schedule or other document submitted for approval pursuant to this Agreement fails to comply with this Agreement or fails to protect public health or safety or the environment, DTSC may (a) return comments to Proponent with recommended changes and a date by which the Proponent must submit to DTSC a revised document incorporating or addressing the recommended changes; or (b) modify the document in consultation with Proponent and approve the document as modified. All DTSC approvals and decisions made regarding submittals and notifications will be communicated to Proponent in writing by DTSC's Branch Chief or his/her designee. No informal advice, guidance, suggestions or comments by DTSC regarding reports, plans, specifications, schedules or any other writings by the Proponent shall be construed to relieve Proponent of the obligation to obtain such written approvals.

16. Payment.

16.1 Proponent is required to pay (a) all costs incurred by DTSC in association with preparation of this Agreement, and for oversight activities, including review of documents, conducted prior to the effective date of this Agreement; and (b) all costs incurred by DTSC in providing oversight pursuant to this Agreement, including review of the documents and activities described in Exhibit C and associated documents, and oversight of field activities. Costs incurred include interest on unpaid amounts that are billed and outstanding more than 60 days from the date of the invoice.

16.2 An estimate of DTSC's oversight costs is attached as Exhibit D. It is understood by the parties that Exhibit D is an estimate and cannot be relied upon as the final cost figure. DTSC may provide an adjusted cost estimate as the work progresses. Prior to adjusting the cost estimate, DTSC will provide Proponent with a written notice and a detailed explanation of the change to the cost estimate. DTSC will bill Proponent quarterly. Proponent agrees to make payment within 30 days of receipt of DTSC's billing. Such billings will reflect any amounts that have been advanced to DTSC by Proponent.

16.3 In anticipation of oversight activities to be conducted, Proponent shall make an advance payment of $19,142.00 to DTSC no later than 10 days after this Agreement is fully executed. It is expressly understood and agreed that DTSC's receipt of the entire advance payment as provided in this paragraph is a condition precedent to DTSC's obligation to provide oversight, review of or comment on documents. DTSC will draw-down from the advance payment, which will be documented in DTSC's invoice. When the advance payment is depleted, DTSC will continue to request payment through the invoice process.

16.4 All payments made by Proponent pursuant to this Agreement shall be by check payable to the "Department of Toxic Substances Control" and bearing on its face the project code for the Site (Site # 301916) and the docket number HSA-FY20/21-058 of this Agreement. Upon request by Proponent, DTSC may accept payments made by credit cards or electronic funds transfer. Payments by check shall be sent to:

Accounting Office
Department of Toxic Substances Control
P.O. Box 806
Sacramento, California 95812-0806

A photocopy of the check shall be sent concurrently to DTSC's Project Manager.

16.5 DTSC shall retain all cost records associated with the work performed under this Agreement as may be required by state law. DTSC will make all documents

that support DTSC's cost determination available for inspection upon request in accordance with the Public Records Act, Government Code section 6250 et seq.

17. Amendments. This Agreement may be amended in writing by mutual agreement of DTSC and Proponent. Such amendment shall be effective the third business day following the day the last party signing the amendment sends its notification of signing to the other party. The parties may agree to a different effective date.

18. Termination for Convenience.

18.1 Except as otherwise provided in this paragraph, each party to this Agreement reserves the right to unilaterally terminate this Agreement for any reason. Termination may be accomplished by giving a 30-day advance written notice of the election to terminate this Agreement to the other party. In the event that this Agreement is terminated under Paragraph 18.1, Proponent shall be responsible for DTSC costs through the effective date of termination.

18.2 If operation and maintenance activities are required for the final remedy, Proponent may not terminate the Agreement under Paragraph 18.1 upon DTSC's approval of an Operation and Maintenance Plan as proposed by Proponent, unless an Operation and Maintenance Agreement is entered into between DTSC and Proponent or between DTSC and a party responsible for the required operation and maintenance activities.

19. Calendar of Tasks and Schedules. The attached Exhibit E (Calendar of Tasks and Schedules) is merely for the convenience of listing in one location the submittals required by this Agreement. The Calendar of Tasks and Schedules lists activities specific to this project based on the available information. DTSC and Proponent shall make a reasonable effort to complete the activity within the schedule outlined in Exhibit E. A schedule for each related activity shall be established as part of this Agreement.

If Proponent is unable to meet the activity's schedule, Proponent will notify DTSC's Project Manager 10 days prior to the scheduled action or submittal date. If DTSC is unable to meet the activity's schedule, DTSC will notify Proponent 10 days prior to the scheduled action or submittal date.

20. Incorporation of Exhibits, Plans and Reports. All exhibits are incorporated into this Agreement by reference. All plans, schedules and reports that require DTSC's approval and are submitted by Proponent pursuant to this Agreement are incorporated in this Agreement upon DTSC's approval.

21. Reservation of Rights. DTSC reserves all of its statutory and regulatory powers, authorities, rights, and remedies under applicable laws to protect public health or the environment, including the right to recover its costs incurred therefor. Proponent reserves all of its statutory and regulatory rights, defenses and remedies available to the Proponent under applicable laws.

22. Non-Admission of Liability. By entering into this Agreement, Proponent does not admit to any finding of fact or conclusion of law set forth in this Agreement or any fault or liability under applicable laws.

23. Proponent Liabilities. Nothing in this Agreement shall constitute or be considered a covenant not to sue, release or satisfaction from liability by DTSC for any condition or claim arising as a result of Proponent's past, current, or future operations or ownership of the Site.

24. Government Liabilities. The State of California or DTSC shall not be liable for any injuries or damages to persons or the Site resulting from acts or omissions by Proponent or by related parties in carrying out activities pursuant to this Agreement, nor shall the State of California or DTSC be held as a party to any contract entered into by Proponent or its agents in carrying out the activities pursuant to this Agreement.

25. Third Party Actions. In the event that Proponent is a party to any suit or claim for damages or contribution relating to the Site to which DTSC is not a party, Proponent shall notify DTSC in writing within 10 days after service of the complaint in the third-party action. Proponent shall pay all costs incurred by DTSC relating to such third-party actions, including but not limited to responding to subpoenas.

26. California Law. This Agreement shall be governed, performed and interpreted under the laws of the State of California.

27. Severability. If any portion of this Agreement is ultimately determined not to be enforceable, that portion will be severed from the Agreement and the severability shall not affect the enforceability of the remaining provisions of the Agreement.

28. Parties Bound. This Agreement applies to and is binding, jointly and severally, upon Proponent and its agents, receivers, trustees, successors and assignees, and upon DTSC and any successor agency that may have responsibility for and jurisdiction over the subject matter of this Agreement. Proponent shall ensure that its contractors, subcontractors and agents receive a copy of this Agreement and comply with this Agreement.

29. Effective Date. The effective date of this Agreement is the date of signature by DTSC's authorized representative after this Agreement is first signed by Proponent's authorized representative. Except as otherwise specified, "days" means calendar days.

30. Representative Authority. Each undersigned representative of the party to this Agreement certifies that she or he is fully authorized to enter into the terms and conditions of this Agreement and to execute and legally bind the party to this Agreement.

31. Counterparts. This Agreement may be executed and delivered in any number of counterparts, each of which when executed and delivered shall be deemed to be an original, but such counterparts shall together constitute one and the same document. This Agreement and documents related to it may be executed and transmitted by facsimile or pdf copy, which copies shall be deemed to be, and utilized in all respects as, an original. However, Proponent must provide the wet-inked signed original of each counterpart to DTSC by mail within 14 calendar days of signing.

Date: 10/23/2020

Haissam Y. Salloum, P.E.
Branch Chief
Site Mitigation and Restoration Program
Chatsworth Office
Department of Toxic Substances Control

Sylvester Kueh

Date: 10/22/2020

Sylvester Kueh
City of Los Angeles

ESSENTIAL FISH HABITAT ASSESSMENT FOR THE VENICE AUXILIARY PUMPING PLANT



Prepared for

City of Los Angeles
Department of Public Works
Bureau of Engineering – Wastewater Conveyance Engineering Division

April 2019

AECOM

300 Lakeside Drive, Suite 400
Oakland, CA 94612

Sub-Task Order No. 5-021

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A VAPP Design Drawings

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Table 1	Commercially or Ecologically Important Fish Species Potentially Occurring in Ballona Lagoon and Grand Canal

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Photograph 2	Grand Canal, North of the Project
Photograph 3	Cofferdam Installation Site on Western Bank of Grand Canal
Photograph 4	Debris Racks on Pacific Ocean Side of Tide Gate Facility
Photograph 5	Tide Gate Structures (Two Slide Gates, One Flap Gate) on Pacific Ocean Side of Facility
Photograph 6	Lone Debris Rack on Ballona Lagoon Side of Tide Gate Facility, Water Surface Elevation Drop on an Outgoing Tide
Photograph 7	Horn Snails on Intertidal Substrate in Grand Canal at Project Location

List of Acronyms and Abbreviations

°C	degrees Celsius
CCC	California Coastal Commission
CIS	Coastal Interceptor Sewer
EEZ	Economic Exclusion Zone
EFH	Essential Fish Habitat
°F	degrees Fahrenheit
FMP	Fisheries Management Plan
HAPC	Habitat Areas of Particular Concern
mgd	Millions of Gallons per Day
MHHW	Mean Higher High Water Level
MMRP	Mitigation and Monitoring Reporting Program
NMFS	National Marine Fisheries Service
RWQCB	Regional Water Quality Control Board
SWPPP	Stormwater Pollution Prevention Plan
USACE	United States Army Corps of Engineers
VPP	Venice Pumping Plant
VAPP	Venice Auxiliary Pumping Plant

1 DESCRIPTION OF THE PROPOSED PROJECT

This essential fish habitat (EFH) assessment provides a technical analysis of the potential adverse effects that the proposed Venice Auxiliary Pumping Plant (VAPP) Project (Project) may have on EFH, including consideration of the mitigation measures and best management practices established for the VAPP Project in the Final Environmental Impact Report. The consultation requirements of Section 305(b) of the Magnuson-Stevens Fishery Conservation and Management Act (16 United States Code 1855(b)) provide that Federal agencies (in this case, the U.S. Army Corps of Engineers [USACE]) must consult with the National Marine Fisheries Service (NMFS) on all actions, or proposed actions, authorized, funded, or undertaken by the agency, that may adversely affect EFH. Generally, EFH consultation consists of a Federal agency notifying NMFS regarding an action that may adversely affect EFH, and providing NMFS with an EFH Assessment; NMFS providing EFH Conservation Recommendations to avoid and/or minimize adverse effects to EFH; and the Federal agency responding to National Oceanic and Atmospheric Administration Fisheries' EFH Conservation Recommendations if needed. If the Federal agency determines that a project would not adversely affect EFH, no consultation is required.

1.1 PURPOSE AND NEED

The City of Los Angeles (City) currently owns and operates the Venice Pumping Plant (VPP) adjacent to the Ballona Lagoon and close to Venice Beach (Figure 1). The pumping plant is the City's largest pumping plant, and is considered a critical facility to convey wastewater from its tributary area. Wastewater from the surrounding urban area collects in the Coastal Interceptor Sewer (CIS) and is then pumped uphill by the VPP to the City's Hyperion wastewater reclamation facility. There have been several occasions, beginning in the 1990s and extending through the early 2000s, when influent flows during periods of wet weather nearly exceeded the combined pumping capacity (90 million gallons per day [mgd]) of all five operating VPP pumps. This resulted in a near miss of sewage spill into the Grand Canal and Ballona Lagoon because the wet wells and pumps were almost entirely inundated by sewage. Exceeded sewer capacity would have required emergency discharges directly to the Grand Canal and Ballona Lagoon, or overflows into the surrounding street network. Because of these conditions, the City began planning and designing projects that would upgrade and enhance the CIS and VPP. The City proposes to construct an auxiliary pumping plant and make additional upgrades to the existing facilities to increase reliability and capacity at VPP. Along with other environmental reviews and permitting, the City has applied for a Section 404 permit from the USACE for the VAPP Project, and the USACE advised the City that this EFH Assessment is required to complete the Section 404 permit application.

1.2 PROJECT LOCATION

The Project location is in a highly urbanized area, within the Ballona Lagoon West sub-area of Venice, east of Canal Court (Figure 2). It contains a mix of residential, open space, and public facility land uses. Single-and multi-family residential development lines Ballona Lagoon and the Grand Canal. The new VAPP facility would be sited at 139 Hurricane Street, which is bounded by the Grand Canal to the east (Photograph 1), Hurricane Street and the VPP to the south, multi-family residential to the north, and Canal Court to the west. The Project is situated at the point where Ballona Lagoon ends and Grand Canal begins. Both waterways are tidal, with tidal control at a tide gate at the southern end of Ballona Lagoon, but Grand Canal is narrower and more channelized than Ballona Lagoon (Photograph 2). A narrow band of open space, primarily a walking path providing public access, runs along the banks of Ballona Lagoon, and some tidal wetlands are present along its border.



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City of Los Angeles

Venice Auxiliary Pumping Plant EFH Assesment

FIGURE 1

Project Location

AECOM Oakland CA 3/27/2019 USER caitlin.jensen PATH L:\Projects\GIS\Projects\City_of_Los_Angeles\Venice_Auxiliary_Pumping_Plant_EFH\02_Maps\02_Map_Production_and_Reports\Fig2_Project_Footprint.mxd

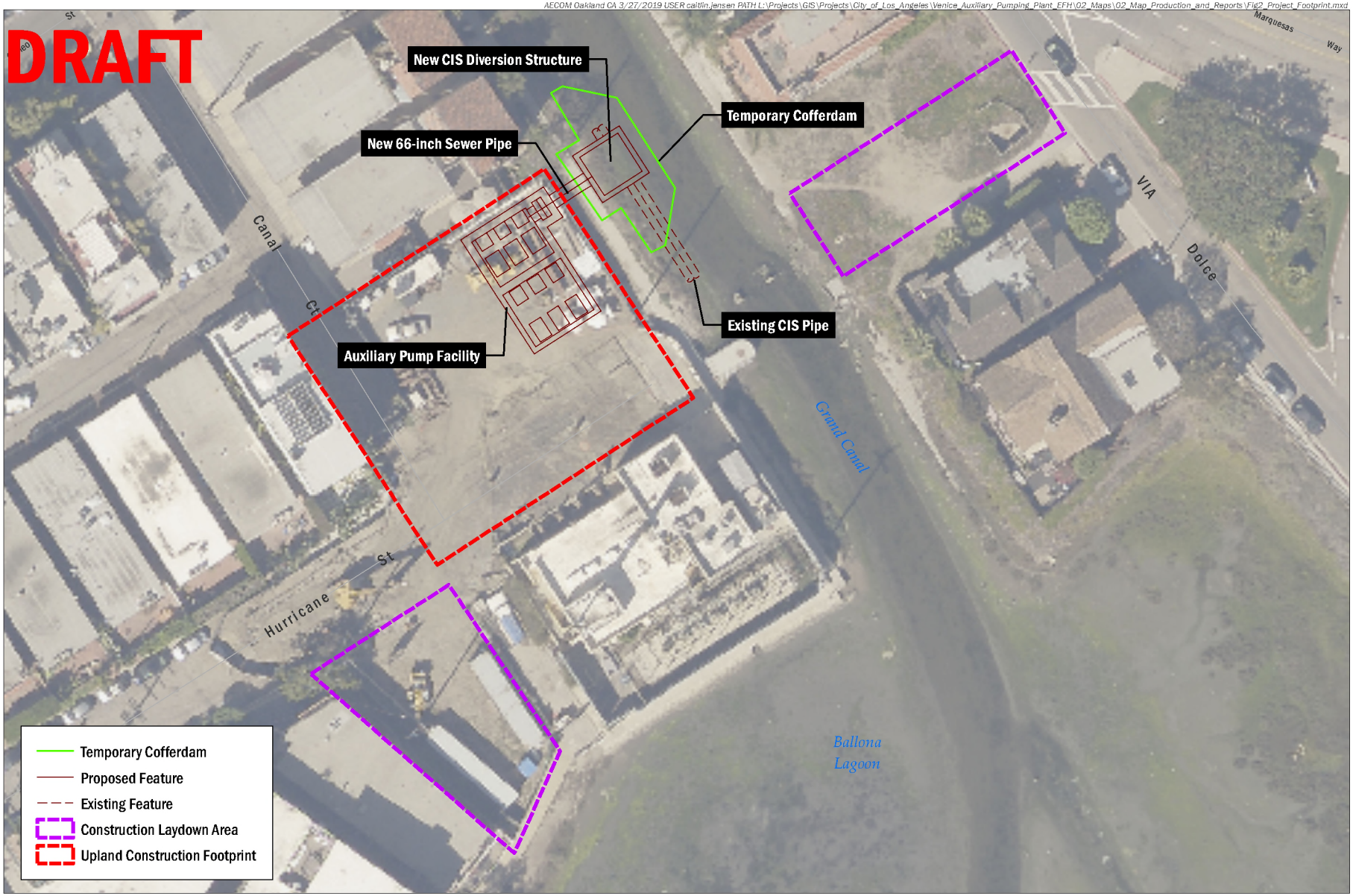

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FIGURE 2

Project Footprint



Photograph 1
Ballona Lagoon, South of the Project



Photograph 2
Grand Canal, West and North of the Project

1.3 PROPOSED ACTION

The Proposed Action, or the Project, would be built on three vacant lots with a total combined area of approximately 15,000 square feet, and would also include construction in the Grand Canal. As shown on Figure 2, and in the design drawings in Appendix A, the Project would include a number of components:

- Auxiliary Pump Facility, including:
  - One two-story building, approximately 32 feet in height, with a total of 2,500 square feet, that would house the operational control center for the plant, related electrical equipment, and employee workstations;
  - Three 18-mgd wet-pit submersible pumps, constructed underground in an upland area;
  - Concrete wet well, influent piping, and a sluice gate associated with the three new pumps (within the footprint of the new Auxiliary Pump Facility);
  - Electrical equipment, utility connections, instrumentation and controls, transformers, and generators;
  - Fencing with blinds and vegetation for screening the VAPP building; and
  - Eight parking spaces at 128 Hurricane Street to allow for employee, delivery, visitor, and Beach Impact Zone parking.
- A 17-foot by 17-foot submerged diversion structure on the existing CIS, the top of which would be buried approximately 18 feet below the bottom grade in the Grand Canal.
- A new 66-inch sewer pipe, connecting the wet well associated with the 18-mgd pumps to the new diversion structure on the existing CIS.
- Two temporary construction laydown areas.
- Construction of the new CIS diversion structure and new 66-inch sewer pipe would require dewatering a portion of Grand Canal along the western bank adjacent to the VAPP.

Ground-disturbing work for the proposed project is preliminarily scheduled to begin in the fall of 2020, with full project completion expected in summer of 2022. Construction activities in the footprint of the Auxiliary Pump Facility and the temporary construction laydown areas (Figure 2) have been ongoing for other wastewater system upgrades. The majority of these activities would occur above the Mean Higher High Water (MHHW) level in urban areas, and Stormwater Pollution Prevention Plan (SWPPP) measures would be implemented to prevent erosion and sedimentation into nearby waters. Because those activities would not have effects on EFH, they will not be discussed in detail.

As noted above, the existing 66-inch CIS sewer pipe that serves the existing VPP is under the Grand Canal. To minimize operational disruptions, the submerged diversion structure would be constructed to allow flows to be diverted from the VPP to the VAPP. The top surface of the diversion structure would be below the grade of the Grand Canal, by approximately 18 feet, and would not protrude aboveground into Grand Canal. This new diversion structure would be connected to the new auxiliary pumps by a 66-inch sewer pipe approximately 25 feet long. Construction of the diversion structure and 66-inch sewer connection would require installation of a cofferdam and dewatering of a small portion of the Grand Canal. Details of the construction

activities that would result in effects on waters potentially supporting EFH are provided in the following subsections.

1.3.1 COFFERDAM INSTALLATION

To provide a dry work area to install the below-ground facilities, a cofferdam would be installed along the western bank of Grand Canal (Figure 2; Photograph 3). Up to 80 linear feet of waters of the U.S. in Grand Canal would be enclosed in the cofferdam, which would extend about halfway across the canal. The remaining portion of the cofferdam would be installed in upland areas outside waters of the U.S. The cofferdam would be constructed using soldier piles and sheeting. Soldier piles would be driven into the Canal using a vibratory hammer, or hydraulically pushed into the canal substrate. Sheet piles would then be installed between the soldier piles and the area in the cofferdam that would then be dewatered. Instillation of the cofferdam is preliminarily scheduled to occur in the spring of 2021.



Photograph 3
Cofferdam Installation Site on Western Bank of Grand Canal

In the Grand Canal, the cofferdam is expected to remain in place for up to 6 months. During this time, upstream and downstream flows in the Canal would be maintained because the cofferdam would only occupy 50 percent or less of the width of the Canal. The area in the cofferdam would be dewatered continuously throughout construction. A pump, situated in the cofferdam area, would pump water from the cofferdam. Pumped water would be treated for discharge.

1.3.2 EXCAVATION

Once the cofferdam is in place, excavation would occur. In Grand Canal, an excavator situated on the upland bank area adjacent to Grand Canal would excavate to approximately 25 feet below the ground surface. Approximately 400 cubic yards of material would be excavated to install the diversion structure. Excavated materials would be stockpiled either at one of the established Laydown Areas for later use to backfill in the Grand Canal, or off-hauled to an appropriate landfill. Disposition of the excavated sediment would occur in accordance with the requirements of the Project's Clean Water Act permits.

1.3.3 BACKFILL AND RESTORATION

Backfilling of the Grand Canal would be done using the excavation material temporarily stockpiled. Once the diversion structure and associated pipe connections have been constructed and Grand Canal bottom has been backfilled and compacted to pre-project elevations, the cofferdam piles and sheeting would be removed using a crane situated in the upland bank area adjacent to Grand Canal. Removal of the cofferdam would likely occur in the summer of 2021, a few months after its installation. The western bank of Grand Canal would be restored and recontoured to pre-project elevation. Upland and wetland vegetation removed during construction would be replaced either by seeding, cuttings, or container plants. A habitat restoration and monitoring plan (prepared by a qualified restoration ecologist) will be required by, and submitted to, the Coastal Commission for approval.

1.3.4 OPERATIONS

The three new submersible pumps would withdraw sewage from a wet well through a new 66-inch sewer pipe and discharge into a common header that would serve both the VPP and VAPP. Under normal operations, the VAPP and VPP would operate as a single functional pump station, with their respective wet wells hydraulically linked through similar elevations and an even flow split. Sealed hatches would provide access for maintenance of the new facilities. Installed valves would allow flows to be diverted to either the VAPP or VPP, as needed. A gate would also be provided at the inlet of the VAPP to allow isolation for maintenance purposes. The VAPP would not discharge to or intake any water from the Grand Canal or Ballona Lagoon, and the system would continue to operate in isolation from surface waters.

2 DESCRIPTION OF ESSENTIAL FISH HABITAT

2.1 STUDY METHODS

The potential for EFH and associated Pacific Coast Groundfish and Coastal Pelagic Species to be present in the Action Area[1] was evaluated based on a review of existing data and a reconnaissance survey. Sources of existing data reviewed included:

[1] The Action Area includes the extent of Project construction activities, as well as areas nearby that could be affected during construction. In this case, the extent of the Action Area was determined in part based on the extent over which in-water construction noise may propagate.

- Venice Auxiliary Pumping Plant Final Environmental Impact Report (City of Los Angeles 2017)
- Biological Assessment Report for ESR-Hurricane Street/Grand Canal Esplanade Maintenance Hole (Jones 2012)
- National Marine Fisheries Service (NMFS) Essential Fish Habitat Consultation Guidance (NMFS 2004)
- National Marine Fisheries Service (NMFS) Essential Fish Habitat Mapper v3.0 (NMFS 2016)
- Coastal Pelagic Species Fishery Management Plan (Pacific Fishery Management Council 2018)
- Pacific Coast Groundfish Fishery Management Plan for the California, Oregon, and Washington Groundfish Fishery (Pacific Fishery Management Council 2016)
- Essential Fish Habitat in Santa Monica Bay, San Pedro Bay, and San Diego Bay: A Reference Guide for Managers (Robbins 2006)
- Ballona Lagoon 7.5-Foot Quadrangle Resource Summary (State of California 2007)
- Annual Weather Averages in Santa Monica, California (U.S. Climate Data 2019)

An AECOM biologist conducted a reconnaissance survey of the Action Area on March 7, 2019. The survey included examining the Action Area and surrounding reaches of the Grand Canal, Ballona Lagoon, and the tide gate structure that connects Ballona Lagoon (and Grand Canal) to the Pacific Ocean. The biologist walked the entire length of Ballona Lagoon and Grand Canal from Ballona Lagoon to West Washington Boulevard, paying special attention to the areas near the Project. Important habitat features were noted, including hydrological and ecological parameters useful for determining the presence of EFH. City staff met AECOM's biologist at the Project, and together they reviewed key project information.

Information collected from desktop review and the reconnaissance survey was supplemented by the Biological Assessment Report for the ESR-Hurricane Street/Grand Canal Esplanade Maintenance Hole Project from 2012, prepared by the City (Jones 2012). This maintenance project occurred in the Action Area of the proposed VAPP Project.

2.2 ENVIRONMENTAL SETTING

Ballona Lagoon and the Grand Canal lie within the neighborhood of Venice in Los Angeles, California, and are muted tidal, nearshore estuarine waters connected to Marina del Rey near its terminus in Santa Monica Bay (Figure 1). The community of Venice experiences a mean annual temperature of 63 degrees Fahrenheit (°F; 17.2 Celsius [°C]), with a mean annual precipitation of approximately 13 inches (U.S. Climate Data 2019). Elevations in the Action Area, approximately where Ballona Lagoon, Grand Canal, and Hurricane Street come together, range from near sea level to 20 feet above sea level. Some portions of the Project footprint shown in Figure 2, including the entire Upland Construction Footprint and most of the Construction Laydown Area, are already in use as construction laydown areas for other City projects, although this condition is not shown in Figure 2. Although surrounded by development, aquatic features and their margins

in the Action Area are primarily preserved open space with minimal-impact infrastructure (such as maintenance access holes and concrete channel walls, as shown in Photographs 1 through 3.

The Project is approximately 0.75 mile upstream (north-northwest) of the Marina del Rey Channel and is at Grand Canal, just beyond where Ballona Lagoon transitions into the canal (Figure 1). Tidal exchange into Ballona Lagoon and Grand Canal occurs through three tide gates that pass underneath Via Marina and link the lagoon and the canal to the Pacific Ocean via the Marina Del Rey Channel. According to an older document from the State of California's Natural Resources Agency that is available online, one of the three gates is maintained in the open position, and the average tidal regime is restricted, and ranges from approximately -2 feet to +2.5 feet National Geodetic Vertical Datum (State of California 2007). Debris racks with an approximately 2-inch grid on the inside and outside of the gate facility protect it from debris, effectively preventing larger fish from passing through. All of the fresh water entering Ballona Lagoon and Grand Canal is urban run-off; these features have been isolated from Ballona Creek.

The debris racks that control tidal flow to the Project were inspected on March 7, 2019, and found to have considerable potential to limit the movement of fishes. On the Pacific Ocean side of the gate facility, the debris rack spans all three tide gates (Photograph 4). Two of the gates are slide gates, and one is a flap gate (Photograph 5). On the Ballona Lagoon side of the facility, only the flap gate is protected by a debris rack, and the two bays leading to the slide gates are unprotected, open culverts. When the facility was observed, on an outgoing tide, substantial flow was traveling out of the lagoon through the flap gate, and there was a drop at the interior debris rack between the water surface in the lagoon and that in the Pacific Ocean (Photograph 6). In addition to the 2-inch grid, depending on gate operation, fish movement through this facility could also be limited by water velocities, water surface drops (or jump heights), and passage through the flap gate, if that is the gate primarily used.

South of the Project, Ballona Lagoon is approximately 25 meters wide and includes approximately 14.5 acres of open water habitat and approximately 1.5 acre of intertidal habitat (State of California 2007). Grand Canal, at the Project and to the north, is a narrower channel that, due to its uniform width and banks, appears artificially excavated (Photograph 2). It links the Venice Canals with the Pacific Ocean via Ballona Lagoon, and then the Marina del Rey Channel. The lagoon and canal floors are composed of soft mud and varying amounts of sand and gravel (Jones 2012). In the Ballona Lagoon-Grand Canal transition, the waterway substrate is characterized by sandy silts mixed with clay (State of California 2007). The Grand Canal channel itself is 48 feet (14.6 meters) in width at its floor, and between 0 and 3.5 feet (1.7 meters) in depth (Jones 2012).

The Ballona Lagoon ecosystem supports narrow bands of coastal strand and coastal salt marsh vegetation communities and intertidal and subtidal soft-bottom communities. Residential development with heavy nearby commercial activity is the predominant land use type adjacent to the Grand Canal and Ballona Lagoon. The wetlands and tidal ecosystem of Ballona Lagoon is a valuable stopover for migratory birds, and possesses potential rearing grounds for smaller fish.



Photograph 4
Debris Racks on Pacific Ocean Side of Tide Gate Facility



Photograph 5
Tide Gate Structures (Two Slide Gates, One Flap Gate) on Pacific Ocean Side of Facility



Photograph 6
Lone Debris Rack on Ballona Lagoon Side of Tide Gate Facility, Water Surface Elevation Drop on an Outgoing Tide

2.3 ESSENTIAL FISH HABITAT

Unless the responsible federal agency confirms otherwise, Ballona Lagoon and the Grand Canal should be considered EFH for Pacific Coast Groundfish and Coastal Pelagic Species (NMFS 2004, Pacific Fishery Management Council 2016, 2018). The extent of EFH for these commercially important species is designated in the Pacific Coast Groundfish Fishery Management Plan (FMP) and the Coastal Pelagic Species FMP, and defined as follows:

1. The overall extent of Pacific Coast Groundfish EFH is identified as all waters and substrate within the following areas:

    - Depths less than or equal to 1,914 fathoms (3,500 meters) to MHHW or the upriver extent of saltwater intrusion, defined as upstream and landward to where ocean-derived salts measure less than 0.5 part per thousand during the period of average annual low flow.

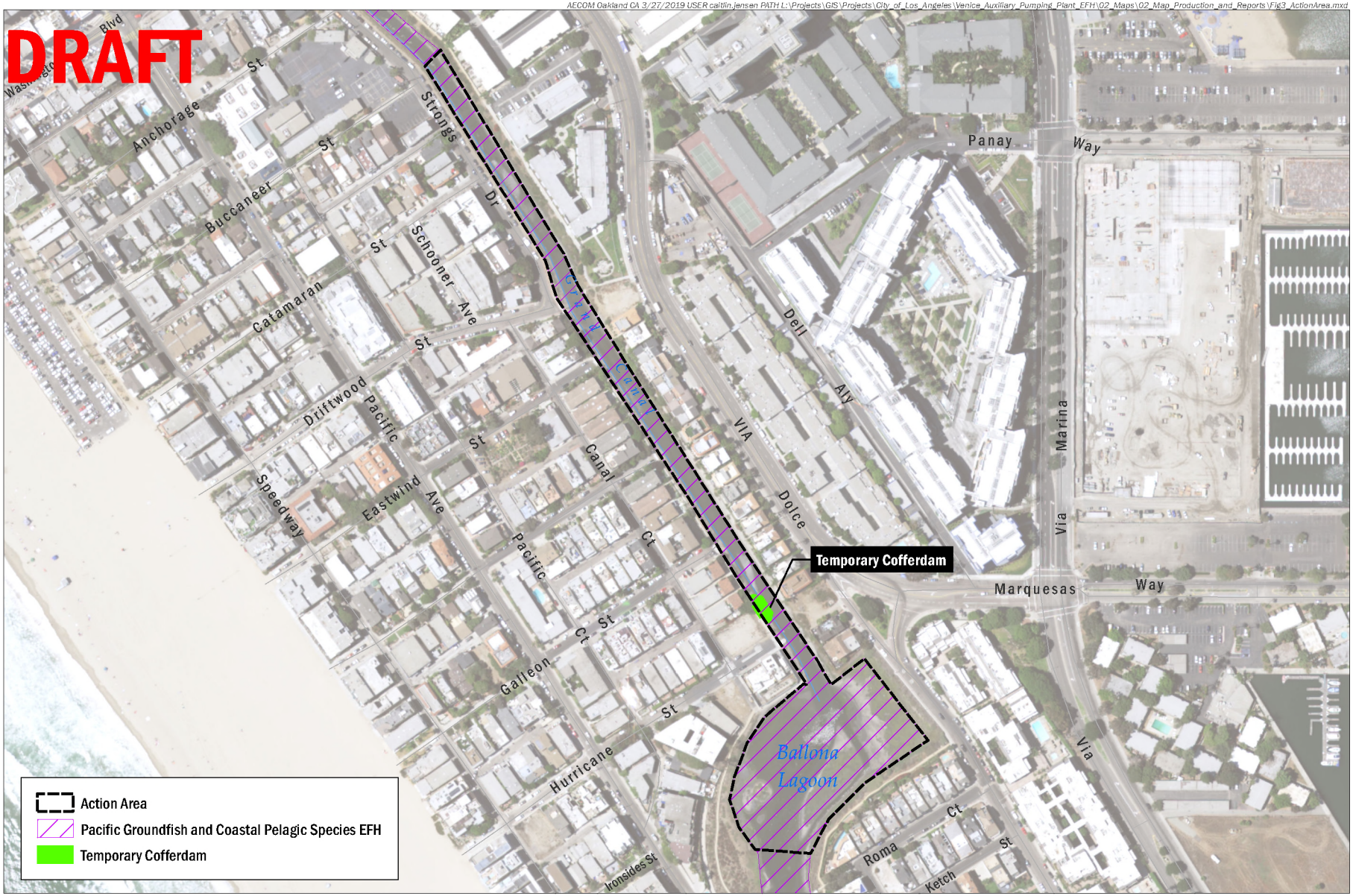
    - Seamounts in depths greater than 3,500 meters as mapped in the EFH assessment GIS.

    Areas designated as Habitat Areas of Particular Concern (HAPCs) not already identified by the above criteria.

2. The overall extent of Coastal Pelagic Species EFH is tied to sea surface water temperatures within the Economic Exclusion Zone (EEZ) of U.S. Waters. The east-west geographic boundary of EFH for each individual coastal pelagic finfish and market squid is defined to be all marine and estuarine waters from the shoreline along the coasts of California, Oregon, and Washington offshore to the limits of the EEZ, and above the thermocline where sea surface temperatures range between 50°F to 79°F (10°C to 26°C).

Potential EFH in the Action Area is shown in Figure 3. The extent of the Action Area was determined in part based on the linear distance over which in-water construction noise may propagate (see Section 3.1.1 for more information regarding underwater noise). Grand Canal and Ballona Lagoon are tidal, predominantly saline, and may be accessible to some life stages of species managed under the Pacific Coast Groundfish and Coastal Pelagic FMPs. The potential EFH in the Action Area includes all areas below MHHW, and is characterized as having predominantly sandy and silty substrates, although in some areas hardened, manmade surfaces are present. Ballona Lagoon and Grand Canal do not have any substantial inputs from freshwater tributaries, except urban runoff during storms. Water in the system is predominantly marine in origin, which presumably maintains the salinity at an average level that is close to seawater.

During the site visit, we noted abundant California horn snails (*Cerithidea californica*) (Photograph 7), diverse foraging shorebirds and ducks, and disturbances at the water surface likely to have been made by fishes, which may be indicators of productive benthic habitat in Ballona Lagoon and Grand Canal. We did not observe eelgrass or other submerged aquatic vegetation. Life stages of some species that may inhabit Grand Canal or Ballona Lagoon are provided in Table 1. These species may use the estuarine waters of the Action Area during at least one life stage; engaging in rearing, foraging, and growth in these tidal channels. Estuarine areas are also considered to be HAPCs, as identified in EFH for Pacific Coast Groundfish (Pacific Fishery Management Council 2016).



Note: The lateral extent of potential EFH in the Action Area is mean higher high water, visually approximated on this figure.

AECOM

City of Los Angeles

Venice Auxiliary Pumping Plant EFH Assesment

FIGURE 3

Extent of EFH in the Action Area



Photograph 7
Horn Snails on Intertidal Substrate in Grand Canal at Project Location

Table 1
Commercially or Ecologically Important Fish Species Potentially Occurring in Ballona Lagoon and Grand Canal

Species	Life Stage	Habitat Association	FMP Association
Brown rockfish (*Sebastes auriculatus*)	juvenile	shallow bays/ estuaries with soft bottom/hard bottom interfaces	Pacific Coast Groundfish
English sole (*Pleuronectes vetulus*)	juvenile	intertidal areas in estuaries	Pacific Coast Groundfish
Northern anchovy (*Engraulis mordax*)	juvenile, adult	near surface in bays and estuaries	Coastal Pelagic Species
Pacific sanddab (*Citharichthys sordidus*)	juvenile	estuarine and nearshore soft-bottom substrate	Pacific Coast Groundfish
Rex sole (*Errex zachirus*)	juvenile	estuarine soft-bottom substrate	Pacific Coast Groundfish
Starry flounder (*Platichthys stellatus*)	eggs, larvae, juveniles	estuarine soft-bottom substrate	Pacific Coast Groundfish
Arrow goby (*Clevelandia ios*)	all life stages	estuarine soft-bottom substrate	NA – estuarine prey species
Bay goby (*Lepidogobius lepidus*)	all life stages	estuarine soft-bottom substrate	NA – estuarine prey species
Longjaw mudsucker (*Gillichthys mirabilis*)	all life stages	estuarine soft-bottom substrate	NA – estuarine prey species
Pacific staghorn sculpin (*Leptocottus armatus*)	all life stages	estuarine soft-bottom substrate	NA – estuarine prey species
Shiner perch (*Cymatogaster aggregata*)	all life stages	estuarine and nearshore soft-bottom substrate	NA – estuarine prey species
Slough anchovy (*Anchoa delicatissima*)	all life stages	estuarine shallow waters near surface	NA – estuarine prey species
Topsmelt (*Atherinops affinis*)	all life stages	estuarine shallow waters near surface	NA – estuarine prey species

Sources: Robbins 2006, NMFS 2016.

3 POTENTIAL EFFECTS TO ESSENTIAL FISH HABITAT

The Proposed Action, with respect to potential effects to EFH, can be described in four phases: in-water cofferdam installation; dewatering and excavation in the cofferdam; installation of below-grade structures; and cofferdam removal and site restoration. Construction activities in upland areas would not have appreciable effects on EFH because implementation of the SWPPP would protect EFH from contaminated runoff or siltation.

3.1 COFFERDAM INSTALLATION

Installation of the cofferdam would produce the majority of the Project effects on EFH, although said effects are mostly minimal and temporary. Activities expected to affect EFH during the cofferdam installation are pile driving of soldier piles and sheet piles into the substrate, and dewatering of the area in the cofferdam. The footprint of the cofferdam contains 0.92 acre of tidal waters and 0.012 acre of tidal wetland. Pile driving would disturb the sediment in Grand Canal, increase turbidity; and produce underwater noise, temporarily affecting EFH outside of the cofferdam area. These effects are expected to occur for less than 1 week. Figure 3 displays the extent of the Action Area over which noise and turbidity increases may temporarily affect EFH, as described below. This area is approximately 3.8 acres in size.

Increased turbidity from pile placement may temporarily impact fish foraging and reduce algal photosynthesis, but suspended particulates would settle soon after completion of the cofferdam. Water quality monitoring would be conducted during construction to maintain turbidity within parameters established by the Regional Water Quality Control Board (RWQCB) in their Section 401 Certification. Localized turbidity may temporarily deter fish from foraging in the Action Area (Figure 3) until the cessation of cofferdam construction.

Piles for cofferdam construction would be installed using a vibratory driver or hydraulic push methods. Hydraulic push methods do not generate intense underwater noise, vibratory drivers produce less intense underwater noise than impact drivers, and noise from vibratory drivers are not expected to cause barotrauma to fish (Caltrans 2015). However, underwater noise from pile driving may still cause temporary hearing shifts or behavioral changes in fish. During vibratory pile driving, the areas of Grand Canal and Ballona Lagoon that are exposed to pile driving noise may be used by fish at a lower rate, or abandoned altogether as fish move away from the noise source. When considering underwater noise impacts, the areas affected are typically limited to the areas where the sound can propagate in a straight line from the source. Because there is a corner in the waterway where the Grand Canal meets Ballona Lagoon, underwater noise would not effectively propagate much south of the pile-driving location (Figure 3). In Grand Canal, a series of slight bends would limit noise propagation to the area extending approximately 1,600 feet (500 meters) to the north. Following the completion of pile-driving activity, fish are expected to resume use of the area affected by pile-driving noise emissions.

Minor hydrological changes to the constricted channel outside of the cofferdam are expected. With the width of the Grand Canal reduced by the cofferdam, flow velocity in the remaining channel width is likely to increase. Should the velocity increase enough, the eastern bank may experience cutting and erosion, causing sediment deposition into the canal. However, the tide gate at the mouth of Ballona Lagoon restricts tidal flows through the Action Area; and based on observations made during the site visit, Grand Canal and Ballona Lagoon typically do not flow fast enough to resuspend sediments, even with some constriction of the channel. Upstream and

downstream flows in the Canal would pass through the half of the waterway's width not obstructed by the cofferdam, and therefore still allow the movement of fish, transport of nutrients, and persistence of hydrological parameters, such as temperature, salinity, and tidal flows.

3.2 DEWATERING AND EXCAVATION

Following completion of the cofferdam, any impounded water would be pumped out, and the substrate in the cofferdam excavated. During this process, any fish or invertebrates in the cofferdam area would likely be killed. Water pumped from the cofferdam would most likely be discharged into the sanitary sewer system as permitted though an industrial waste permit from the City. If there are any discharges to surface waters, they would occur in accordance with the requirements of RWQCB permitting, and therefore would not adversely affect EFH.

Dewatering and excavation would cause benthic macroinvertebrate losses in the cofferdam (0.092 acre of tidal waters and 0.012 acre of tidal wetland), but because the area is very small in relation to the overall tidal waters of Grand Canal and Ballona Lagoon (approximately 30 acres), this loss would not significantly affect forage for Pacific Coast Groundfish or Coastal Pelagic Species. Excavation into the EFH substrate would further cause macroinvertebrate mortality; however, these impacts, like those of the dewatering, would be temporary.

3.3 INSTALLATION OF BELOW GRADE STRUCTURES

Once the excavated pit is dewatered, concrete grout may be jetted into the soil at the bottom of the pit to reduce groundwater percolation and to create a stable surface capable of supporting the new diversion structures, if needed. The new diversion structure would then be installed, along with the 66-inch connector, and the new diversion structure would be tied into the existing CIS. Because these concrete structures would be buried under 18 feet or more of sediment, they would have no direct interaction with the waters of Grand Canal or Ballona Lagoon, and would not affect water quality or EFH.

3.4 COFFERDAM REMOVAL AND SITE RESTORATION

Prior to removal of the cofferdam, stockpiled material would be returned to the excavation. During the removal of the cofferdam, during which the piles are expected to be direct-pulled with a crane from upland areas and surface flows restored to the dewatered area, some resuspension of sediment and temporary increases in turbidity may occur. The magnitude of these effects is expected to be no greater than those discussed for cofferdam installation (Section 3.1.1), and would be more limited in duration, because removal of the cofferdam would only take 1 or 2 days.

Following removal of the cofferdam, the benthic macroinvertebrate community prey base would recolonize and stabilize in the affected area. Although this prey base would take time to recolonize, the area is very small, and prey base in the remainder of Grand Canal and Ballona Lagoon would continue to support EFH. Because the completed diversion structure would not protrude above the grade of the canal, and would be deep enough to avoid any long-term change to the substrate, there is no permanent alteration of EFH associated with the Proposed Action. As described above, restoration of the Action Area would be supported by revegetation and recontouring the grade of the western bank. Therefore, the Proposed Action's minimal lasting effects would be ameliorated by natural and facilitated restoration.

Finally, there are no operational effects to estuarine waters or EFH expected. The new wastewater facility is a closed system that would be better suited to handle increased wastewater surges than the current system. Therefore, its installation represents the most responsible measure to prevent future wastewater discharges into Grand Canal and Ballona Lagoon.

3.5 MITIGATION MEASURES

The Environmental Impact Report for the VAPP Project (City of Los Angeles 2017) committed the City to a Mitigation and Monitoring Reporting Program (MMRP) that includes measures that would reduce the potential adverse effects the Proposed Action may have on EFH. Specifically, the following Mitigation Measures excerpted from the MMRP would reduce and offset the potential effects of the Proposed Action on EFH:

MM BIO-3: Restoration of Vegetation within Grand Canal. Regarding the disturbance footprint within the Grand Canal, habitat along the bank shall be restored to its original condition by seeding, cuttings, and/or container plant installation following construction. Habitat restoration shall be performed in coordination with regulating agencies (California Coastal Commission [CCC], USACE, and RWQCB) and as required by agency permits. A Habitat Restoration Plan shall be prepared by a qualified restoration ecologist/biologist, and submitted to the City for review and approval, prior to submittal to the agencies. The plan will include a native plant palette, and establishment period, as well as success criteria and monitoring requirements. In addition, a monetary contribution may be provided to the Grand Canal Restoration Project fund for wider restoration of the canal banks.

MM BIO-5: Water Quality Monitoring during Construction. Water quality shall be monitored by the qualified biologist or a water quality specialist to ensure that no substantial increases in turbidity occur during construction, and that no erosion occurs on the west bank during in-water construction activities. The contractor shall ensure compliance with RWQCB Section 401 Water Quality Certification, USACE Section 404 authorization, applicable water-quality related best management practices, and the Storm Water Pollution Prevention Plan.

MM BIO-7: Silt Fencing at Construction Limits. (a) Construction limits shall be identified using silt fencing, which shall be installed under the supervision of a qualified biologist prior to commencement of work. (b) Construction personnel shall strictly limit their activities, vehicles, equipment, and construction materials to the construction footprint, including designated laydown and staging areas, and routes of travel. (c) The construction areas shall consist of the minimal area necessary to complete the Proposed Action. (d) The fencing shall remain in place until the completion of all construction activities.

MM BIO-8: Environmentally Sensitive Habitat Area (ESHA) Protection. Existing functions and values in ESHA shall be protected, enhanced, and restored as necessary to previous undisturbed conditions in accordance with applicable USACE, RWQCB, CCC, or City of Los Angeles requirements.

MM BIO-9: Restoration of Mudflats within Grand Canal. The temporary work area in the Grand Canal within mudflat/open water shall be returned to pre-construction grade and contours following construction.

4 CONCLUSIONS

The Action Area contains potential EFH for Pacific Coast Groundfish and Coastal Pelagic Species. Although debris racks on the tide gates connecting Ballona Lagoon and Grand Canal to open water in the Marina del Ray Channel and Pacific Ocean would prevent adults of larger fish species from using the Action Area, smaller fish would have access, and may use the Action Area for foraging and rearing.

As described in Section 3, the Proposed Action would have adverse effects on EFH designated by the Pacific Coast Groundfish and Coastal Pelagic Species FMPs, such as:

- Temporary habitat alteration from increases in turbidity and pile-driving noise (3.8 acres);
- Temporary loss of tidal waters and wetlands (0.092 and 0.012 acre, respectively) in the cofferdam area; and
- Temporary loss of benthic invertebrates following excavation of intertidal habitat in the cofferdam area (an area of 0.104 acre).

The temporary effects from underwater noise and increase in turbidity would be very brief in duration: on the order of days. The temporary loss of tidal waters and wetlands would be of a longer duration (on the order of months), but would affect a very small portion of EFH available in the region. There would be no permanent effects to EFH in the Action Area. With these considerations in mind, the adverse effects to EFH that are anticipated would not be substantial. With implementation of the Avoidance and Minimization Measures provided in Section 3.1.4, no additional conservation measures for EFH are recommended.

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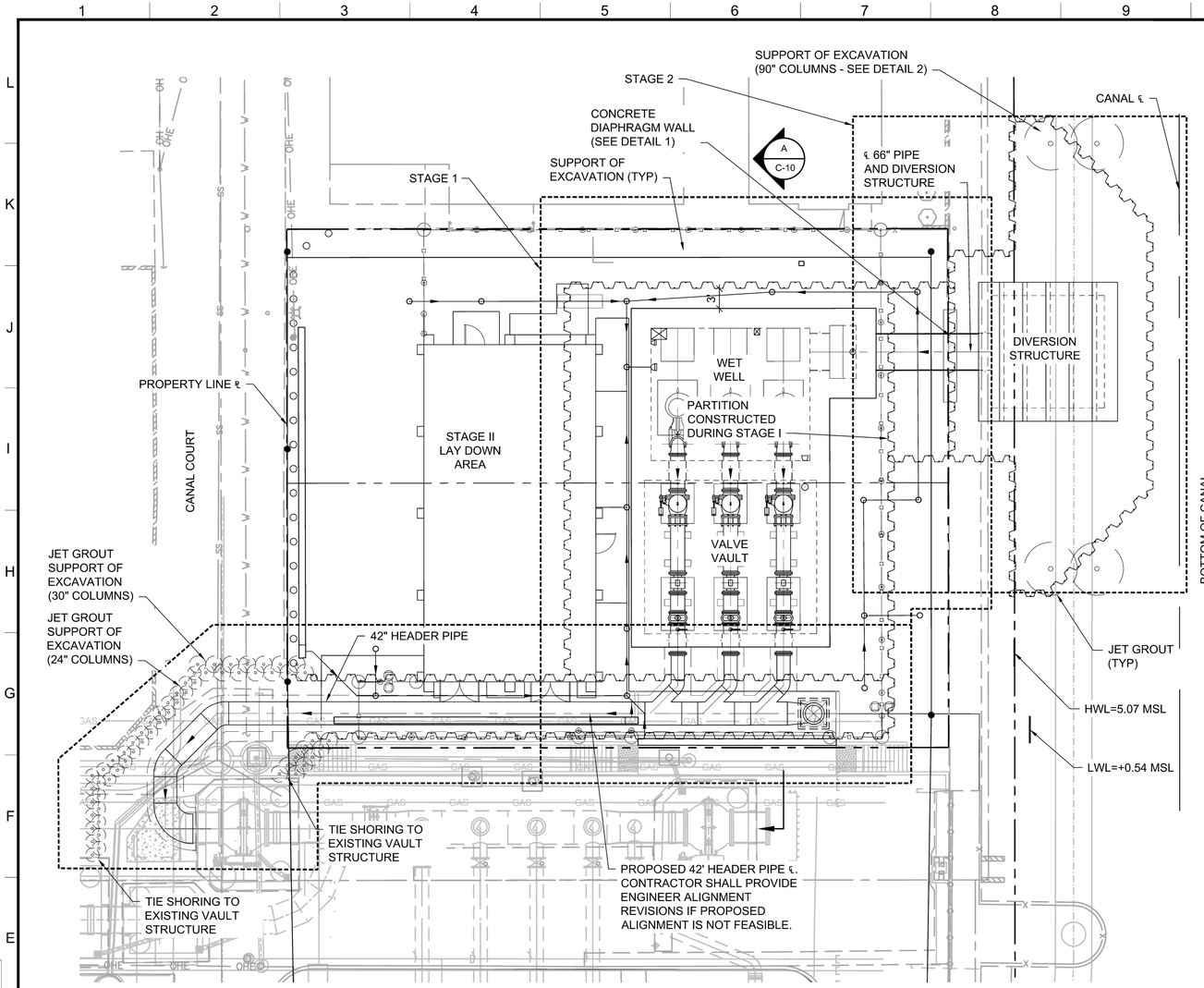
Appendix A

VAPP Design Drawings



PLAN

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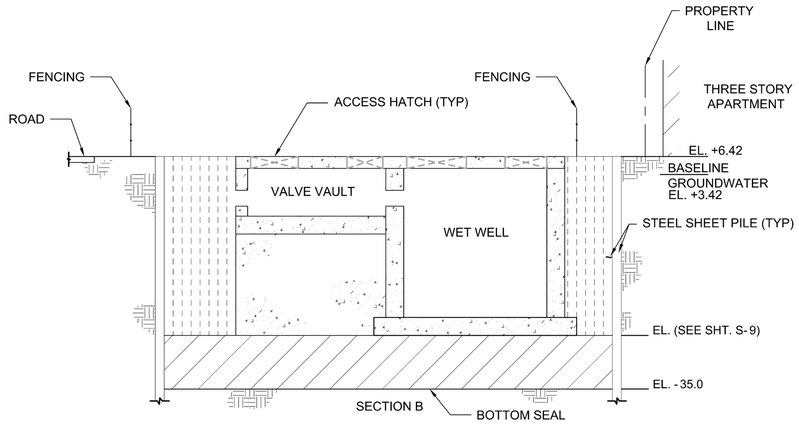
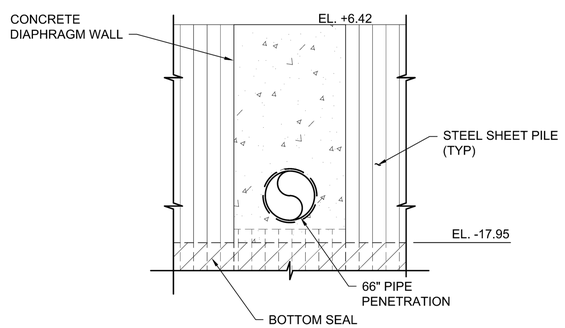


C-10	SECTION A
SCALE: NOT TO SCALE	C-10

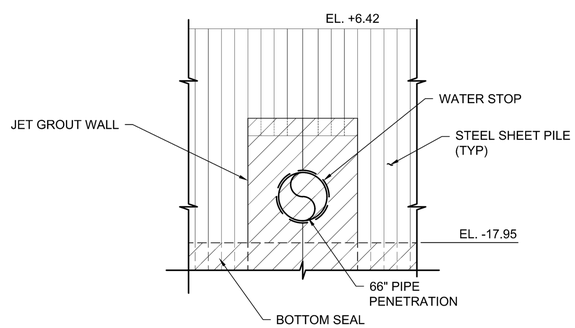
NOTES

1. THE CONTRACTOR IS RESPONSIBLE FOR THE DESIGN OF THE SUPPORT OF EXCAVATION.
2. THE SUPPORT OF EXCAVATION ITEMS SHOWN ARE SCHEMATIC OPTIONS FOR SUPPORT OF EXCAVATION.
3. PROVIDE ACCESS AND BARRICADES PER CAL OSHA AND LOS ANGELES DOT REQUIREMENTS. SPLASH SCREENS SHALL BE ERECTED ON TOP OF THE BARRICADES TO A MINIMUM HEIGHT OF 8-FT IN THE VICINITY OF ANY EXCAVATION TO BE PERFORMED IN THE "WET". THE CONTRACTOR SHALL REPLACE OR REPAIR THE SPLASH SCREEN WHEN DAMAGED.
4. DESIGN THE WATER-TIGHT EXCAVATION SUPPORT SYSTEMS PER REQUIREMENTS IN THE SPECIFICATIONS. SUBMIT ALL REQUIRED DESIGN DETAILS TO THE CITY FOR APPROVAL. ALL ENGINEERING CALCULATIONS, DESIGN DRAWINGS, AND WORK PLANS SHALL BE PREPARED AND STAMPED BY PROFESSIONAL CIVIL OR STRUCTURAL ENGINEER(S) REGISTERED IN THE STATE OF CALIFORNIA.
5. DESIGN GROUNDWATER TABLE ELEVATIONS SHALL BE TAKEN FROM THE GEOTECHNICAL REPORT DATED DECEMBER 14, 2015 AND SUPPLEMENTAL REPORT DATED JUNE 27, 2016. UNLESS OTHERWISE NOTED, ALL ELEVATIONS SHOWN REFERENCE THE NORTH AMERICAN VERTICAL DATUM OF 1988 (NAVD88).
6. INSIDE BRACING (IF REQUIRED) NOT SHOWN FOR CLARITY.
7. THE CONTRACTOR SHALL COORDINATE THE SHORING METHOD AND SEQUENCING OF SHORING INSTALLATION AND REMOVAL WITH THE INSTALLATION OF ELECTRICAL CONDUIT RUNS AND OTHER FEATURES TO BE INSTALLED CONCURRENT WITH AND SUBSEQUENT TO THE CONSTRUCTION OF THE BURIED STRUCTURES.
8. SHORING SYSTEMS (IF REQUIRED) FOR ELECTRICAL BUILDING, ELECTRICAL EQUIPMENT, AND OTHER SUBSURFACE WORK NOT SHOWN.
9. A PRE-DRILL MEETING SHALL BE REQUIRED WITH INSPECTOR, SOIL ENGINEER, CONTRACTOR, AND CONSTRUCTION MANAGER PRIOR TO DRILLING.



DETAIL 1

SCALE: NOT TO SCALE



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CIP NO. C922

INDEX NO. D-31898

THIS PLAN WAS ELECTRONICALLY SIGNED AND STAMPED

DAVID L. FULKS — PROFESSIONAL ENGINEER — C85093 — CIVIL ENGINEERING — STATE OF CALIFORNIA — 6/7/2018

GARY LEE MOORE, P.E. — CITY ENGINEER

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	LIC. NO. CA-85093	8/31/17
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CHECKED BY:	GREG BASYDOLA	8/31/17
APPROVED BY:	VENU KOLLI	8/31/17

DESIGN GROUP

VERTICAL CONTROL: NAVD 88 (2000)
HORIZONTAL CONTROL: NAD83, ZONE 5, EPOCH 1991.5

SHEET TITLE: SHEET PILE EXCAVATION SUPPORT PLAN

PROJECT: VENICE AUXILIARY PUMPING PLANT

ADDRESS: 133 HURRICANE STREET LOS ANGELES, CALIFORNIA

ARCADIS
LEGAL ENTITY:
ARCADIS U.S., INC.
445 S. FIGUEROA ST.
SUITE 3650
LOS ANGELES
CA 90071

WORK ORDER NO. SZC12923

DRAWING NO. C-10

SHEET 16 OF 128 SHEETS

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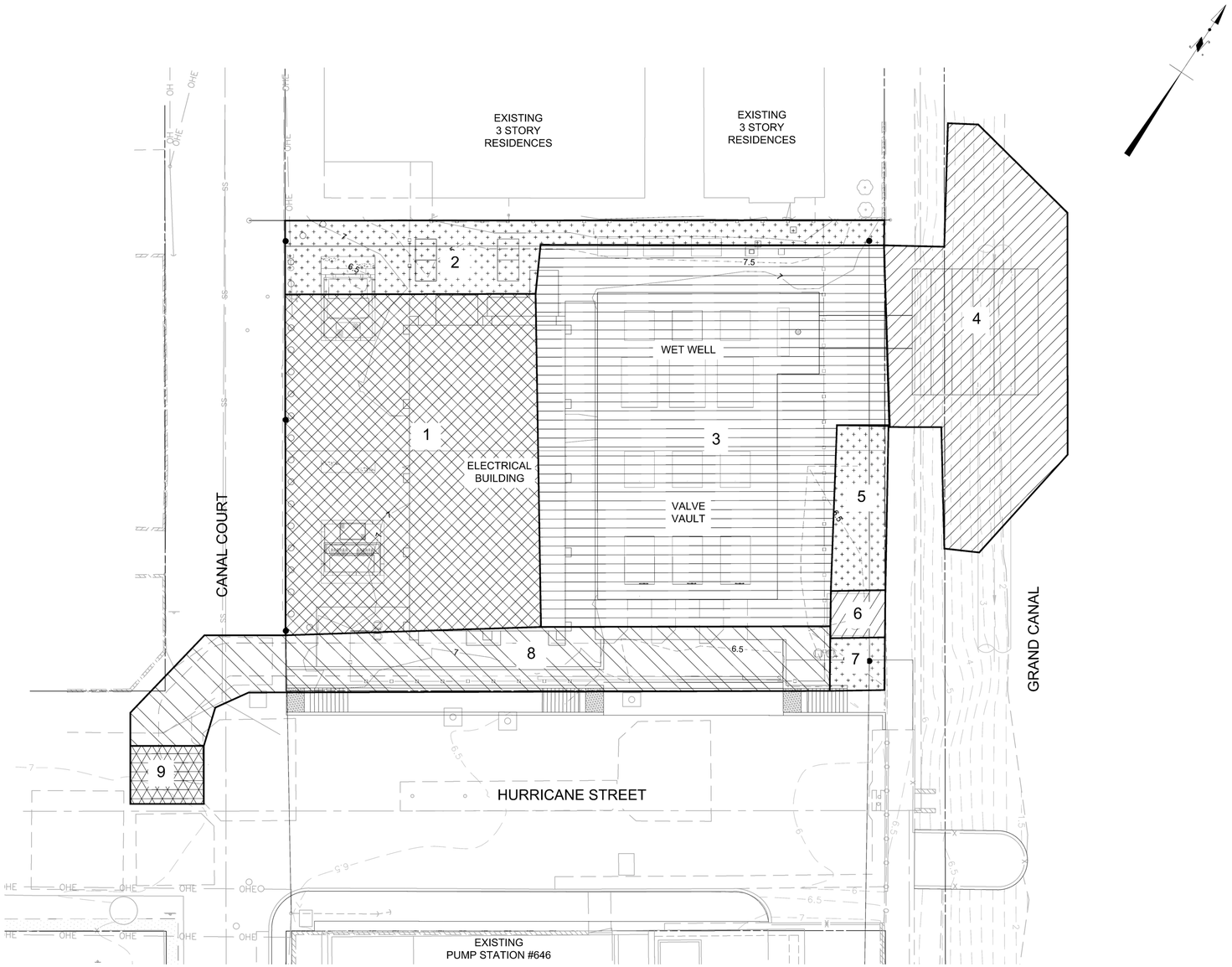

EXCAVATION LEGEND

- EXCAVATION DEPTH 0-6 FT
- EXCAVATION DEPTH 6-7 FT
- EXCAVATION DEPTH 11-12 FT
- EXCAVATION DEPTH 14-15 FT
- EXCAVATION DEPTH 23-24 FT
- EXCAVATION DEPTH 29-30 FT

CUT AND FILL ESTIMATE

SURFACE ESTIMATE

CUT: 69 CY
FILL: 10 CY
NET: 59 CY CUT

OVERALL EXCAVATION ESTIMATE

	CUT	FILL	NET CUT/FILL
AREA 1:	1,850 CY	770 CY	1,080 CY CUT
AREA 2:	510 CY	510 CY	0 CY
AREA 3:	11,340 CY	5,360 CY	5,980 CY CUT
AREA 4:	5,730 CY	2,030 CY	3,700 CY CUT
AREA 5:	20 CY	10 CY	10 CY CUT
AREA 6:	30 CY	30 CY	0 CY
AREA 7:	N/A	N/A	N/A
AREA 8:	1,530 CY	560 CY	970 CY CUT
AREA 9:	1,080 CY	175 CY	905 CY CUT

TOTAL: 17,290 CY 8,580 CY 8,710 CY CUT

NOTES:

1. FILL ESTIMATE IS NATIVE FILL. ENGINEERED FILL IS NOT ESTIMATED IN THIS ESTIMATE.
2. EXCAVATION IN TRENCHES WILL BE BACKFILLED WITH PIPE BEDDING AS INDICATED IN THESE PLANS AND NATIVE FILL.
3. SURFACE ESTIMATE IS SURFACE GRADING ONLY AND NOT EXCAVATION.
4. ESTIMATES DO NOT INCLUDE ANY ADJUSTMENT FACTORS.

0 5' 10' 20'
SCALE: 1" = 10'

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CITY OF LOS ANGELES DEPARTMENT OF PUBLIC WORKS BUREAU OF ENGINEERING

ENGINEERING
CITY OF LOS ANGELES

NO.	REVISIONS:	DATE:	BY:

INDEX NO. D-31898

CIP NO. C922

THIS PLAN WAS ELECTRONICALLY SIGNED AND STAMPED.

REGISTERED PROFESSIONAL ENGINEER JENA L. PRIOR 79699 CIVIL STATE OF CALIFORNIA 6/5/18

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LIC. NO. CA-79699

VERTICAL CONTROL: NAVD 88 (2000)
HORIZONTAL CONTROL: NAD83, ZONE 5, EPOCH 1991.5

SHEET TITLE: CUT AND FILL EXHIBIT

PROJECT: VENICE AUXILIARY PUMPING PLANT

ADDRESS: 133 HURRICANE STREET
LOS ANGELES, CALIFORNIA

WORK ORDER NO. SZC12923

DRAWING NO. C-16

SHEET 24 OF 140 SHEETS

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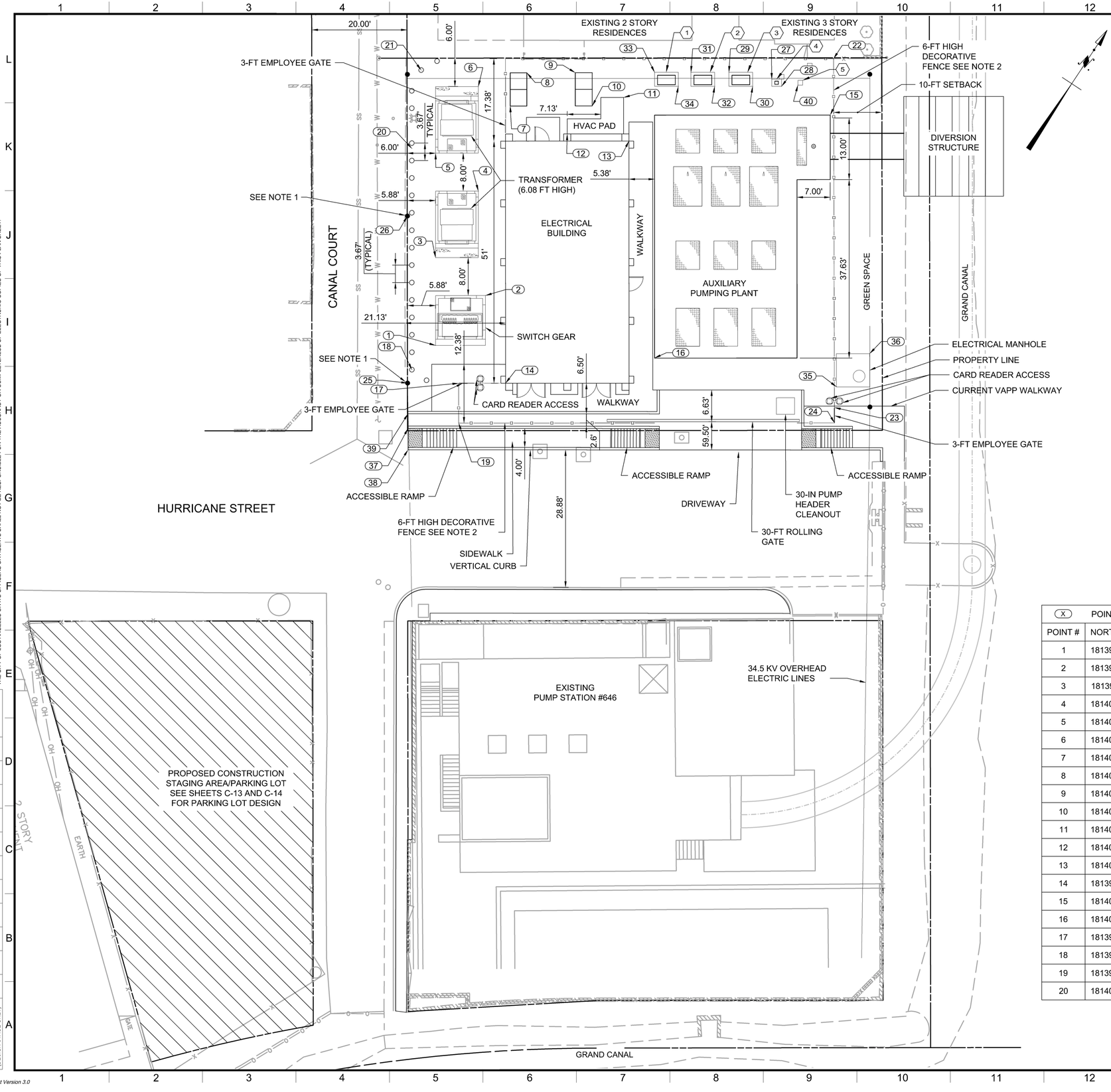

NOTES

1. CONTRACTOR SHALL VERIFY LOCATION OF NEW POWER POLE AND AVOID CONFLICT WITH OTHER SITE FEATURES.
2. DECORATIVE FENCE SHALL BE A MAXIMUM OF 6-FT IN HEIGHT FROM GROUND LEVEL.

SHEET KEYNOTES

1. TERMINATION BOX: TB-P6, PULLBOX: TB-P6A.
2. TERMINATION BOX: TB-P7, PULLBOX: TB-P7A.
3. TERMINATION BOX: TB-P8, PULLBOX: TB-P8A.
4. TOD: 2' BG, APPROXIMATE DIMENSIONS: 0.61'H X 1.18'W
5. COMBUSTIBLE GAS PANEL 1:CGP1

STORMWATER POLLUTION PREVENTION PLAN AND BEST MANAGEMENT PRACTICE NOTES:

1. THE CONTRACTOR WILL REDUCE CONSTRUCTION STORMWATER DISCHARGES TO THE MAXIMUM EXTENT PRACTICABLE IN ACCORDANCE WITH THE LOS ANGELES COUNTY MS4 PERMIT FOR THE LANDSIDE PORTIONS OF THE PROPOSED PROJECT. THE FOLLOWING BMPS FOR EROSION CONTROL, SEDIMENT CONTROL, NON-STORMWATER MANAGEMENT, AND WASTE MANAGEMENT DURING CONSTRUCTION WILL BE IMPLEMENTED AS PART OF THE PROPOSED PROJECT.
2. OTHER STANDARD OPERATING PROCEDURES AND BMPS FOR CITY CONSTRUCTION PROJECTS WILL BE IMPLEMENTED, INCLUDING: BMPS FOR IN WATER WORK, SUCH AS TURBIDITY CURTAINS AND TRASH BOOMS.
3. THE CONTRACTOR WILL PERFORM CONSTRUCTION ACTIVITIES WITHIN THE GRAND CANAL (A NAVIGABLE WATER OF THE UNITED STATES) IN ACCORDANCE WITH PROVISIONS OF SECTION 404 (OF THE CWA), AND SECTION 10 (OF THE RHA) PERMIT FROM THE USACE.
4. ARCADIS WILL SECURE A SECTION 401 (OF THE CWA) WATER QUALITY CERTIFICATION FROM THE LARWQCB FOR CONSTRUCTION ACTIVITIES WITHIN THE GRAND CANAL AND WILL COMPLY WITH CONDITIONS OF THAT CERTIFICATION, INCLUDING STANDARD WDRS.
5. THE CONTRACTOR WILL ALSO COMPLY WITH GENERAL WASTE DISCHARGE REQUIREMENTS FOR DISCHARGES OF GROUNDWATER FROM CONSTRUCTION AND PROJECT DEWATERING TO SURFACE WATERS IN COASTAL WATERSHEDS OF LOS ANGELES AND VENTURA COUNTIES (NPDES) PLEASE REFER TO SPECIFICATION 01571 FOR ADDITIONAL STORMWATER POLLUTION CONTROL REQUIREMENTS.

(X)	POINT TABLE	
POINT #	NORTHING	EASTING
1	1813982.63	6421784.63
2	1813997.14	6421787.80
3	1813998.21	6421774.65
4	1814014.85	6421774.67
5	1814016.73	6421762.77
6	1814033.37	6421762.79
7	1814033.56	6421770.66
8	1814041.34	6421769.82
9	1814046.85	6421778.42
10	1814042.88	6421785.19
11	1814047.95	6421789.79
12	1814035.08	6421783.93
13	1814040.84	6421795.68
14	1813983.87	6421801.32
15	1814068.30	6421828.42
16	1814005.28	6421824.88
17	1813978.54	6421793.01
18	1813975.63	6421783.17
19	1813971.49	6421797.54
20	1814014.85	6421758.04

(X)	POINT TABLE	
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25	1813972.77	6421783.94
26	1814002.38	6421764.94
27	1814068.02	6421813.98
28	1814067.88	6421816.52
29	1814064.38	6421805.60
30	1814064.59	6421811.41
31	1814060.07	6421798.86
32	1814060.28	6421804.67
33	1814055.93	6421792.42
34	1814056.14	6421798.22
35	1814020.82	6421860.40
36	1814030.49	6421862.52
37	1813964.80	6421789.16
38	1813960.99	6421791.60
39	1813967.39	6421787.51

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CIP NO. C922

INDEX NO. D-31898

REGISTERED PROFESSIONAL ENGINEER
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79699
CIVIL
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GARY LEE MOORE, P.E. CITY ENGINEER

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DRAWN BY:	JENA PRIOR	8/31/17
CHECKED BY:	GREG BASYOOLA	8/31/17
APPROVED BY:	VENU KOLLI	8/31/17

VERTICAL CONTROL: NAVD 88 (2000)
HORIZONTAL CONTROL: NAD83, ZONE 5, EPOCH 1991.5

SHEET TITLE: CONSTRUCTION STAGING PLAN

PROJECT: VENICE AUXILIARY PUMPING PLANT

ADDRESS: 133 HURRICANE STREET LOS ANGELES, CALIFORNIA

WORK ORDER NO. SZC12923

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HABITAT MITIGATION AND MONITORING PLAN FOR TEMPORARY IMPACTS ASSOCIATED WITH THE VENICE AUXILIARY PUMPING PLANT PROJECT
LOS ANGELES COUNTY, CALIFORNIA

USACE Section 404 Individual Permit (Pending - SPL-2015-00893)

RWQCB Section 401 Water Quality Certification (Pending)

CCC Coastal Development Permit (Pending)

PREPARED FOR:

City of Los Angeles Department of Public Works
Bureau of Engineering, Environmental Management Group
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Los Angeles, CA 90015
Contact: Eileen Schoetzow, Environmental Supervisor I
213-485-5751

PREPARED BY:

ICF
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Irvine, CA 92618
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949.333.6634

May 2019

ICF. 2019. (Draft) Habitat Mitigation and Monitoring Plan for Temporary Impacts Associated with the Venice Auxiliary Pumping Plant Project, Los Angeles County, California. May 2019. (ICF 00279.18) Irvine, CA. Prepared for the City of Los Angeles Department of Public Works Bureau of Engineering, Environmental Management Group.

Plan Distribution

Add Applicable Plan Recipients

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List of Acronyms and Abbreviations

Amsl	above mean sea level
APN	Assessor's Parcel Numbers
CCC	California Coastal Commision
CDFW	California Department of Fish and Wildlife
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
HMMP	Habitat Mitigation and Monitoring Plan
LABOE	Los Angeles Bureau of Engineers
mgd	Millons of gallons per day
RWQCB	Regional Water Quality Control Board
USACE	U.S. Army Corps of Engineers
USGS	U.S. Geological Survey
VAPP	Venice Auxiliary Pumping Plant
VPP	Venice Pumping Plant

Chapter 1
Project Information

1.1 Project Location, HMMP Purpose

This Habitat Mitigation and Monitoring Plan (HMMP) has been prepared for the Venice Auxiliary Pumping Plant (VAPP) project (Project) on behalf of Los Angeles Bureau of Engineers (LABOE). The project is located at the northeast corner of Hurricane Street and Canal Court in the community of Venice, Los Angeles County, CA (Figure 1). The project site is mapped in Township 2 South, Range 15 West, Section 21 U.S. Geological Survey (USGS) 7.5-minute "Venice" quadrangle map (USGS 1964) (Figure 2).

The Venice Auxiliary Pumping Plant project will occur on a City of Los Angeles owned vacant lot (Assessor's Parcel Numbers [APN] 4225-008-904 located immediately north of the existing Venice Pumping Plant. In addition, the project will require the use of up to two laydown areas located on vacant lots in the vicinity. Laydown area 1 (APN 4225-010-016) is located immediately south of the proposed VAPP location. Laydown area 2 consists of two lots (APNs 4225-013-904 and 4225-013-153) located on the east side of the channel across from the proposed VAPP location. The project site and two laydown areas are identified on Figure 3.

The purpose of this HMMP is to outline the implementation, maintenance, monitoring and management of waters and habitats provided as mitigation to offset temporary construction impacts associated with the project. This plan was prepared in anticipation of permit requirements of the U.S. Army Corps of Engineers (USACE), Regional Water Quality Control Board (RWQCB), and California Coastal Commission (CCC). Once permits have been issued, this HMMP will be updated in accordance with applicable permit conditions.

This HMMP follows the USACE regulatory requirements for the preparation of mitigation plans pursuant to *2008 Clean Water Act (CWA) Section 404 Final Compensatory Mitigation Rule (33 CFR 332.4(c)). Pursuant to 33 CFR 332.4(c) t*he mitigation plan addresses the following:

1. Objectives. A description of the resource type(s) and amount(s) that will be provided, the method of compensation (restoration, establishment, preservation etc.), and how the anticipated functions of the mitigation project will address watershed needs.
2. Site selection. A description of the factors considered during the site selection process. This should include consideration of watershed needs, onsite alternatives where applicable, and practicability of accomplishing ecologically self-sustaining aquatic resource restoration, establishment, enhancement, and/or preservation at the mitigation project site.
3. Site protection instrument. A description of the legal arrangements and instrument including site ownership that will be used to ensure the long-term protection of the mitigation project site.
4. Baseline information. A description of the ecological characteristics of the proposed mitigation project site, in the case of an application for a DA permit, the impact site. This may include descriptions of historic and existing plant communities, historic and existing hydrology, soil conditions, a map showing the locations of the impact and mitigation site(s) or the geographic coordinates for those site(s), and other characteristics appropriate to the

type of resource proposed as compensation. The baseline information should include a delineation of waters of the United States on the proposed mitigation project site. A prospective permittee planning to secure credits from an approved mitigation bank or in-lieu fee program only needs to provide baseline information about the impact site.

5. Determination of credits. A description of the number of credits to be provided including a brief explanation of the rationale for this determination.
    - For permittee-responsible mitigation, this should include an explanation of how the mitigation project will provide the required compensation for unavoidable impacts to aquatic resources resulting from the permitted activity.
    - For permittees intending to secure credits from an approved mitigation bank or in-lieu fee program, it should include the number and resource type of credits to be secured and how these were determined.
6. Mitigation work plan. Detailed written specifications and work descriptions for the mitigation project, including: the geographic boundaries of the project; construction methods, timing, and sequence; source(s) of water; methods for establishing the desired plant community; plans to control invasive plant species; proposed grading plan; soil management; and erosion control measures. For stream mitigation projects, the mitigation work plan may also include other relevant information, such as planform geometry, channel form (e.g., typical channel cross-sections), watershed size, design discharge, and riparian area plantings.
7. Maintenance plan. A description and schedule of maintenance requirements to ensure the continued viability of the resource once initial construction is completed.
8. Performance standards. Ecologically-based standards that will be used to determine whether the mitigation project is achieving its objectives.
9. Monitoring requirements. A description of parameters monitored to determine whether the mitigation project is on track to meet performance standards and if adaptive management is needed. A schedule for monitoring and reporting monitoring results must be included.
10. Long-term management plan. A description of how the mitigation project will be managed after performance standards have been achieved to ensure the long-term sustainability of the resource, including long-term financing mechanisms and the party responsible for long-term management.
11. Adaptive management plan. A management strategy to address unforeseen changes in site conditions or other components of the mitigation project, including the party or parties responsible for implementing adaptive management measures.
12. Financial assurances. A description of financial assurances that will be provided and how they are sufficient to ensure a high level of confidence that the mitigation project will be successfully completed, in accordance with its performance standards.

1.2 Project Background and Project Site Ownership

The City of Los Angeles currently owns and operates the existing Venice Pumping Plant (VPP) located on Hurricane Street where Grand Canal confluences with Ballona Lagoon in the community of Venice (Figure 3). The pumping plant is the City's largest pumping plant and is considered a critical facility to convey wastewater from its tributary area. There have been several occasions, beginning in the 1990s and extending through the early 2000s, when influent flows to the VPP during periods of wet weather nearly exceeded the combined pumping capacity (90 mgd) of all five pumps while working simultaneously. This resulted in a near miss of sewage spill into the Grand Canal and Ballona Lagoon because the wet wells and pumps were almost entirely inundated. Exceeded sewer capacity would require emergency discharges directly to the Grand Canal and Ballona Lagoon or overflows into the surrounding street network. Because of these conditions, the City and LABOE, began planning and designing projects that will upgrade and enhance the VPP. The City proposes to construct an auxiliary pumping plant adjacent to the existing VPP and make additional upgrades to the existing facilities to increase reliability and capacity at VPP.

Property Ownership Contact Information:

City of Los Angeles
1149 Broadway Avenue, Suite 700
Los Angeles, CA 90015
Contact: Gary Lee Moore
Phone: (213) 485-4935
Email: Gary.lee.moore@lacity.org

1.3 Project Description

The Proposed Project will be built on three vacant lots with a total combined area of approximately 15,000 square feet. As shown in Figure 2, the project will include a number of components:

- One building, two stories and approximately 32 feet in height, with a total of 2,500 square feet that will house the operational control center for the plant, related electrical equipment, and employee workstations;
- Three 18 mgd wet-pit submersible pumps, constructed underground;
- Electrical equipment, utility connections, instrumentation and controls, transformers, and generators;
- A (17- by 17-foot) submerged diversion structure on the existing Coastal Interceptor Sewer (CIS), the top of which will buried (depth) below the lowest elevation of the Grand Canal's bed;
- Concrete wet well, influent piping and a sluice gate;
- A new 66-inch diameter sewer segment to connect VAPP to the new diversion structure;
- Fencing with blinds and vegetation for screening the VAPP building;

- Parking – a total of eight parking spaces will be provided at 128 Hurricane Street to allow for Project required employee, delivery/visitor, and Beach Impact Zone parking, and public parking, including the relocation of coastal parking; and
- Construction of the new diversion structure and new 66-inch sewer pipe will require the dewatering of a portion of Grand Canal along the western bank adjacent to the VAPP.

1.3.1 Cofferdam

To provide a dry work area, a cofferdam will be installed along the western bank of the Grand Canal as show in Figure 3. The cofferdam within the Grand Canal will be part of a two-celled cofferdam system required to install the below-ground facilities. Up 6,000 square feet of cofferdam will be installed within waters of the U.S. within the Grand Canal. The remaining portion will be installed in upland areas outside waters of the U.S. Within the Grand Canal, the cofferdam is expected to remain in place for up to six months. During this time, upstream and downsteam flows within the Canal will be maintained. The area within the cofferdam will be dewatered continuously throughout construction. A pump, situated within the cofferdam area will pump water from the cofferdam. Pumpwater will be treated, then discharged.

The cofferdam will be constructed using soldier piles and sheeting. Soldier piles will be driven into the Canal using a vibratory hammer or hydraulically pushed into the canal substrate. Sheet piles will then be installed between the soldier piles and the area within the cofferdam will be dewatered.

1.3.2 Excavation

Once the cofferdam is in place, excavation will occur. Within Grand Canal, an excavator situated on the upland area adjacent to Grand Canal will excavate to approximately 18 feet below the ground surface. Approximately 400 cubic yards will be excavated to install the diversion structure. Excavated materials will be stockpiled at one of the established Laydown Areas for later use to backfill within the Grand Canal or off-hauled to an appropriate landfill.

1.3.3 Diversion Structure and Connections

The diversion structure and new 66-inch sewer connection will be installed beneath Grand Canal. All work will occur within the cofferdam area. The diversion structure is 17 feet by 17 feet and will be located along the western bank of Grand Canal (Figure 4). The diversion structure will be constructed to allow flows to be diverted to the VAPP. The diversion structure will be below the grade of the Grand Canal's bed, by approximately 18 feet, and will not protrude aboveground into the Canal and will be buried beneath it. The diversion structure will allow flows to be diverted to either the VAPP or VPP depending on need. A gate will also be provided at the inlet of the VAPP to allow isolation for maintenance purposes.

A new, 66-inch pipe segment will be installed from the new diversion structure to the new wet well. The existing 66-inch pipe will connect the new diversion structure to VPP (Figure 5). The VAPP piping will connect to the new VPP replacement manifold that was recently constructed in Hurricane Street with use of a 42--inch flange at its west end. From there, the piping will continue back to the new valve vault at the VAPP.

1.3.4 Recontour and Revegetation

Once the diversion structure and associated pipe connections have been constructed and Grand Canal bottom has been backfilled and compacted to pre-project conditions. Backfilling of the Grand Canal will be done with the material that was temporarily stockpiled. The cofferdam piles and sheeting will be removed using a crane situated in the upland area adjacent to Grand Canal. The western bank of Grand Canal will be restored and recontoured to pre-project elevation and vegetation will be restored pursuant to the HMMP.

1.4 Project Impacts

The project was designed to minimize impacts to jurisdictional resources to the extent feasible. The cofferdam is the minimum size necessary to complete the construction of the diversion structure and piping. The project will temporarily impact the following as depicted on Figures 6a and 6b:

- 0.028 acre of USACE Section 404 Non-wetland Waters of the U.S. (WoUS)
- 0.003 acre of USACE Section 404 Wetlands
- 0.025 acre of USACE Section 10 Navigable Waters
- 0.004 acre of CCC Environmentally Sensitive Habitat Areas (ESHA) 1-parameter wetlands

Mitigation for temporary impacts to USACE Non-wetland WoUS, and Navigable Waters is being accomplished through backfilling and re-grading the temporarily impacted portions of the Grand Canal channel bed to pre-project contours, and by restoring a combined 0.004 acre of USACE wetland and southern coastal salt marsh habitat on the west bank of Grand Canal.

1.5 Project Permits

This HMMP was prepared to address the terms, mitigation measures, and conditions anticipated in the following regulatory permits:

- USACE Section 404 Individual Permit (Pending - SPL-2015-00893)
- RWQCB Section 401 Water Quality Certification (Pending)
- CCC Coastal Development Permit (Pending)

1.6 Location of Proposed Mitigation

All mitigation will be conducted onsite within the temporary impact areas as described above and depicted in Figure 6a, 6b and 8.

1.7 Description of Mitigation Activities

Describe activities (back filling and recontouring of canal bed, recontouring west bank, seeding and planting of west bank, irrigation, monitoring, reporting.

Chapter 2
Baseline Information and Impacts

2.1 Project Site Description

The project is located within an urban area within the City of Los Angeles community of Venice. The project area is surrounded on the north, west, and south by residential land uses and to the east by the Grand Canal. The Grand Canal confluences with the Ballona Lagoon, located to the south and southeast. Residential land uses are also located immediately east of the Grand Canal.

The project will occur on two undeveloped parcels that are currently surrounded by a chain link fence. Two other undeveloped lots will function as laydown areas during construction. Elevations within the study area range from approximately 0 feet to approximately 10 feet above mean sea level (MSL).

2.2 Vegetation Types

Vegetation in the project area and vicinity (within 500 feet of the project site) consists of ornamental vegetation associated with developed and/or disturbed lots surrounding the Grand Canal and Ballona Lagoon as well as native and non-native vegetation communities. Vegetation types/land uses within the vicinity of the project are identified below in Table 1. Figure 7 depicts the location of each vegetation community within the study area. A short description of each vegetation type is provided below the table.

Table 1. Vegetation Communities/Land Use/Land Condition within the 500 feet of the Project Site

Vegetation Community/Land Use/Land Condition	Acres
Developed	24.60
Disturbed/Ruderal	0.18
Open Water	3.13
Southern Coastal Salt Marsh	0.90
Coastal Brackish Marsh	0.16
Southern Foredunes	0.43
Southern Coastal Bluff Scrub	0.35
Total	29.74

2.2.1 Developed

Developed lands were mapped in association with the residential structures and surface roads include ornamental vegetation typically associated with the developed areas such as Mexican fan palm (*Washingtonis robusta*), acacia (*Acacia* sp.), eucalyptus (*Eucalyptus* sp.), Peruvian pepper tree (*Schinus molle*), iceplant (*Carpobrotus* sp.), and myoporum (*Myoporum* sp.).

2.2.2 Disturbed/Ruderal

Disturbed/ruderal lands were mapped on the eastern side of the Grand Canal associated with a vacant lot surrounded by developed lands to the north, east, and south. The area contains a small footpath leading from the sidewalk adjacent to the Grand Canal to the Via Dolce surface street. This area is dominated by non-native and native annual and perennial species such as iceplant, garland chrysanthemum (*Glebionis coronaria*), telegraphweed (*Heterotheca grandiflolia*), cheeseweed (*Malva parviflora*), Bermuda grass (*Cynodon dactylon*), and Australian saltbush (*Atriplex semibaccata*).

2.2.3 Open Water

Open Water consists of the tidal influenced Ballona Lagoon and within the Grand Canal. Ballona Lagoon connects to Marina del Rey harbor, approximately 4,000 feet to the south of the project site, through a flood gate system under Via Marina street. Mudflats occur within the tidal-influenced portions of Ballona Lagoon and exposed areas of mudflats fluctuate with tide.

2.2.4 Southern Coastal Salt Marsh (Holland 52120)

This vegetation type was mapped along the edges of the Grand Canal and Ballona Lagoon. This area is dominated by native wetland species such as Pacific pickleweed (*Sarcocornia pacifica*), batis (*Batis maritima*), wooly seablight (*Suaeda taxifolia*, California Native Plant Society [CNPS] California Rare Plant Rank [CRPR] 4.2), spearscale (*Atriplex prostrata*), and fleshy jaumea (*Jaumea carnosa*). The upper portions of this area support species such as salt grass (*Distichilis spicata*), five-hooked bassia (*Bassia hyssopifolia*), beach bur (*Ambrosia chamissonis*), and alkali heath (*Frankenia salina*) indicating the start of the wetland-upland interface. Two "islands" with some coastal salt marsh vegetation were mapped within the Ballona Lagoon that are periodically submerged by tidal waters each day.

2.2.5 Coastal Brackish Marsh (Holland 52200)

This vegetation type was mapped immediately above the tidal zone of the Grand Canal and Ballona Lagoon. This area is dominated by species such as alkali heath, salt grass, five-hooked bassia, woolly seablight, beach bur, alkali heliotrope (*Heliotropium curassavicum*), and deerweed (*Acmispon glaber*). The lower portion of this area transitions to wetland species such as pickleweed, batis, and fleshy jaumea.

2.2.6 Southern Foredunes (Holland 21230)

This area was mapped on the western side of Ballona Lagoon within the southwestern portion of the study area. This area is dominated by upland coastal dune and maritime sage scrub species. Dominant species observed on the western side of the lagoon include beach bur, deerweed, bluff buckwheat (*Eriogonum parviflora*), red sand verbena (*Abronia maritima*, CNPS CRPR 4.2), beach evening primrose (*Camissonia cheiranthifolia*), southwestern spiny rush (*Juncus acutus* ssp. *leopoldii*, CNPS CRPR 4.2), telegraphweed, and Watson's saltbush (*Atriplex watsonii*).

2.2.7 Southern Coastal Bluff Scrub (Holland 31200)

This area was mapped on the eastern side of Ballona Lagoon. Dominant species observed in this area include southwestern spiny rush, California encelia (*Encelia californica*), California sagebrush (*Artemisia californica*), prickly-pear cactus (*Opuntia littoralis*), and lemonade berry (*Rhus integrifolia*).

2.3 Plants

Most plant species that were observed within the study area are considered common or expected within the study area vicinity and include a mix of native and non-native species. However, three special-status species were determined to be present within the study area: wooly seablite, southwestern spiny rush, and red sand verbena, each of which is CNPS CRPR List 4.2 species. In addition, suitable habitat for other special-status plant species is present within the study area.

Common native plant species observed during the habitat assessment included the following species: lemonade berry, California sagebrush, California encelia, telegraphweed, alkali heath, alkali heliotrope, prickly-pear cactus, deerweed, salt grass, western ragweed (*Ambrosia psilostachya*), coastal goldenbush (*Isocoma menziesii*), batis, Parish's pickleweed (*Arthrocnemum subterminale*), big saltbush (*Atriplex lentiformis*), Pacific pickleweed, salt dodder (*Cuscuta salina*), California sun cup (*Camissoniopsis* bisorta), bluff buckwheat, nightshade (*Solanum* sp.), and brittlegrass (*Setaria* sp.).

Common non-native species observed during the habitat assessment included: Mexican fan palm, acacia, eucalyptus, Australian saltbush, Bermuda grass, flax-leaved horseweed (*Erigeron bonariensis*), five---hooked bassia, cheeseweed, baby sun-rose (*Aptenia cordifolia*), fat-hen (*Atriplex prostrata*), hottentot fig (*Carpobrotus* sp.), Lamb's quarters (*Chenopodium album*), white-stem filaree (*Erodium moschatum*), garland chrysanthemum, grass poly (*Lythrum hyssopifolia*), myoporum, Peruvian pepper tree (Schinus mole), Brazilian pepper tree (*Schinus terebinthifolius*), sow thistle (*Sonchus* sp.), and puncturevine (*Tribulus terrestris*).

2.4 Wildlife

Wildlife species observed within the study area are considered common to the general vicinity. The majority of species recorded were birds such as mallard (*Anas platyrhynchos*), mourning dove (*Zenaida macroura*), Anna's hummingbird (*Calypte anna*), white-throated swift (*Aeronautes saxatalis*), barn swallow (*Hirundo rustica*), cliff swallow (*Petrochelidon pyrrhonota*), northern rough-winged swallow (*Stelgidopteryx serripennis*), black phoebe (*Sayornis nigricans*), American crow (*Corvus brachyrhynchos*), common raven (*Corvus corax*), European starling (*Sturnus vulgaris*), house finch (*Carpodacus mexicanus*), double-crested cormorant (*Phalacrocorax auritus*), great blue heron (*Ardea herodias*), great egret (*Ardea alba*), osprey (*Pandion haliaetus*), American coot (*Fulica americana*), black-bellied plover (*Pluvialis squatarola*), willet (*Tringa semipalmata*), whimbrel (*Numenius phaeopus*), marbled godwit (*Limosa fedoa*), and belted kingfisher (*Ceryle alcyon*).

Marine invertebrates observed included buckshot barnacles (*Chthalamus* sp.), blue mussel (*Mytilus edulis*), California horn snail (*Cerithidea californica*), California mussel (*Mytilus*

californianus), checkered limpet (*Lottia strigatella*), Gould's bubble snail (*Bulla gouldiana*), and Pacific oyster (*Ostrea lurida*).

Marine vertebrates observed included California corbina (*Menticirrhus undulates*) and topsmelt (*Atherinops affinis*).

2.5 Jurisdictional Waters and Wetlands

A jurisdictional delineation was conducted within the project footprint plus a 100-foot buffer. Two named features that could be subject to the jurisdiction of the USACE, RWQCB, and CCC were delineated: Ballona Lagoon and Grand Canal. These two features are treated as one for the purpose of this document. Both the Grand Canal and the Ballona Lagoon were determined to be subject to tidal influence. USACE and RWQCB potential jurisdictional areas within the 100-foot buffer study area total approximately 0.929-acre of Section 404 non-wetland waters of the U.S. and 0.075-acre of Section 404 wetland waters of the U.S. (Table 2). Additionally, 0.793-acre of potential USACE Section 10 navigable waters of the U.S. was mapped in the 100-foot buffer study area. Potential CCC jurisdiction within the 100-foot buffer study area totaled approximately 0.929-acre of one-parameter wetlands. Figures 6a and 6b depict the limits of each jurisdiction. Based on the lack of freshwater input and the historic context of this feature receiving any freshwater flows it was determined that the Grand Canal and the Ballona Lagoon is not subject to CDFW jurisdiction.

Table 2. Jurisdictional Delineation Summary (acres)

Study Area Feature	USACE Section 404 Non-Wetland Waters of the U.S./RWQCB Section 401 Non-Wetland Waters of the U.S.	USACE Section 404 Wetland Waters of the U.S./RWQCB Section 401 Wetland Waters of the U.S.	USACE Section 10 Navigable Waters of the U.S.	CCC 1-Parameter Wetlands
Ballona Lagoon and Grand Canal	0.929	0.075	0.793	0.929
Total	0.929	0.075	0.793	0.929

2.6 Vegetation/Land Use Impacts

Temporary impacts to vegetation communities/land uses will result in a total of 0.004 acre of short-term temporary impacts to native vegetation communities (excluding developed areas). These impacts would occur during the construction phase only and no permanent direct impacts to native vegetation communities will occur. Table 3 below presents the existing vegetation within the study area (500-foot buffer) and the impacts associated with the project.

Approximately 0.004 acre of temporary direct impacts will occur to the sensitive vegetation community Southern Coastal Salt Marsh, which is generally synonymous with *Sarcocornia pacifica* Herbaceous Alliance (Pickleweed Mats) and *Distichilis spicata* Herbaceous Alliance – Disturbed (Salt Grass Flats – Disturbed) as described by Sawyer et al (2009).

Table 3. Temporary and Permanent Impacts to Vegetation Communities/Land Uses

Vegetation Community/Land Use/Land Condition	Acres Within 500 feet of Project	Temporary Impacts (acres)
Developed (Vegetation Community)	24.60	0.001
Disturbed/Ruderal	0.18	---
Open water	3.13	0.027
Southern Coastal Salt Marsh)	0.90	0.004
Coastal Brackish Marsh	0.16	---
Southern Foredunes	0.43	---
Southern Coastal Bluff Scrub	0.35	---
Total	29.74	0.032

2.7 Jurisdictional Waters and Wetlands Impacts

The project occurs within the jurisdiction of several agencies including USACE, RWQCB, and CCC and will result in temporary direct impacts to aquatic resources, including existing wetland habitat. No permanent direct impacts will occur. Table 4 below and Figure 6a and 6b identify temporary impacts to jurisdiction regulated by each of the agencies.

Table 4. Temporary Impacts to Aquatic Resources (acres)

Study Area Feature	USACE Section 404 Non-Wetland Waters of the U.S./RWQCB Section 401 Non-Wetland Waters of the State	USACE Section 404 Wetland Waters of the U.S./RWQCB Section 401 Wetland Waters of the State	USACE Section 10 Navigable Waters of the U.S.[1]	CCC 1-Parameter Wetlands
Ballona Lagoon and Grand Canal	0.028	0.003	0.025	0.004
Total	0.028	0.003	0.025	0.004

1.USACE Section 404 Wetlands overlaps with CCC 1-Parameter Wetlands

2.USACE Section 10 overlaps with USCE Section 404 Non-wetland.

Chapter 3
Mitigation Requirements and Work Plan

3.1 Determination of Required Mitigation

Pursuant to the Section 404 Final Compensatory Mitigation Rule, the overall acreage, functions, values and services of wetlands should not be reduced within the watershed. As such, areas of temporary impact associated with the project will be restored to pre-project conditions or better to offset temporary losses to wetland WoUS, non-wetland WoUS, and CCC 1-parameter wetlands. The restoration of wetland and waters will restore the functions and values of the existing onsite resources. All mitigation will occur onsite and within the project watershed.

3.2 Mitigation Requirements

This mitigation plan outlines the implementation, maintenance, monitoring and management of waters and habitats provided as mitigation to offset temporary impacts associated with the project. The proposed mitigation plan would:

- Restore temporary impacts to waters and habitats to pre-project conditions or better;
- Retain existing onsite hydrology to create self-sustaining habitat;
- Restore impacts to woolly sea-blite (*Suaeda taxifolia*, CNPS CRPR 4.2 species);
- Address maintenance and monitoring methods during the habitat establishment period.

Habitat types to be restored include southern coastal salt marsh. No existing native habitats will be converted to other habitat types as part of this HMMP. Table 5 shows the proposed mitigation by mitigation type and vegetation community.

Table 5. Vegetation Communities and Aquatic Resources to be Restored

Vegetation Community/Land Use	Temporary Impacts (acres)	Onsite Restoration (acres)
Southern Coastal Salt Marsh	0.004	0.004
Total	0.004	0.004

3.3 Responsible Parties

The following sections define the role of each party responsible for implementation and success of the mitigation plan.

- Owner/Operator
- Restoration Ecologist
- Restoration Contractor

3.3.1 Owner/Operator

The owner/operator of the mitigation project is LABOE and will ultimately be responsible for permit compliance and implementation of this HMMP. The owner/operator will be responsible for obtaining the services of a qualified restoration ecologist and restoration contractor, as well as long term maintenance and preservation.

3.3.2 Restoration Ecologist

The owner/operator shall obtain the services of a qualified restoration ecologist with experience in the planning, design, and implementation of aquatic and estuary restoration projects in Southern California. The restoration ecologist will be responsible for oversight of all site preparation, installation, maintenance, monitoring and reporting for the mitigation project. The restoration ecologist will be responsible for coordination between the owner/operator and restoration maintenance contractor, as well as the resource agencies. The restoration ecologist will be responsible for directing the restoration maintenance contractor activities regarding the implementation of this HMMP and to assure the success of the mitigation project and compliance with the project permits and this HMMP.

3.3.3 Restoration Maintenance Contractor

The owner/operator shall obtain the services of a qualified restoration maintenance contractor with experience in native habitat maintenance and restoration in Southern California. The restoration maintenance contractor will be responsible for all site preparation activities including grading, initial non-native removal, plant and hydroseed installation, and irrigation, Following the installation of the mitigation site the restoration maintenance contractor will be responsible for maintaining the mitigation site including necessary protective fencing, regular non-native plant removal, replanting (if needed), regular watering (if needed), trash removal, and maintaining signage. The restoration maintenance ecologist will be responsible for performing maintenance tasks and facilitating compliance with site performance standards under the direction of the restoration ecologist. The restoration maintenance contractor will be responsible for coordinating with the restoration ecologist and the owner/operator regarding mitigation installation procedures, site maintenance, and any implementation of any adaptive management measures identified by the restoration ecologist.

3.4 Pre-Construction Project Activities

3.4.1 Pre-Construction Plant Survey, Nesting Bird Survey, and Biological Monitoring of Vegetation Removal

Pre-Construction Plant Survey

Prior to any initial ground disturbance activities, a plant survey of the impact area and adjacent area will be conducted to identify and map wooly seablite, spiny-leaved rush, red-sand verbena, and sea cliff buckwheat. The survey will satisfy Mitigation Measure Bio-1 as outlined in the project EIR and provided below.

MM-BIO 1: Special-Status Plant Surveys

To confirm the presence or absence of special-status plant species or sea cliff buckwheat (the host plant for El Segundo butterfly) within the disturbance footprint, a special-status plant survey shall be completed prior to construction. The focused survey shall be conducted by a qualified biologist during the appropriate blooming period, or when the plant is readily identifiable, prior to the start of construction activities. If any sensitive, non-listed plant species is found, then the individuals shall be clearly identified and avoidance measures shall be utilized to the extent practical.

If avoidance is not practical a count of impacted individuals will be conducted and the same number of individuals will be replanted during site installation.

Pre-Construction Nesting Bird Survey

A nesting bird survey will be conducted prior to any ground disturbance or vegetation removal between February 15 and August 31. The survey will satisfy Mitigation Measure Bio-6 as outlined in the project EIR and provided below.

MM-BIO 6: Nesting Bird Survey

If construction commences during the bird breeding season (February 15 through August 31), a preconstruction survey for nesting birds shall occur within three days prior to construction activities by an experienced avian biologist. The survey shall occur within all suitable nesting habitat within the project impact area and a 500-foot buffer. If nesting birds are found, an avoidance area shall be established in consultation with the resource agencies as appropriate by a qualified biologist around the nest until a qualified avian biologist has determined that young have fledged or nesting activities have ceased. The project site shall be re-surveyed if there is a lapse in construction activities for more than seven days during the bird breeding season.

Biological Monitor during Vegetation Removal Activities

A biological monitor will be present during any vegetation removal activities associated with the project to ensure no impacts to special-status wildlife occur. Monitoring of vegetation removal will satisfy Mitigation Measure Bio-2 as outlined in the project EIR and provided below.

MM-BIO-2: Monitor during Vegetation Removal

A qualified biologist shall monitor all vegetation removal and ground-disturbing activities, such as staging, grubbing and grading, for the duration of the project to ensure that practicable measures are being employed to avoid incidental disturbance of habitat outside the project footprint and to survey for sensitive wildlife species. When vegetation removal and ground-disturbing activities are not occurring, as-needed monitoring at the project site shall occur. Monitoring logs, as appropriate depending on project activities, shall be maintained for the duration of construction activities.

3.4.2 Construction Fencing

Prior to ground disturbance all areas of temporary impact to biological resources shall be delineated using silt fencing and visible (orange) construction fencing. The fencing shall be

maintained throughout the project construction duration and mitigation and monitoring period until determined to not be required by the restoration ecologist. Fencing of the construction limits will satisfy Mitigation Measure Bio-7 as outlined in the project EIR and provided below.

MM BIO-7: Silt Fencing at Construction Limits

Construction limits shall be identified using silt fencing, which shall be installed under the supervision of a qualified biologist prior to the commencement of work. Construction personnel shall strictly limit their activities, vehicles, equipment, and construction materials to the project footprint, including designated staging areas, and routes of travel. Construction areas shall consist of the minimal area necessary to complete the proposed project. The fencing shall remain in place until the completion of all construction activities and for at least one year to protect the restored habitat areas until plants are established.

3.5 Project Mitigation Area Site Preparation and Installation

3.5.1 Excavation, Stockpiling and Grading

During excavation all soils removed from the site will stockpiled and stored for the duration of the project. Following the completion of the work in Grand Canal and on the west bank of Grand Canal all stockpiled soils will be replaced within the temporary impact areas until original elevations and grades are achieved. The west bank of Grand Canal will be regraded to pre-project conditions.

3.5.2 Trash Removal and Non-Native Plant Removal

The restoration maintenance contractor shall be responsible for removing all trash and debris from the mitigation area prior to planting. Removal of trash and debris from the mitigation area shall be performed during each maintenance visit.

All non-native vegetation will be removed from the mitigation sites prior to planting and during each maintenance visit. Any non-native removal required will be conducted either by hand. Herbicide may only be used early in the growing season before non-natives have gone to flower and hand pulling may be done prior to seed set. Herbicide application shall be conducted by a licensed herbicide applicator. Only herbicides approved for use in or near aquatic environments shall be utilized.

3.5.3 Irrigation/Watering

Due to the small size of the mitigation area no temporary irrigation system will be installed. Watering of plant material will be done following installation and hydroseeding activities and following any supplemental planting to replace any dead material. After initial installation and watering it is expected that no watering will be needed due to the tidal fluctuations within the mitigation area. However, supplemental watering may occur following initial plant installation if recommended by the restoration ecologist.

3.5.4 Planting Plan

Planting of the mitigation area will consist of both container stock and hydroseeding. The seed mix may be applied with a broadcast seeder and raked into the soil throughout the restoration areas if determined to be appropriate by the restoration ecologist. If planting must occur during the months of April through October, the plantings will be watered once a week for the first three months, and once every other week through October, or until the restoration ecologist determines that watering is no longer needed. Each plant will receive at least two gallons of water during each watering event.

Planting and seeding will be accomplished with native species consistent with the pre-impact species composition. All non-native vegetation, trash and debris will be removed from the mitigation site prior to planting and seeding.

Tables 6 and 7 present the planting palette and seed mixes to be utilized within the mitigation area. Indicated quantities for the various species are based on 4-foot square plant spacing across the proposed planting areas. Placement of individual plants in clusters will reflect natural conditions.

Table 6. Southern Coastal Salt Marsh Mitigation Area Planting Palette

Restoration Area: Southern Coastal Salt Marsh (0.004 acre)			
Scientific Name	Common Name	Propagule	Quantity
Sarcocornia pacıfica	Pacific pickleweed	1 gallon	19
Ambrosia chamissonis	Beach bur	1 gallon	2
Jaumea carnosa	Fleshy jaumea	1 gallon	12
Distichilis spicata	Salt grass	1 gallon	6
Atriplex prostrata	Spearscale	1 gallon	5
Frankenia salina	Alkali heath	1 gallon	10
Acmispon glaber	deerweed	1 gallon	2
Heliotropium curassavicum	Alkali heliotrope	1 gallon	8
Suaeda taxıfolia[1]	Woolly sea-blite	1 gallon	6
Juncus acutus ssp. *leopoldii*[1]	Southwestern spiny rush	1 gallon	6
Total Container Stock			78
[1]CNPS CRPR 4.2 Species			

Table 7. Southern Coastal Salt Marsh Mitigation Area Seed Mix

Restoration Area: Southern Coastal Salt Marsh (0.004 acre)		
Botanical Name	Common Name	Lbs. Pure Live Seed/Acre
Atriplex patula	Beach saltbush	2
Cammisoniopsis bistorta	Sun cup	2
Cammisoniopsis cheiranthifolia	Beach evening primrose	2
Cressa truxillensis	Alkali weed	3
Distichilis spicata	Salt grass	3
Eriogonum parvifolium	Sea cliff buckwheat	2
Eriophyllum confertifolia	Golden yarrow	2
Frankenia salina	Alkali heath	3
Heliotropium curassavicum	Alkali heliotrope	2
Isocoma menziesii	Coast goldenbush	1
Juncus acutus ssp. *leopoldii*	Southwestern spiny rush	2
Malvella leprosa	Alkali mallow	3
Sarcocornia pacifica	Pacific pickleweed	3
Total (lbs/acre)		30

3.5.6 Signage

Signs will be placed along the sidewalk adjacent to the mitigation area once restoration installation activities are complete. The proposed placement at the top of the slope adjacent to the pedestrian walkways along the Grand Canal shall alert residents and pedestrians not to enter the mitigation site.

3.5.7 Protective Caging

Protective caging will be installed around the plantings as directed by the restoration ecologist. Material for caging, if needed, will consist of plastic screen mesh or an equivalent material. Caging for each plant will extend at least 3 inches into the soil and 1 foot above the plant tip to allow sufficient height for at least 2 years' growth. The upper edges of the cage will be folded over each other, creating an "envelope" around the plant.

Chapter 4
Maintenance Plan and Activities

The operator shall contract with a qualified restoration maintenance contractor to maintain the sites throughout the maintenance and monitoring period which is defined as five years from installation of the mitigation, or until project success criteria have been achieved.

Activities conducted during the maintenance period may involve replanting container plants, reseeding, repairing areas that have eroded, inspecting and repairing signs, removing trash and debris, and weeding to control non-native or invasive plant species. For the purpose of this mitigation effort, an invasive plant is one with a rating of High, Moderate, or Limited by the California Invasive Plant Council or a plant determined to be invasive by the restoration ecologist.

This mitigation plan is based upon a 5-year maintenance and monitoring schedule with more intensive effort in the initial periods. Particular attention will be made to controlling the establishment of invasive plants in and adjacent to the restoration sites. Monthly site maintenance visits will take place during the first year of the maintenance period, every other month for Year two, and quarterly for years three through five as presented in Table 8 below. Removal and/or treatment of non-native or invasive plants will be directed under the direction the restoration ecologist as indicated following scheduled inspections.

Table 8. Mitigation Site Maintenance Schedule

Year of Project Following Installation	Maintenance Schedule
Year 1	Monthly
Year 2	Every Other Month
Year 3	Quarterly
Year 4	Quarterly
Year 5	Quarterly

Replacement planting and seeding, erosion repair, protective caging and other adaptive management activities will be implemented as directed by the restoration ecologist and as indicated based upon the results of the scheduled inspections throughout the 5-year maintenance period.

Chapter 5
Monitoring Plan

The monitoring period will start following installation of the mitigation site and will include qualitative biological monitoring, permanent photo station documentation, and annual quantitative performance monitoring.

5.1 Qualitative Monitoring

The project restoration ecologist will conduct monthly qualitative monitoring through year 1 of the monitoring period, every other month for year two, and quarterly for years three through five as presented in Table 9 below.

Table 9. Mitigation Site Monitoring Schedule

Year of Project Following Installation	Monitoring Schedule
Year 1	Monthly
Year 2	Every Other Month
Year 3	Quarterly
Year 4	Quarterly
Year 5	Quarterly

Qualitative monitoring will focus on assessing the health, survivorship, and overall cover of native target vegetation. Plant and wildlife species observed will be noted. Any non-native and invasive plants observed will be noted. Any issue(s) that have the potential to affect the performance of the mitigation site will be documented and mapped. Photographs will be taken to document the performance of the mitigation site. Following each qualitative monitoring visit the restoration ecologist will prepare a memorandum documenting the results of the visit and any maintenance recommendations to be sent to the owner/operator and restoration maintenance contractor. The memorandum will contain an assessment of the health and cover of native target plantings and will note any the presence of any non-native/invasive species. Any other issues that may affect the performance of the mitigation site will be documented, and maintenance recommendations will be made.

5.2 Annual Quantitative Performance Monitoring

Vegetation monitoring will be conducted along transects or within quadrats, as appropriate to the particular habitat type/size of mitigation site and as determined by the restoration ecologist. The number and location of monitoring transects and quadrats will be determined as part of the first year monitoring effort, with the design directed at providing statistically relevant results. Transect locations will be clearly marked both in the field and recorded with a GPS. The position of quadrats along the transect will be randomly selected each year, or if point-intercept methods are used all species occurring every half meter of the transect will be recorded.

In addition to the quantitative data required for evaluation of mitigation success, general field notes will also be compiled as to hydrological conditions (based on surface observations and limited soil sampling), animal species observed or detected, integrity of fencing/signage, and other general conditions relevant to the characterization of the success of the mitigation effort as well as identification of adaptive/corrective measures that may be appropriate to ensure relevant success criteria. Permanent photo documentation points will be established for the mitigation site from which color photographs will be taken each year to document the progression of vegetation conditions. The number and location of points will be established as part of the first-year monitoring effort. Photographs will be taken on the same compass bearing to provide accurate year-to-year visual comparisons.

5.3 Performance Standards and Final Success Criteria

This plan assumes that performance monitoring will be conducted over a 5-year period. Monitoring may occur over an extended period if the success criteria are not met and held within the initial 5 years. Table 10 presents the performance standards and final success criteria for the mitigation site.

Table 10. Performance Standards and Final Success Criteria for Southern Coastal Salt Marsh Mitigation Area

Parameter	Performance Standard	Final Success Criterion
Plant Survival—minimum percentage survival of original plantings. Replacement planting to occur each year to compensate for any dead or under- performing plantings. The same number of planted special-status plants (based on pre-construction plant survey) shall be replaced each year as needed and the total number of special-status plantings shall be verified in Year 5.	Year 1: 85% Year 2: 90% Year 3: 100% Year 4: 100%	Year 5: 100%
Native Species Cover—minimum relative percent vegetation cover comprised of native and target southern coastal salt marsh species.	Year 1: 45% Year 2: 55% Year 3: 65% Year 4: 75%	Year 5: 85%
Non-native Species—maximum relative percent cover of species listed as High, Moderate and Low Priority by Cal IPC.	Year 1: 5% Year 2: 5% Year 3: 5% Year 4: 5%	Year 5: 5%

5.4 Adaptive Management

Adaptive management will be utilized to address any unforeseen issues that affect the performance of the mitigation site that are not discussed in the HMMP. Adaptive management may be initiated at any time during the 5-year maintenance and monitoring period. Each annual

report will discuss the site performance and the need for any adaptive management actions (replanting, increased maintenance or monitoring, irrigation.

Any significant issue or contingency that arises at the site (e.g., plant survival issues, fire, flooding, etc.) will be reported in writing to the resource agencies within 2 weeks from the date of the incident. Accompanying the report will be a plan for remediation with an implementation schedule, monitoring schedule, and financial assurances.

5.5 Annual Monitoring Reports

A report documenting the performance of the mitigation site will be prepared annually for each year of the 5-year monitoring period. The Annual Monitoring Reports will document the results of the qualitative monitoring, maintenance conducted, and any unexpected issues and adaptive management actions taken throughout the previous year. A list of plants and wildlife observed in or adjacent to the mitigation site(s) will be included. The Annual Monitoring Reports will also document the results of the annual quantitative monitoring including raw and summarized data and will also contain photographs taken from the permanent photo monitoring stations. The Annual Monitoring Reports will contain figures that depict the mitigation site(s) and will show the placement of transects/quadrats and the location of permanent photo monitoring stations. The Annual Monitoring Reports will be submitted annually to each respective resource agencies by January 31 of each year or according to dates specified in the final permits.

5.6 Project Completion and Agency Confirmation

Project completion will be achieved when the final success criteria have been achieved, and verified by resources agency staff, or when agency staff determine that the project is complete. Project completion may be achieved prior to Year 5 if agency staff determines that final success criteria are achieved. Once the final success standards are met the owner/operator may request that a site visit be conducted with resource agency staff to review the site and success criteria. A written statement of Project completion shall be provided by the resource agencies for the Project to be considered successful and complete.

Chapter 6

Site Protection, Long-Term Management and Financial Assurances

6.1 Site Protection

The mitigation site will be preserved for perpetuity through a site protection instrument such as a restrictive covenant, deed restriction, or equivalent instrument. Following project completion LABOE will assume responsibility for and will fund long-term maintenance and management of the mitigation site.

6.2 Long-term Management

Long-term management of the mitigation site will be the responsibility of LABOE. A Long-term Management Plan will be prepared by LABOE and submitted to resource agency staff for approval. The Long-term Management Plan will describe the activities to be conducted on the site to assure long-term viability of the preserved habitats such as: regular/annual monitoring and reporting, maintenance of signage, erosion repair, non-native/invasive species maintenance, trash and debris removal, and will provide contingency measures such as supplemental planting and watering.

Funding for the long-term management will be the responsibility of LABOE and LABOE will be required to provide a bond covering the fees associated with implementing the Long-term Management Plan.

6.3 Financial Assurances

The owner/operator shall assume all costs and financial responsibility for the mitigation site through the 5-year maintenance and monitoring period including all components of the mitigation project: site installation, maintenance, monitoring, reporting, site protection and long-term management including any contingency actions.

Request for Agency Oversight Application

The purpose of this application is to provide the Department of Toxic Substances Control (DTSC) and the Regional Water Quality Control Board (Water Board) sufficient information to determine which agency will be the appropriate lead agency to provide oversight for the assessment and/or remediation of this Brownfield site. The detailed site information requested in this application will also help the appropriate lead agency to expedite the development of a cost recovery agreement, so that the applicant can begin work in a timely and efficient manner.

For a California Land Reuse and Revitalization Act (CLRRA) Agreement or a Prospective Purchaser Agreement, please complete the appropriate Supplemental Attachment since additional information is required for these programs.

SECTION 1
APPLICANT/PRIMARY CONTACT INFORMATION

The Applicant (i.e., individual, business entity, or organization) requesting oversight must possess all necessary rights and access to the site so that it can carry out any and all activities that the oversight agency may require in making its regulatory decisions.

Applicant Name: City of Los Angeles - Bureau of Engineering

Applicant Point of Contact Name: Mr. Sylvester Kueh

E-mail Address: sylvester.kueh@lacity.org

Phone: (213)485-1693

Address, City, County & Zip Code: 1149 S. Broadway Street, Los Angeles, Los Angeles County 90015

Applicant's relationship to site: Current Owner ☒ Operator ☐
Local Agency ☐ Prospective Purchaser ☐ Developer ☐
Other (please describe):

Current Owner (if different from Applicant):

Owner Point of Contact Name:

E-mail Address:

Phone: ( ) -

Address, City, County & Zip Code:

Consulting Firm Name: AECOM (for technical questions only)

Consultant Point of Contact Name: Shapoor Hamid, PhD, Principal Scientist

E-mail Address: shapoor.hamid@aecom.com

Phone: (213)996-2630

Request for Agency Oversight Application

Address, City, County & Zip Code: 300 S. Grand Avenue, Los Angeles, Los Angeles County 90071

Primary Point of Contact for this Site: Applicant Contact ☒ or Consultant Contact ☒ or Owner Contact ☒

Billable Party Information:

Billing Point of Contact Name:

E-mail Address:

Phone: ( ) -

Address, City, County & Zip Code:

Tax ID Number (applicable only to business entities and organizations; please do not provide individual social security numbers):

SECTION 2
SITE INFORMATION

If applicable, the applicant may reference information from an attached Phase 1 Environmental Assessment or other site investigation reports available for the Site.

1. Is this Site listed on Envirostor? Yes ☐ No ☒ and/or Geotracker? Yes ☐ No ☒

2. Name of Site: 128 Hurricane Street - VAPP

3. Address City County ZIP: 128 Hurricane Street, Venice also known as Marina Del Rey, CA 90292

4. APN(s): 422-5010-016 Acres: 0.097 Zoning: Mixed

5. Provide a Site Location Map and a Site Diagram showing significant features

6. Describe the current use of the Site and include description of features:
   Vacant Lot

7. Describe the surrounding land use (including proximity to residential housing, schools, churches, etc.):
   Surrounded by Residential housing, and water treatment plant. School within 0.3 miles.

8. Background: Current & Previous Business Operations
   Name: Currently, no business operations. Past business operations was oil production from 1928 to 1932.

Request for Agency Oversight Application

Type: Public Facilities

Years of Operation:4

9. If known, list all previous businesses operating on this Site:
   1. McDonald Petroleum, Ltd.
   2.
   3.
   4.
   5.

10. What hazardous substances, pollutants, or contaminants have been or are being used/stored at the Site?
    Petroleum hydrocarbons

11. What environmental media is/was/may be contaminated (check all that apply)?
    Soil ☒ Air ☐ Groundwater ☐ Surface Water ☐ Unknown ☐

12. Has sampling been conducted? Yes ☒ No ☐ If yes, then identify the contaminants detected, including the maximum concentrations, and contaminants that exceeded screening levels (e.g., Preliminary Remediation Goals or California Human Health Screening Levels).Reports are attached

13. Is there currently a potential of exposure of the community or workers to hazardous substances, pollutants, or contaminants at the Site?
    Yes ☒ No ☐ If yes, then explain. Direct exposure to petroleum hydrocarbons if excavation occurs.

14. Provide a brief summary of removal or remedial activities that have been undertaken or completed at the Site, if any. see attached RAP

15. Provide a description of known or possible water quality impacts at the Site. Also, provide information about the type(s) of water supply for the Site and, if known, any information on municipal, domestic, agricultural or industrial water supply wells that are either on the Site or within a 1-mile radius of the project area.

    Not known

16. Are any Federal, State or Local regulatory agencies currently involved with the Site? Yes ☒ No☐ If yes, describe the regulatory agencies' involvement with the Site, and provide the regulatory agencies' contact names and telephone numbers below.

Agency Involvement Contact Name Phone

Agency	Involvement	Contact Name	Phone Number

Request for Agency Oversight Application

Army Corps of Engineering	**Section 404 Water Permit**	**Deana J. Cummings**	**(213)452-3002**
Los Regional Water Quality	**Section 401 Water Permit**	**Dana Cole**	**(213)576-5733**
Califoria Coastal Commission	**State Coastal Development Permit**	**Shannon Vaughn**	**(562)590-5071**

17. What is the proposed future use of the Site? Develop as parking lot, open space, and landscaping

18. If the Site is not cleaned-up to unrestricted standards, will the owner accept land use restrictions? Yes

19. What oversight service is being requested of the Lead Agency (check all that apply)?

Initial Investigation/Preliminary Endangerment Assessment ☐
Supplemental Investigation ☐
Remedial Investigation/Feasibility Study ☐
Removal Action/Remedial Action ☒
Case Closure ☐
Document Review ☒
Other:

20. Provide a general description of the nature of the proposed redevelopment, including a general timeline for construction: The City plans to develop the vacant lot into a parking lot, open space, and landscaping. Timeline is not known at this time.

21. Provide information about the potential benefits of the proposed redevelopment, if available:

Anticipated number of jobs created/retained: Unknown
Anticipated number of proposed residential units: 0
Anticipated square footage of planned commercial space: 3,031
Anticipated square footage of planned open space: 1,199
Anticipated acres made ready for re-use by proposed Site cleanup: 0.097

22. Provide information on the environmental documents produced for the Site to date. Note that copies may be requested by the designated Lead Agency.

☐ Preliminary Endangerment Assessment, dated
☒ Phase 1 Environmental Assessment, dated June 21,2016

Request for Agency Oversight Application

- ☒ Phase 2 Environmental Assessment, dated August 31, 2018, amended May 2020
- ☐ Health Risk Assessment, dated
- ☒ Other, describe and provide date: Geotechnical Investigation Summary Report dated July 24, 2006
- ☒ Other, describe and provide date: Phase III ESA - Remediation Plan, May 2020
- ☐ Other, describe and provide date

SECTION 3
COMMUNITY PROFILE INFORMATION

1. What are the demographics of the community (e.g., socioeconomic level, ethnic composition, specific language considerations, etc.)?
   As of 2017, Median household income: 106,612; 69.7% white, 9.52% hispanic

2. **Local Interest**: Has there been any media coverage?
   no

3. **Past Public Involvement**: Has there been any past public interest in the Site as reflected by community meetings, ad hoc committees, workshops, fact sheets, newsletters, etc.?
   Yes, the VAPP EIR process and public hearings with the Department of City Planning

4. **Key Issues and Concerns**: Have any specific concerns/issues been raised by the community regarding past operations or present activities at the Site?
   Noise, vibration, traffic

5. Are there any concerns/issues anticipated regarding Site activities?
   No

6. Are there any general environmental concerns/issues in the community relative to neighboring sites?
   Noise, vibration, traffic

7. Describe the visibility of activities and any known interest the Site:
   Activities would be visible from nearby residential buildings and along the walking trail known as the Espanade, but is a low traffic area.

Request for Agency Oversight Application

SECTION 4
CERTIFICATION

The signatory below is an authorized representative of the Applicant and certifies to the best of his/her knowledge and belief that the information contained in this application, including any attachments, is true and complete and accurately describes the Applicant, the Site, and related conditions. The Applicant agrees to promptly inform the agency of any changes that occur in the information contained in this application.

The Applicant agrees to reimburse the lead agency (the Department of Toxic Substances Control or the Regional Water Quality Control Board) for the lead agency's costs in preparing and negotiating the appropriate cost recovery agreement, regardless of whether the agreement is subsequently executed by the Applicant and the lead agency, and, in the event the cost recovery agreement is executed by the parties, for oversight of the activities identified in the Scope of Work of the selected Agreement.

_____	_____	_____
Applicant Representative	Date	Title

Request for Agency Oversight of a Brownfield Site
Supplemental Attachment: California Land Reuse and Revitalization Act (CLRRA) Application

Please complete this form ONLY if you are an eligible entity applying for a California Land Reuse and Revitalization Act (CLRRA) Agreement

Definitions of terms used in the CLRRA Application can be found in Article 2 "Definitions," and Article 6, "Streamlined Site Investigation and Response Plan Agreements," Chapter 6.82, Division 20 of the Health and Safety Code (commencing with section 25395.60).

1. Are you applying as a/an:
   - ☐ Bona fide purchaser (BFP)
   - ☐ Contiguous property owner (CPO)
   - ☐ Innocent landowner (ILO)
   - ☐ Prospective purchaser (PP)
   - ☐ Bona ground tenant (BGT)

2. Is the Site located outside an infill area in an urban area?
   Yes☐ No☐

3. Is the Site solely impacted by petroleum from an underground storage tank and eligible for reimbursement from the Underground Storage Tank Cleanup Fund?
   Yes☐ No☐

   If you answered YES to either question 2 or 3, contact a DTSC Brownfield Coordinator to discuss Site-specific details.

4. Current zoning and planned use of the Site:

5. Do you own the Site? Yes☐ No☐

6. Did (will, in the case of a PP) the owner conduct due diligence or All Appropriate Inquiry (AAI) prior to acquiring Site? Yes☐ No☐

   Date AAI was conducted (will be conducted, in the case of a PP) _____.

7. Did the owner take reasonable steps with regard to contamination at the Site including, as appropriate; stopping continuing releases, preventing threatened releases, and preventing or limiting human, environmental or natural resource exposure to earlier hazardous substance releases? Yes☐ No☐

8. Date the Site was/will be purchased and title was/will be transferred

See attached Addendum for definitions of CLRRA terms used in this Supplemental Attachment.

Request for Agency Oversight of a Brownfield Site
Supplemental Attachment: California Land Reuse and Revitalization Act (CLRRA) Application

Applicant's Disclosure Statement:

In submitting this application, I verify that, to the best of my knowledge, I can meet the requirements for a Bona Fide Purchaser, Contiguous Property Owner Innocent Landowner, Prospective Purchase or Bona Fide Ground Tenant set forth in Division 20, Chapter 6.82 (commencing with section 25395.60) of the Health and Safety Code and, upon request by the oversight agency, will submit documentation that I meet each of the following conditions in accordance with Health and Safety Code section 25395.80:

> *On or before the date of property acquisition, I made "All Appropriate Inquiries" into the previous ownership and uses of the site; and*
>
> *I am not potentially liable or affiliated with any other person who is potentially liable through any direct or indirect familial relationship, or through any contractual, corporate, or financial relationship unless that relationship was created by the instrument by which title or possession to the site was conveyed or financed or was a contract for the sale of goods or services, or through the result of a reorganization of a business entity that was potentially liable for the release or threatened release of hazardous materials at the site.*

The Applicant agrees to reimburse the lead agency (the Department of Toxic Substances Control or the Regional Water Quality Control Board) for the lead agency's costs in preparing and negotiating the CLRRA Agreement, regardless of whether the agreement is subsequently executed by the Applicant and the lead agency, and, in the event a CLRRA Agreement is executed by the parties, for oversight of the activities identified in the agreement.

The signatory below is an authorized representative of the Applicant and certifies to the best of his/her knowledge and belief that the information contained in this application, including any attachments, is true and complete and accurately describes the Applicant, the Property, and related conditions. The Applicant agrees to promptly inform the lead agency of any changes that occur in the information contained in this application.

Signature of Applicant:

_____

Date:

_____ _____

Name & Title:

_____ _____

Address:

_____ _____

Request for Agency Oversight of a Brownfield Site
Supplemental Attachment: Prospective Purchaser Agreement

Please complete this form ONLY if you are an eligible entity applying for a Prospective Purchaser Agreement with DTSC

1. Is the current owner aware of your plans to seek a Prospective Purchaser Agreement with DTSC?
   Yes ☐ No ☐

   a) If "yes," then when do you expect to take title to the Site?

   b) If "no," then what is your proposed interest in the Site and what vehicle will be used to consummate the transaction?

2. Please describe if known, the timing of the proposed property transaction in sufficient detail to give DTSC a sense of your needs and timetable.

3. Attach a copy of the Site map, legal boundary description and Title Report.

4. Describe the "substantial benefit" to the State of California that will result if your proposal is implemented. For example, describe the changes expected in the local and state tax base or other benefits to the community and surrounding neighborhood which could occur as a result of the Site redevelopment.

5. Describe the financing to be used to complete remediation prior to the development of the Site.

6. Briefly describe, in general terms, the removal or remedial activities to be performed in the future.

7. Attach a list of names and addresses of potentially responsible parties, and describe all efforts to identify the potentially responsible parties.

Note: If remediation is occurring during and after construction, such as for groundwater treatment or soil vapor extraction, a separate Operation and Maintenance Agreement must be executed to ensure that remedial activities occur until remedial goals are met.

Request for Agency Oversight of a Brownfield Site
Supplemental Attachment: Prospective Purchaser Agreement

Applicant's Disclosure Statement:

In submitting this application, I verify under penalty of perjury that, to the best of my knowledge, the Applicant is not a responsible party or affiliated with a responsible party for this site.

The Applicant agrees to reimburse the lead agency for its costs in preparing and negotiating the Prospective Purchaser Agreement, regardless of whether the agreement is subsequently executed by the Applicant and the lead agency, and, in the event a Prospective Purchaser Agreement is executed by the parties, for oversight of the activities identified in the agreement.

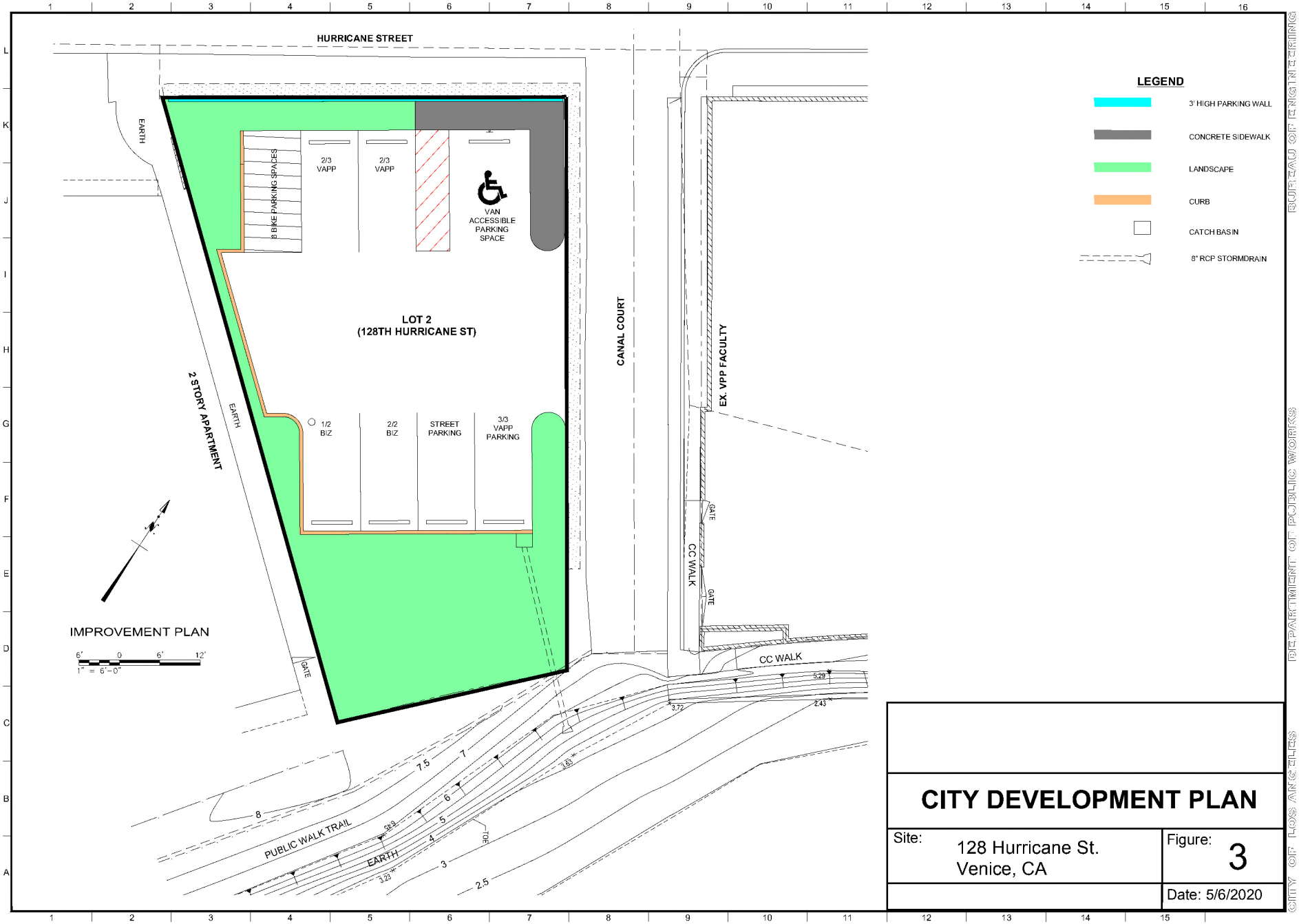
The signatory below is an authorized representative of the Applicant and certifies to the best of his/her knowledge and belief that the information contained in this application, including any attachments, is true and complete and accurately describes the Applicant, the Property, and related conditions. The Applicant agrees to promptly inform DTSC of any changes that occur in the information contained in this application.

Signature of Applicant:

_____

Date:

Name & Title:



CITY DEVELOPMENT PLAN

Site:	Figure:
128 Hurricane St. Venice, CA	3
	Date: 5/6/2020

BUREAU OF ENGINEERING
DEPARTMENT OF PUBLIC WORKS
CITY OF LOS ANGELES

Wetlands JURISDICTIONAL DELINEATION REPORT

VENICE AUXILIARY PUMPING PLANT
COMMUNITY OF VENICE,
LOS ANGELES COUNTY, CALIFORNIA

PREPARED FOR :

City of Los Angeles, Department of Public Works Bureau of Engineering, Environmental Management Group 1149 S. Broadway, Suite 600, Los Angeles CA 90015 Contact: Dr. Jan Green Rebstock, Environmental Supervisor II 213-485-5761

PREPARED BY :

ICF International
1 Ada, Suite 100
Irvine, CA 92618
Contact: Paul Schwartz
949-333-6634

January 2016

ICF International. 2016. Jurisdictional Delineation Report, Venice Auxiliary Pumping Plant, Community of Venice, Los Angeles County, California. January. (ICF 476.15) Irvine, CA. Prepared for Los Angeles Bureau of Engineering, Los Angeles, CA.

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Acronyms and Abbreviations

CCC California Coastal Commission
CDFW California Department of Fish and Wildlife
CEQA California Environmental Quality Act
CESA California Endangered Species Act
CFR Code of Federal Regulations
CIS close interval survey
CWA Clean Water Act
CZMA Coastal Zone Management Act
EPA U.S. Environmental Protection Agency
ESHA Environmentally Sensitive Habitat Area
FAC facultative
FACU facultative upland
FACW facultative wetland
GPS global positioning system
HTL High-Tide Level
HUC Hydrologic Unit Code
ICF ICF International
JD Jurisdictional Determination
LCP Local Coastal Program
LIP Land Implementation Plan
LUP Land Use Plan
MHW Mean High-Water
MLLW Mean Lower Low-Water
msl mean sea level
NHD National Hydrography Dataset
NI no indicator
NO no occurrence
NOAA National Oceanic and Atmospheric Administration
OBL status of obligate
OHWM ordinary high-water mark
Porter-Cologne Act Porter-Cologne Water Quality Control Act
project Venice Auxiliary Pumping Plant Project
RGL Regulatory Guidance Letter
RPW relatively permanent water
RWQCB Regional Water Quality Control Board
SWANCC Solid Waste Agency of Northern Cook County
SWRCB State Water Resources Control Board
TNW traditional navigable water
UPL obligate upland
USACE U.S. Army Corps of Engineers
USGS U.S. Geological Survey
VAPP Venice Auxiliary Pumping Plant
VERTCON

North American Vertical Datum Conversion VPP
Venice Pumping Plant
WoS waters of the State
WoUS waters of the United States

Chapter 1
Introduction

On September 21, 2015, ICF International (ICF) conducted a routine-level delineation of jurisdictional waters and wetlands within a portion of the Ballona Lagoon and Grand Canal for the Los Angeles Bureau of Engineering as part of the federal and state regulatory permitting process for activities to be conducted for the Venice Auxiliary Pumping Plant Project (project).

The purpose of this delineation was to identify the extent of federal and state jurisdiction within and adjacent to the project site to support the resource-agency permitting process under Sections 404 and 401 of the Clean Water Act (CWA), Section 10 of the Rivers and Harbors Act, Section 13260 of the Porter-Cologne Water Quality Control Act (Porter-Cologne Act), Section 1602 of the California Fish and Game Code, and Section 30121 of the California Coastal Act.

Section 404 of the CWA covers waters of the United States (WoUS) as well as federal wetlands. Section 10 of the Rivers and Harbors Act covers navigable waters and rivers. Both Section 404 and Section 10 are regulated by the U.S. Army Corps of Engineers (USACE). Under Section 401 of the CWA, the Regional Water Quality Control Board (RWQCB), under guidance from the U.S. Environmental Protection Agency (EPA), regulates at the state level all activities that are regulated at the federal level by USACE. The RWQCB/State Water Resources Control Board (SWRCB) may also regulate activities that affect non-federal waters and wetlands (e.g., isolated features) under the Porter-Cologne Act. Section 1600 et. seq. of the California Fish and Game Code is regulated by the California Department of Fish and Wildlife (CDFW) and covers aquatic features, which may include lakes or streambeds or other aquatic features that support wildlife or potential habitat for wildlife. Section 30121 of the California Coastal Act is regulated by the California Coastal Commission (CCC), which regulates all development activities in the Coastal Zone, including wetlands, as defined by the CCC under Title 14 of the California Code of Regulations, and Environmentally Sensitive Habitat Areas (ESHAs), defined under Section 30107.5 of the California Coastal Act. If a proposed project may affect waters or wetlands, the project site must be evaluated to determine the presence of jurisdictional waters. Permits for the proposed activity must be sought from each applicable resource agency. Details regarding each of these resource agencies and their regulatory authority, jurisdiction, permits, and regulatory processes are provided in Chapter 2, *Regulatory Background*.

The information and results presented herein document the investigation, best professional judgment, and conclusions of the investigators. It is correct and complete to the best of our knowledge. However, all jurisdictional determinations should be considered preliminary until reviewed and approved by the regulatory agencies.

1.1 Project Location

The proposed project is immediately north of the intersection of Canal Court and Hurricane Street in the community of Venice, City of Los Angeles, Los Angeles County, California (Appendix A, Figure 1). The majority of the project site abuts the western bank of the Grand Canal (Appendix A, Figure 2); however, some work would be required within the canal. The jurisdictional delineation study area (study area), defined as the project footprint plus a 100-foot buffer (where appropriate), is mapped within non-sectioned lands, Township 15 West, Range 2 South of the Venice, California, U.S. Geological Survey (USGS) 7.5-minute topographic quadrangle map (USGS 1964) (Appendix A, Figure 2).

1.2 Project Description

The project would include the construction of an auxiliary pumping facility that would provide additional reliability and supplement capacity to the existing Venice Pumping Plant (VPP). The project would be sized to supplement the pumping capacity of the VPP (Pump Station No. 646), for a combined ultimate peak flow capacity of 87 million gallons per day, reflecting wet weather flows of a 10-year storm event. Major project components of the Venice Auxiliary Pumping Plant (VAPP) would include one electrical building approximately 30 feet in height; three pumps constructed below ground level; utility connections; transformers and generators; a 17-foot by 17-foot submerged diversion structure, the top of which would be below the lowest elevation of the Grand Canal; and a 66-inch sewer to connect VAPP to the new diversion structure. A portion of Hurricane Street and Canal Court would be temporarily closed off. Shoring would be installed around the project site, and then excavation would occur to a depth of approximately 25 feet. The proposed project would require the excavation of approximately 10,000 cubic yards of soil, approximately 2,300 cubic yards of which would be exported off site and disposed of in an approved area landfill. Water pumped from the site would be disposed of in a manner consistent with RWQCB regulations and other related permit requirements.

Construction of the underground facilities associated with the VAPP, including the three new pumps, the wet well, valve vault, meter vault, and piping, would occur. These facilities would be constructed at a maximum depth of approximately 25 feet below ground. Within the Grand Canal, a diversion structure approximately 23 feet by 95 feet would be excavated to a depth of approximately 18 feet below ground and then sealed. Excavated materials would be hauled from the site and disposed of at an appropriate location. Water flowing in the Grand Canal would be diverted around a cofferdam structure by the presence of the dam itself. The diversion structure would then be constructed around the in-service close interval survey (CIS) pipe. Construction of the cofferdam, placement of the diversion structure, and backfill and soil compaction would occur within the Grand Canal. The CIS pipe would be cut so that the modular insert could be installed. The pipes would then be connected and a seal would be inserted into the shell. Backfill and soil compaction would be completed, and the Grand Canal channel bottom would be restored to its original elevation. Finally, the diversion structure would be sealed, removing all shoring steel, and allowing flows to resume to pre-construction conditions within the Grand Canal. The Esplanade would be reopened to pedestrian access on the west side of the Grand Canal. Surface improvements at the site would occur, consisting of constructing an approximately 30-foot-high electrical building and installing two new 480-volt City of Los Angeles Department of Water and Power transformers.

Chapter 2
Regulatory Background

The following sections summarize the regulations imposed on each type of jurisdictional feature potentially present within the study area.

2.1 U.S. Army Corps of Engineers Regulated Activities

Pursuant to Section 404 of the CWA, USACE regulates the discharge (temporary or permanent) of dredged or fill material into WoUS, including wetlands. A discharge of fill material includes, but is not limited to, grading, placing riprap for erosion control, pouring concrete, and stockpiling excavated material into WoUS. Activities that generally do not involve a regulated discharge (if performed specifically in a manner to avoid discharges) include driving pilings, performing certain drainage channel maintenance activities, constructing temporary mining and farm/forest roads, and excavating without stockpiling.

2.1.1 Waters of the United States

WoUS, as defined in Code of Federal Regulations (CFR) Title 33, Section 328.3, includes the following.

(1) All waters that are currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters that are subject to the ebb and flow of the tide;

(2) All interstate waters, including interstate wetlands;

(3) All other waters, such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes, or natural ponds, the use, degradation, or destruction of which could affect interstate or foreign commerce, including any such waters:

(i) That are or could be used by interstate or foreign travelers for recreational or other purposes; or

(ii) From which fish or shellfish are or could be taken and sold in interstate or foreign commerce; or

(iii) That are used or could be used for industrial purpose by industries in interstate commerce;

(4) All impoundments of waters otherwise defined as waters of the United States under the definition;

(5) Tributaries of waters identified in paragraphs (1) through (4) of this section;

(6) The territorial seas;

(7) Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in paragraphs (1) through (6) of this section.

(8) Waters of the United States do not include prior converted cropland. Notwithstanding the determination of an area's status as prior converted cropland by any other federal agency, for the purposes of the Clean Water Act, the final authority regarding Clean Water Act jurisdiction remains with EPA.

> Waste treatment systems, including treatment ponds or lagoons designed to meet the requirements of CWA (other than cooling ponds as defined in 40 CFR 423.11(m), which also meet the criteria of this definition), are not waters of the United States.

The limit of USACE jurisdiction, excluding wetlands and tidal waters, is delineated using the ordinary high-water mark (OHWM), defined in CFR 328.3(e) as:

> …that line on the shore established by the fluctuations of water and indicated by physical characteristics such as [a] clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas.

The limit of Section 404 jurisdiction within navigable/tidal waters is delineated using the maximum predicted annual tide (or High-Tide Level [HTL]) for the previous year. The HTL elevations for each tidal gauge station are available online from the National Oceanic and Atmospheric Administration (NOAA) (NOAA 2015a).

2.1.2 Special Aquatic Sites and Wetlands

Section 404 of the CWA identifies six categories of Special Aquatic Sites: Sanctuaries and Refuges, Wetlands, Mudflats, Vegetated Shallows, Coral Reefs, and Riffle and Pool Complexes. Wetlands are explained in detail below.

Normally, three criteria must be satisfied to classify an area as a jurisdictional wetland: (1) a predominance of plant life that is adapted to life in wet conditions (hydrophytic vegetation); (2) soils that saturate, flood, or pond long enough during the growing season to develop anaerobic conditions in the upper part (hydric soils); and (3) permanent or periodic inundation or soils saturation, at least seasonally (wetland hydrology) (Environmental Laboratory 1987).

2.1.3 Solid Waste Agency of Northern Cook County v. U.S. Army Corps of Engineers

In 1986, in an attempt to clarify the reach of its jurisdiction, USACE stated that Section 404(a) extends to intrastate waters that:

> …(a) are or would be used as habitat by birds protected by migratory bird treaties or (b) are or would be used as habitat by other migratory birds that cross state lines or (c) are or would be used as habitat for endangered species or (d) used to irrigate crops sold in interstate commerce" (51 Federal Register 41217).

As a result of the 2001 *Solid Waste Agency of Northern Cook County* (*SWANCC*) case, the U.S. Supreme Court held that USACE may not rely on the Migratory Bird Rule to establish a significant nexus to interstate or foreign commerce. Although no formal guidance was issued by USACE that interprets the extent to which the *SWANCC* decision would limit jurisdictional determinations, in practice, USACE considers intrastate waters as WoUS where there is an appropriate connection to a navigable water or other clear interstate commerce connection. Therefore, WoUS, including jurisdictional wetlands, must show connectivity with (i.e., be tributary to) a navigable WoUS to be subject to USACE under Section 404 of the CWA.

2.1.4 Rapanos v. United States and Carabell v. U.S. Army Corps of Engineers

In 2006, the U.S. Supreme Court issued an opinion regarding the extent of USACE jurisdiction over certain waters under Section 404 of the CWA. The *Rapanos-Carabell* consolidated decisions addressed the question of jurisdiction over attenuated tributaries to WoUS as well as wetlands adjacent to those tributaries.

On June 5, 2007, USACE and EPA issued guidance related to the *Rapanos* decision. The guidance identifies those waters over which the agencies (USACE and EPA) will assert jurisdiction categorically and on a case-by-case basis. To summarize, USACE will continue to assert jurisdiction over the following features.

- Traditional navigable waters (TNWs) and their adjacent wetlands
- Non-navigable tributaries of TNWs that are relatively permanent waters (RPWs) (e.g., tributaries that typically flow year-round or have a continuous flow at least seasonally [i.e., typically 3 months]) and wetlands that directly abut such tributaries (i.e., not separated by uplands, berm, dike, or similar feature)

For non-RPWs, the agencies will determine whether a "significant nexus" exists with a TNW using the data found in an Approved Jurisdictional Determination (JD) form. The purpose of the significant nexus evaluation is to determine whether the existing functions of a tributary affect the chemical, physical, and/or biological integrity of a downstream TNW. Tributary characteristics that are considered when evaluating whether a significant nexus exists include volume, duration, and frequency of flow; proximity to a TNW; and hydrologic and ecologic functions performed by the tributary and all of its adjacent wetlands. Based on that information, the agencies may assert jurisdiction over the following features.

- Non-navigable tributaries that do not typically flow year-round or have continuous flow at least seasonally
- Wetlands adjacent to such tributaries
- Wetlands adjacent to but not directly abutting a relatively permanent non-navigable tributary

The agencies will typically not assert jurisdiction over the following features.

- Swales or erosional features (e.g., gullies and small washes characterized by low volume and infrequent or short-duration flow)
- Ditches (including roadside ditches) excavated wholly in uplands and draining only uplands that do not carry a relatively permanent flow of water

Approved Jurisdictional Determinations

An Approved JD is an official USACE jurisdictional determination, is valid for 5 years, can be used and relied upon in a CWA citizen's lawsuit if its legitimacy is challenged (except under extraordinary circumstances), and can be immediately appealed (33 CFR 331). Approved JDs are documented in accordance with Regulatory Guidance Letter (RGL) No. 07-01 and require the use of the Approved JD form. Approved JDs are evaluated by USACE and EPA.

Under the *Rapanos* guidance, an Approved JD is required for determinations for all "isolated" waters or wetlands and is subject to review by USACE and EPA.

Preliminary Jurisdictional Determinations

USACE issued RGL No. 08-02 on June 26, 2008, allowing USACE to issue Preliminary JDs for a project. A Preliminary JD is a non-binding written indication that there may be WoUS, including wetlands, on a project site. In addition, it identifies the approximate location of these features. Preliminary JDs are used when a landowner, permit applicant, or other affected party elects to voluntarily waive or set aside questions regarding CWA jurisdiction over a particular site, usually in the interest of allowing the landowner to move ahead expeditiously to obtain Section 404 authorization where the party determines that it is in his or her best interest to do so. A Preliminary JD is not an official determination regarding the jurisdictional status of potentially jurisdictional features and has no bearing on Approved JDs. A Preliminary JD cannot be used to confirm the absence of jurisdictional waters or wetlands, is advisory in nature, and cannot be appealed. It is considered "preliminary" because a recipient can later request an Approved JD if one is necessary or appropriate.

A Preliminary JD is documented using the Preliminary JD form. For purposes of impact calculations, compensatory mitigation requirements, and other resource protection measures, a permit decision made on the basis of a Preliminary JD treats all waters and wetlands that would be affected in any way, except by the permitted activity, as if they were jurisdictional. Although a Preliminary JD may be chosen by the applicant, the district engineer reserves the right to use an Approved JD where warranted.

2011 Draft Clean Water Act Guidance

On April 27, 2011, USACE and EPA issued draft guidance for determining jurisdiction under the CWA (USACE 2011). The guidance supersedes the previous guidance from 2003 regarding *SWANCC* (68 *Federal Register* 1991–1995) and 2007 *Rapanos* guidance. This document reiterated the guidance issued under the *Rapanos* decision, asserting that the following waters are protected by the CWA.

- Traditional navigable waters
- Interstate waters
- Wetlands adjacent to either TNWs or interstate waters
- Non-navigable tributaries to TNWs that are relatively permanent (meaning they contain water at least seasonally)
- Wetlands that directly abut relatively permanent waters

The guidance further clarifies the criteria for defining TNWs, primarily consistent with previous guidance. In addition, a significant nexus evaluation is required for the "other waters" category of the regulations (see item 3 in Section 2.1.1, *Waters of the United States*, above). The guidance divides these waters into two categories—those that are physically proximate to other jurisdictional waters and those that are not—and discusses how each category should be evaluated.

Finally, the guidance reiterated that certain aquatic areas are generally not considered WoUS, as follows.

- Wet areas that are not tributaries or open waters and do not meet the agencies' regulatory definition of "wetlands"
- Waters that are excluded from coverage under the CWA by existing regulations
- Waters that lack a "significant nexus" where one is required for a water to be protected by the CWA
- Artificially irrigated areas that would revert to upland should irrigation cease
- Artificial lakes or ponds created by excavating and/or diking dry land and used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing
- Artificial reflecting pools or swimming pools created by excavating and/or diking dry land
- Small ornamental waters created by excavating and/or diking dry land for primarily aesthetic reasons
- Water-filled depressions created incidental to construction activity
- Groundwater drained through subsurface drainage systems
- Erosional features (gullies and rills) and swales and ditches that are not tributaries or wetlands

2.1.5 Section 10 of the Rivers and Harbors Act

Section 10 of the Rivers and Harbors Act gives USACE regulatory and permitting authority over work in, over, or under "navigable WoUS." Regulated Section 10 activities include the construction of structures in or over navigable WoUS, the excavation/dredging or deposition of material in navigable WoUS, or any obstruction or alteration to a navigable WoUS. Section 10 navigable WoUS and Section 404 WoUS do overlap in some areas that involve wetlands and non-wetland waters associated with navigable WoUS.

The limits of Section 10 navigable WoUS are defined by the Mean High Water (MHW) elevation, using Mean Lower Low Water (MLLW) as a baseline (MHW minus MLLW = Section 10 MHW).

2.2 State Regulated Activities

2.2.1 Section 401 of the Clean Water Act

A federal permit or license cannot be issued that may result in a discharge to WoUS unless certification under Section 401 of the CWA is granted or waived by EPA, state, or tribe where the discharge would originate (EPA 2010). Within the proposed project area, the ability to grant, grant with conditions, deny, or waive certification falls to three separate parties: RWQCB or SWRCB and EPA.

Pursuant to Section 401 of the CWA:

> . . . any applicant for a federal permit for activities that involve a discharge to waters of the United

States shall provide the federal permitting agency a certification from the state in which the discharge is proposed that states that the discharge will comply with the applicable provisions under the federal Clean Water Act.

Before USACE will issue a Section 404 permit, applicants must apply for and receive a Section 401 water quality certification or waiver, as applicable. Under Section 401 of the CWA, all activities that are regulated at the federal level by USACE are also regulated at the state level. Therefore, state jurisdiction usually includes all waters or tributaries to waters that are determined to be WoUS and, similar to WoUS, typically delineated at the OHWM. However, if it is determined that the waters are not WoUS, they may still be subject to state jurisdiction based on the Porter-Cologne Act.

2.2.2 Porter-Cologne Water Quality Control Act

The state also regulates activities that would involve "discharging waste, or proposing to discharge waste, within any region that could affect waters of the State" (California Water Code 13260(a)), pursuant to provisions of the Porter-Cologne Act. Waters of the State (WoS) are defined as "any surface water or groundwater, including saline waters, within the boundaries of the state" (California Water Code 13050(e)). Such waters may include waters that are not subject to regulation under Section 404 (i.e., isolated features). These waters may include isolated vernal pools, isolated wetlands, or other aquatic habitats that are not normally subject to federal regulation under Section 404 of the CWA.

2.2.3 State Water Resources Control Board/Regional Water Quality Control Boards

In California, SWRCB and nine RWQCBs regulate activities within state and federal waters under Section 401 of the CWA and the Porter-Cologne Act. SWRCB is responsible for setting statewide policy, coordinating and supporting RWQCB efforts, and reviewing petitions that contest RWQCB actions. Each semi-autonomous RWQCB sets water quality standards, issues Section 401 certifications and waste discharge requirements, and takes enforcement action for projects that occur within its boundary. However, when a project crosses multiple RWQCB jurisdictional boundaries, SWRCB becomes the regulating agency and issues project permits.

2.3 California Department of Fish and Wildlife Regulated Activities

Pursuant to Sections 1600–1616 of the California Fish and Game Code, CDFW regulates any activity that will substantially divert or obstruct the natural flow—or substantially change or use any material from the bed, channel, or bank—of any river, stream, or lake. CDFW also regulates any activity that will deposit or dispose of debris, wastewater, or other material containing crumbled, flaked, or ground pavement that may pass into any river, stream, or lake. The applicant must notify CDFW prior to such activities and obtain a Lake or Streambed Alteration Agreement.

2.3.1 California Department of Fish and Wildlife Jurisdiction

CDFW jurisdiction includes ephemeral, intermittent, and perennial watercourses (including dry washes) and lakes that are characterized by the presence of (1) definable bed and banks and (2) existing fish or wildlife resources. Furthermore, CDFW jurisdiction often extends to habitats adjacent to watercourses, such as oak woodlands in canyon bottoms or willow woodlands that support hydrologic functions within the riparian system. CDFW jurisdiction typically does not

include features without a discernible bed and bank, such as swales, vernal pools, or wet meadows.

2.3.2 California Fish and Game Code Section 1602

The California Fish and Game Code mandates that:

> ...it is unlawful for any person to substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake designated by the department, or use any material from the streambeds, without first notifying the department of such activity.

Historical court cases have further extended CDFW jurisdiction to include watercourses that seemingly disappear but re-emerge elsewhere. Under the CDFW definition, a watercourse need not exhibit evidence of an OHWM to be claimed as jurisdictional.

Water features such as vernal pools and other seasonal swales—where the defined bed and bank are absent and the feature is not contiguous or closely adjacent to other jurisdictional features—are generally not asserted to fall within state jurisdiction under Section 1602. CDFW generally does not assert jurisdiction over human-made water bodies unless they are located where such natural features were previously located or (importantly) where they are contiguous with existing or prior natural jurisdictional areas.

CDFW jurisdiction in altered or artificial waterways is based on the functions and values of those waterways to fish and wildlife. CDFW precedent is that CDFW will assert jurisdiction over altered or artificial waterways in the following cases.

- Modified natural waterways that support, or have the potential to support, fish, aquatic invertebrates, and/or riparian vegetation. Such waterways will normally be viewed as within the jurisdiction of CDFW under Section 1600 et seq. of the California Code of Regulations.
- Artificial waterways that have acquired the physical attributes of natural systems (bed and bank, riparian vegetation, or other habitat parameters). Such waterways will normally be viewed as within the jurisdiction of CDFW under Section 1600 et seq. of the California Code of Regulations.

2.4 California Coastal Act – California Coastal Commission

In 1972, the United States Congress passed the Coastal Zone Management Act (CZMA) (Title 16 United States Code 1451–1464). The CZMA declared a national policy "to preserve, protect, develop, and, where possible, restore or enhance the resources of the nation's Coastal Zone for this and succeeding generations." The CZMA sought to encourage and help states develop and implement

management programs for the use of coastal land and water resources, "giving full consideration to ecological, cultural, historic, and esthetic values as well as the need for compatible economic development." The Coastal Zone Conservation Act (Proposition 20), approved in 1972, prohibited development 1,000 yards inland from California's mean high tide without a permit from a regional or state coastal commission. Proposition 20 created a temporary California Coastal Zone Conservation Commission and six regional commissions to develop a statewide plan for coastal protection, which eventually led to the passage of the California Coastal Act in 1976. The California Coastal Act led to the permanent establishment of the CCC, the mandate of which is to protect and enhance the resources of the Coastal Zone.

To achieve maximum responsiveness to local conditions, accountability, and public accessibility, the California Coastal Act relies heavily on local government and local land use planning procedures and

enforcement. Therefore, implementation of California Coastal Act policies is accomplished primarily through the preparation of Local Coastal Programs (LCPs), which are reviewed and approved by the CCC. An LCP typically consists of a Land Use Plan (LUP) and an Land Implementation Plan (LIP). The LUP indicates the kinds, locations, and intensities of land uses; the applicable resource protection and development policies; and, where necessary, a listing of implementing actions. The LIP consists of the zoning ordinances, zoning district maps, and other legal instruments that are necessary to implement the LUP. Any amendments to the certified LCP will require review and approval by the CCC prior to becoming effective. After certification of an LCP, coastal development permit authority is delegated to the appropriate local government. The CCC retains original permit jurisdiction over certain specified lands, such as submerged lands, tidelands, and public trust lands, and has appellate authority over development approved by local government in specified geographic areas and for major public works projects and major energy facilities.

In authorizing coastal development permits, the local government must find that the development conforms to the certified LCP. Furthermore, after certification of the LCP, city actions on applications for California Coastal Act authority to conduct certain types of development, as well as development within certain geographic areas, are appealable to the CCC.

2.4.1 Definition of Wetlands and Policy

Section 30121 of The California Coastal Act defines wetlands as such:

> Wetland "means lands within the Coastal Zone may be covered periodically or permanently with shallow water and include saltwater marshes, freshwater marshes, open or closed brackish water marshes, swamps, mudflats, and fens."

The CCC applies a one-parameter approach to defining wetlands. As such, any area with a preponderance of hydrophytic vegetation, the presence of hydric soils, or wetland hydrology meets the definition of a wetland in the Coastal Zone.

Section 13577(b) of Title 14, Division 5.5, Article 18, of The California Code of Regulations defines wetlands as such:

(1) Measured 100 feet landward from the upland limit of the wetland. Wetland shall be defined as land where the water table is at, near, or above the land surface long enough to promote the formation of hydric soils or to support the growth of hydrophytes and shall also include those types of wetlands where vegetation is lacking and soil is poorly developed or absent as a result of frequent and drastic fluctuations of surface water levels, wave action, water flow, turbidity, or high concentrations of salts or other substances in the substrate. Such wetlands can be

recognized by the presence of surface water or saturated substrate at some time during each year and their location within, or adjacent to, vegetated wetlands or deep-water habitats. For purposes of this section, the upland limit of a wetland shall be defined as:

(A) The boundary between land with predominantly hydrophytic cover and land with predominantly mesophytic or xerophytic cover;

(B) The boundary between soil that is predominantly hydric and soil that is predominantly non hydric; or

(C) In the case of wetlands without vegetation or soils, the boundary between land that is flooded or saturated at some time during years of normal precipitation and land that is not.

(2) For the purposes of this section, the term "wetland" shall not include wetland habitat created by the presence of and associated with agricultural ponds and reservoirs where:

(A) The pond or reservoir was in fact constructed by a farmer or rancher for agricultural purposes; and

(B) There is no evidence (e.g., aerial photographs, historical survey, etc.) showing that wetland habitat pre-dated the existence of the pond or reservoir. Areas with drained hydric soils that are no longer capable of supporting hydrophytes shall not be considered wetlands.

2.4.2 Environmentally Sensitive Habitat Areas

The California Coastal Act (California Public Resources Code Division 20, Section 30240a) restricts land uses within or adjacent to ESHAs. The California Coastal Act, Section 30107.5, defines an ESHA as:

> …any area in which plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and could be easily disturbed or degraded by human activities and developments.

Included within this definition are wetlands, estuaries, streams, riparian habitats, lakes, and portions of open coastal waters that meet the rare or valuable habitat criteria. Not all wetlands necessarily meet the "rare or valuable habitat criteria," and as set forth in Section 30233, "where there is no feasible less environmentally damaging alternative and where feasible mitigation measures have been provided to minimize adverse environmental effects," degraded or low-value wetlands that do not meet the rare or valuable habitat criteria may be subject to restoration in accordance with Section 30233.7.

Chapter 3
Methodology

3.1 Project Research

Prior to the field visit, a 200-foot-scale (1 inch = 200 feet) aerial photograph of the study area was obtained and compared with USGS 7.5-minute topographic quadrangles to identify potential jurisdictional features within the study area as indicated by vegetation types, topographic changes, or visible drainage patterns. The National Hydrography Dataset (NHD) data for the study area (USGS 2015) and the National Wetlands Inventory (USFWS 2015) were referenced to identify any mapped features such as streams and wetlands. The study area was carefully reviewed in Google Earth (Google Earth 2015) at various scales, and potential jurisdictional features were noted and identified on field maps. A review of the U.S. Department of Agriculture, Natural Resources Conservation Service, Soil Survey Geographic database (USDA/NRCS 2015) was attempted but no soil data is available for the study area.

3.2 Jurisdictional Delineation

ICF biologists Paul Schwartz and Lily Sam conducted the jurisdictional waters and wetland delineation for the study area on September 21, 2015. The jurisdictional delineation was conducted between 9:00 a.m. and 1 p.m. The tide during the September 21 field visit was rising from a low tide of +3.02 feet mean sea level (msl) at 9:10 a.m. to a high tide of 4.65 feet msl at 3:51 p.m. (NOAA 2015a). Weather conditions during the delineation consisted of clear skies (5–15% cloud cover), temperatures ranging from 81–88 degrees Fahrenheit, with winds ranging from 0–2 miles per hour. The study area was surveyed on foot and jurisdictional limits, wetland sample points, culverts, and other notable locations were recorded using a Trimble Yuma global positioning system (GPS) unit with a Geneq SX Blue II receiver, providing sub-meter accuracy, and recorded on field maps. Common plant species observed were identified by visual characteristics and morphology in the field. Taxonomic nomenclature for plants follows the National Wetlands Plant List (USACE 2014). If plants were unknown, the *Jepson Manual: Vascular Plants of California,* second edition (Baldwin et al. 2012), was used to identify plants to species level.

On September 29, 2015, Arcadis U.S. Inc. conducted a topographic mapping of a subset of the study area (Appendix A, Figures 6a and 6b). The topographic mapping was prepared at 0.5-foot intervals using National Geodetic Vertical Datum of 1929 (NGVD 29). The NGVD 29 elevations were then converted to North American Vertical Datum of 1988 (NAVD 88) elevations using an Orthometric Height Conversion calculator available via North American Vertical Datum Conversion (VERTCON) (NOAA 2015b). The NOAA MHW and HTL elevations (MLLW datum) were then adjusted to match the NAVD 88 topographic elevations depicted on Figure 6a and 6b by subtracting 0.19 foot from each elevation.

3.2.1 U.S. Army Corps of Engineers Jurisdiction

In order to accurately map the limits of USACE jurisdictional waters and wetlands within the study area, the jurisdictional delineation consisted of two components: a field visit and a desktop analysis. The methodology for both of these components is discussed below.

USACE Field Investigation

Potential Section 404 WoUS and wetlands were initially delineated using methods established in the *Wetland Delineation Manual* (Environmental Laboratory 1987), the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Arid West Region* (USACE 2008a), *A Field Guide to the Identification of the Ordinary High-Water Mark (OHWM) in the Arid West Region of the Western United States* (USACE 2008b), and 2007 and 2008 *Rapanos* guidance (USACE and EPA 2008).[1]

During the September 21, 2015 field visit, the delineation of non-wetland waters was based on the presence of observable OHWM indicators, consisting of break in bank slope, debris wracking, staining, change in sediment texture, and change in vegetation cover. Paired wetland sample points were spaced throughout the study area to determine the limits of the USACE wetland boundary.

At each wetland sample point, several parameters were considered to determine whether the sample point was within a wetland. Three criteria normally must be fulfilled to classify an area as a jurisdictional USACE wetland: (1) a predominance of hydrophytic vegetation, (2) the presence of hydric soils, and (3) the presence of wetland hydrology. Details regarding the application of these techniques are described below.

- **Hydrophytic Vegetation:** The hydrophytic vegetation criterion is satisfied at a location if greater than 50 percent of all the dominant species present within the vegetation unit have a wetland indicator status of obligate (OBL), facultative wetland (FACW), or facultative (FAC) (Environmental Laboratory 1987). An OBL indicator status refers to plants that have a 99 percent probability of occurring in wetlands under natural conditions. An FACW indicator status refers to plants that usually occur in wetlands (67–99 percent probability) but are occasionally found elsewhere. An FAC indicator status refers to plants that are equally likely to occur in wetlands or elsewhere (estimated probability 34–66 percent for each). An NI (no indicator) status designates that insufficient information was available to determine an indicator status. An NO (no occurrence) status indicates that the species does not occur in the region. When a plant with an NO status is found within a region, it usually indicates that the plant is ornamental. The wetland indicator status used for this report follows the *Arid West 2014 Regional Wetland Plant List* (USACE 2014).
- **Hydric Soils:** The definition of a hydric soil is a soil that formed under conditions of saturation, flooding, or ponding long enough during the growing season to develop anaerobic conditions in the upper part (USDA/NRCS 1994). This determination is based on the various field indicators detailed in the *Arid West Supplement* and the *Field Indicators of Hydric Soils in the United States* (Version 7.0) (USDA/NRCS 2010).

[1] On June 5, 2007, USACE and EPA issued guidance related to the *Rapanos-Carabell* consolidated decisions to address the question of jurisdiction over attenuated tributaries to WoUS as well as wetlands adjacent to those tributaries. On December 2, 2008, USACE and EPA issued guidance that incorporated revisions to the June 5, 2007, memorandum. The *Rapanos-Carabell* decision is discussed in further detail in Section 2.1.4, above.

- **Wetland Hydrology:** Wetland hydrology is determined using indicators of inundation or saturation (flooding, ponding, or tidally influenced) detailed in the *Wetland Delineation Manual* and the *Arid West Supplement*.

USACE Desktop Analysis

The waters within the study area are tidally influenced. On November 3, 2015, USACE Regulatory Section Chief Dan Swenson was contacted to confirm the appropriate delineation approach for the study area. It was determined that the upper elevational limits of Section 404 and Section 10 waters

should be determined based on the elevations of the HTL (Maximum Predicted Annual Tide) and the MHW line, respectively.[2] The tidal data from the Santa Monica Tidal Station (Station 9410840) were used to determine the elevational limits of Section 404 and Section 10 waters (NOAA 2015a).

The elevational limit of Section 404 waters was established based on the HTL, which is based on the maximum predicted annual tide for the study area. The maximum predicted annual tide for the Santa Monica Tidal Gauge Station for the study area is +6.9 feet msl (MLLW datum). The elevational limit of Section 10 waters was established based on the MHW elevation (+7.13 feet msl) and then adjusted, as the MLLW elevation (+2.44 feet msl) is used as the baseline elevation for NOAA tidal data. As such, the upper elevational limit of Section 10 jurisdiction in the study area is +4.69 feet msl (MLLW datum). The NOAA MHW and HTL elevations (MLLW datum) were then adjusted to match the NAVD 88 topographic elevations depicted on Figure 6a and 6b by subtracting 0.19 foot from each elevation. Therefore, the Section 404 elevation mapped in the study area is 6.71 feet (NAVD 88) and the Section 10 elevation mapped in the study area is 4.5 feet (NAVD 88).

3.2.2 Regional Water Quality Control Board Jurisdiction

The evaluation of state jurisdiction followed guidance from Section 401 of the CWA and typically follows the same jurisdictional areas that are used to define the limits of Section 404 WoUS and wetlands.

3.2.3 California Department of Fish and Wildlife Jurisdiction

CDFW jurisdiction typically includes features with a defined bed and bank. The evaluation of potential jurisdictional areas follows the guidance of relevant CDFW materials and standard practices by CDFW personnel. CDFW jurisdiction is generally delineated by measuring the outer width and length boundaries of potential jurisdictional areas, consisting of the greater of either the top-of-bank measurement or the extent of associated riparian or wetland vegetation.

For this project, in addition to delineating the physical limits of what could be considered limits of CDFW jurisdiction, the feature was also evaluated using historical aerial photos (Google Earth 2015) to assess the inputs into the feature and its historical function as a marine non-aquatic resource. Based on the review of that data, it was determined that the feature is a canal/lagoon and primarily marine with minimal freshwater input, mostly from local runoff, and does not meet the CFGC definition of a lake or stream.

[2] Dan Swenson, USACE Regulatory Section Chief (Los Angeles District), personal communication, November 3, 2015

3.2.4 California Coastal Commission

CCC jurisdictional wetlands were mapped as the limits of one-parameter wetlands, consisting of the presence of a preponderance of hydrophytic vegetation, and/or the presence of hydric soils, and/or the presence of wetland hydrology. USACE standard definitions provided above were used to define each of the three potential wetland indicators used to delineate CCC wetlands. The upper limits of CCC one-parameter wetlands consisted of the greater of either the limits of the OHWM, Section 404 elevations, limits of hydric soils, or the upper limits of areas supporting a preponderance of hydrophytic vegetation.

Chapter 4
Environmental Setting

This chapter describes the topography, land use, hydrology, vegetation characteristics, and soils associated with the study area.

4.1 Topography and Land Use

The study area is within the coastal low lands of the community of Venice, City of Los Angeles, California, at the confluence of the Grand Canal and Ballona Lagoon. Ballona Lagoon is connected to the Marina Del Rey Harbor channel approximately 0.80 mile to the southeast, and the study area is subject to muted daily tidal fluctuations. The Grand Canal is the main channel of the Venice Canals. The elevations within the study area range from sea level to approximately 12 feet above mean sea level (msl) (USGS 1964). The study area consists primarily of either open water, the vegetated banks associated with Ballona Lagoon and the Grand Canal, or developed lands associated with the adjacent upland residential areas. A portion of the existing VPP is in the study area. Sidewalks run along both sides of the Grand Canal; however, the sidewalk on the eastern bank is in need of repair and has areas of pickleweed vegetation growing through cracks. The study area is surrounded by residential housing to the north, west and east, the existing VPP to the west, and open water associated with the Ballona Lagoon to the south.

The NHD depicts the Grand Canal and Ballona Lagoon within the study area as an NHD Streamline (Appendix A, Figure 3). The National Wetlands Inventory has mapped the following wetland types as occurring in the study area: Estuarine and Marine Deepwater and Estuarine and Marine Wetland occurring in Ballona Lagoon, and Riverine occurring in the Grand Canal (Appendix A, Figure 4).

4.2 Hydrology

4.2.1 Precipitation

The regional climate is characterized by hot, dry summer months and mild winters. Seasonal rainfall averages 12.01 inches per year and occurs predominantly from only a few storm events between October and April. The following precipitation data (Table 4-1) for Los Angeles International Airport, California, were used for this analysis (Western Regional Climate Center 2015).

Table 4-1. Average Rainfall Data Summary for Los Angeles International Airport, California (in inches)

Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Total Average 2.65 2.67 1.85 0.77 0.17 0.05 0.02 0.07 0.16 0.39 1.40 1.82 **12.02** Source: Western Regional Climate Center 2015

4.2.2 Hydrologic Unit

The study area is within the Garapito Creek-Frontal Santa Monica Bay Hydrologic Unit Code (HUC) 10 watershed, which is included in the larger Santa Monica Bay HUC 8 watershed. The Garapito Creek Frontal Santa Monica Bay HUC 10 and Santa Monica Bay HUC 8 watersheds terminate in the

Pacific Ocean (Appendix A, Figure 5).

The Santa Monica Bay HUC 8 watershed drains an area of approximately 385 square miles and contains 27 sub-watersheds. The northern extent of the watershed extends along the Ventura-Los Angeles County line on the west to the Ballona Creek Watershed to the south. Much of the northern portion of the watershed is open space associated with the Santa Monica Mountains. The middle and southern portions of the watershed are more urban and contains portions of Los Angeles, Santa Monica, El Segundo, Manhattan Beach, Redondo Beach and Palos Verdes. (City of Los Angeles Stormwater Program 2015.)

4.3 Vegetation/Land Cover Types

Community descriptions from the *Manual of California Vegetation* (Sawyer et al. 2009) were used to classify the vegetation within the study area where possible. The study area is composed of the following vegetation/land cover types: Developed Lands, Ornamental Vegetation, Estuarine/Open Water, Lower Coastal Salt Marsh, and Upper Coastal Salt Marsh. Each of these vegetation types/land uses is discussed below.

4.3.1 Developed

Developed lands were mapped in association with the residential structures and surface roads within the study area and includes ornamental vegetation typically associated with the developed areas such as Mexican fan palm (*Washingtonis robusta;* FACW), acacia (*Acacia* sp., UPL), eucalyptus (*Eucalyptus* sp.; UPL), Peruvian pepper tree (*Schinus molle;* FACU), iceplant (*Carpobrotus* sp.; FACU), and myoporum (*Myoporum* sp.; FACU).

4.3.2 Disturbed/Ruderal

This area vegetation type was mapped on the eastern side of the study area associated with a vacant lot surrounded by developed lands to the north, east, and south. The area contains a small facility (unknown purpose) and a small footpath leading from the sidewalk adjacent to the Grand Canal to the Via Dolce surface street. This area is dominated by non-native and native annual and perennial species such as iceplant (*Carpobrotus* sp.; FACU), garland chrysanthemum (*Glebionis coronaria;* UPL), telegraphweed (*Heterotheca grandiflora;* UPL), cheeseweed (*Malva parviflora*; UPL), Bermuda grass (*Cynodon dactylon*; FACU), and Australian saltbush (*Atriplex semibaccata*; FAC).

4.3.3 Sarcocornia pacifica Herbaceous Alliance (Pickleweed Mats)

This vegetation type was mapped within the tidal zone of the Grand Canal and Ballona Lagoon. This area is dominated by native wetland species such as pickleweed (*Sarcocornia pacifica*; OBL), batis (*Batis maritima*; OBL), wooly seablight (*Suaeda taxifolia*, FACW), spearscale (*Atriplex prostrata*;

FACW), and fleshy jaumea (*Jaumea carnosa*; OBL). The upper portions of this area support species such as salt grass (*Distichilis spicata*; FAC), five-hooked bassia (*Bassia hyssopifolia*; FAC), beach bur (*Ambrosia chamissonis*; UPL), and alkali heath (*Frankenia salina*; FACW) indicating the start of the wetland-upland interface.

4.3.4 *Frankenia salina* Herbaceous Alliance (Alkali Heath Marsh)

This vegetation type was mapped immediately above the tidal zone of the Grand Canal and Ballona Lagoon. This area is dominated by species such as alkali heath (*Frankenia salina*; FACW), salt grass

(*Distichilis spicata*; FAC), five-hooked bassia (*Bassia hyssopifolia*; FAC), wooly seablight (*Suaeda taxifolia*, FACW), beach bur (*Ambrosia chamissonis*; UPL), alkali heliotrope (*Heliotropium curassavicum;* FACU), and deerweed (*Acmispon glaber;* UPL). The lower portion of this area transitions to wetland species such as pickleweed (*Sarcocornia pacifica*; OBL), batis (*Batis maritima*; OBL), and fleshy jaumea (*Jaumea carnosa*; OBL).

4.3.5 *Distichilis spicata* Herbaceous Alliance—Disturbed (Salt Grass Flats—Disturbed)

This vegetation type was mapped along the upper banks of the Grand Canal. The cover of vegetation is relatively low as this area is adjacent to sidewalks and has been impacted by regular foot traffic. This area is dominated by salt grass and flax-leaved horseweed (*Erigeron bonariensis*; UPL). It also contains some cover of five-hooked bassia (*Bassia hyssopifolia*; FAC), alkali heath (*Frankenia salina*; FACW), and Bermuda grass (*Distichilis spicata*; FAC).

4.4 Soils

No mapping is available from the Natural Resources Conservation Service for the study area. Based on soils observed in the wetland sample points, the soils on site consisted of sandy clay and loams.

Chapter 5
Jurisdictional Delineation Results

This chapter describes the delineated features and expected jurisdictional status within the study area. This report documents the potential jurisdictional waters, wetlands, and other aquatic features within the study area. An impacts analysis is not included as a part of this report.

The information and results included herein document the investigation, best professional judgment, and conclusions of the investigators. It is correct and complete to the best of our knowledge. However, all jurisdictional determinations should be considered preliminary until reviewed and approved by the regulatory agencies. The study area was delineated with the understanding that a request for a Preliminary JD would be submitted for the project.

Appendix A, Figures 6a and 6b, depict the results of the jurisdictional delineation. Photographs documenting the conditions present during the delineation are provided in Appendix B. Wetland Determination Data forms are provided in Appendix C, and a Preliminary JD form is included in Appendix D.

5.1 Delineated Feature Descriptions

Two named features were documented as occurring within the study area: Ballona Lagoon and Grand Canal. For the purposes of this delineation, the two features are treated as one feature of open water and associated wetlands referred to as Ballona Lagoon and Grand Canal. The feature was determined to contain waters and wetlands subject to the jurisdiction of USACE under Section 404 and Section 10 of the CWA, waters and wetlands subject to the jurisdiction of the RWQCB under Section 401 of the CWA, estuarine habitat subject to the jurisdiction of CDFW under Section 1600 et seq. of the California Fish and Game Code, and coastal wetlands subject to the jurisdiction of CCC under Title 14 of the California Code of Regulations and Section 30107.5 of the California Coastal Act. Each of the various jurisdictions is discussed below. Table 5-1 presents a summary of all jurisdictions within the study area.

5.1.1 USACE/RWQCB Jurisdiction Description

Within the study area, the Ballona Lagoon and the Grand Canal is a perennial water feature and is a direct tributary to the Marina Del Rey Harbor Channel and the Pacific Ocean. Based on physical evidence (i.e., break in bank slope, debris wracking, staining, change in sediment texture, and change in vegetation cover) within the study area, the OHWM was observed to be at the toe of the slope along the 2.5-foot elevational contour. Based on the tidal gauge data from the Santa Monica Tidal Gauge Station (adjusted to plot on NAVD 88 topographic elevations), the limits of potential Section 404 and Section 10 waters were determined to be +6.71 feet (NAVD 88)and +4.5 feet (NAVD 88), respectively (Appendix A, Figure 6a). Several sets of paired wetland sample points were assessed to determine the extent of three-parameter USACE wetlands. Based on the results of the wetland sample points, the lower areas of the channel banks were determined to meet the criteria for three-parameter USACE wetlands (Appendix A, Figure 6a).

Within the study area, approximately 0.929 acre of USACE Section 404 WoUS and 0.075 acre of Section 404 wetlands were mapped, and approximately 0.793 acre of Section 10 navigable waters was mapped.

Within the study area, approximately 0.929 acre of RWQCB Section 401 WoS and 0.075 acre of

Section 401 wetlands were mapped. Appendix A, Figure 6a, depicts potential USACE and RWQCB jurisdiction mapped within the study area.

5.1.2 CDFW Jurisdiction Description

As discussed in Section 3.2.3 above, it was determined that this feature was not subject to CDFW jurisdiction, based on the lack of freshwater input and the historic context of this feature receiving any freshwater flows. It should be noted that the feature does provide habitat and so is expected to be subject to CDFW jurisdiction under the California Endangered Species Act (CESA) and the California Environmental Quality Act (CEQA). Those assessments and conclusions are discussed separately in the *Biological Resources and Habitat Assessment, Venice Auxiliary Pumping Plant, Los Angeles County, California*, dated January 2016 (ICF 2016).

5.1.3 CCC Jurisdiction Description

The limits of potential CCC jurisdictional one-parameter wetlands in the study area were determined by the presence of the hydrology parameter, which was based on the limits of Section 404 WoUS (6.71 feet, NAVD 88). The 6.71 foot msl elevation exceeded the limits of the hydric soil and hydrophytic vegetation parameters. Within the study area, approximately 0.929 acre of CCC jurisdiction was mapped. Appendix A, Figure 6b, depicts potential CCC jurisdiction mapped within the study area.

5.2 Delineation Results Summary

Within the entire study area, one feature that could be subject to the jurisdiction of USACE, RWQCB/EPA, CDFW, and CCC was delineated: Ballona Lagoon and Grand Canal. USACE and RWQCB/EPA potential jurisdictional areas within the study area total approximately 0.929 acre of Section 404 non-wetland WoUS/Section 401 non-wetland WoS and 0.075 acre of Section 404 wetland WoUS and Section 401 wetland WoS. Additionally, 0.793 acre of potential USACE Section 10 WoUS was mapped in the study area. Appendix A, Figure 6a, depicts the limits of potential USACE/RWQCB jurisdiction in the study area. Potential CCC jurisdiction within the study area totaled approximately 0.929 acre of one-parameter wetlands. Appendix A, Figure 6b, depicts the limits of potential CCC jurisdiction in the study area.

Table 5-1. Jurisdictional Delineation Summary (acres)

Jurisdiction	**Ballona Lagoon and Grand Canal**
USACE Section 404 Non-Wetland WoUS/RWQCB Section 401 Non-Wetland WoS	0.929
USACE Section 404 Wetland WoUS/RWQCB Section 401 Wetland WoS	0.075
USACE Section 10 Navigable WoUS	0.793
CCC One-Parameter Wetlands	0.929
Acres Total	0.929

5.3 List of Delineators and Report Preparers/ Reviewer

Paul Schwartz, Senior Biologist—Lead Delineator/Report Preparer

Lily Sam, Biologist—Delineator

Megan Jameson, Senior Regulatory Specialist—Report Reviewer

Brittany Buscombe—GIS Specialist

Chapter 6
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Personal Communication

Dan Swenson. USACE Regulatory Section Chief, Los Angeles District. November 3, 2015 and December 28, 2015—personal conversation regarding Section 404 elevational limits and Section 10 limits in the tidal waters of Ballona Lagoon and Grand Canal. City of Los Angeles, Los Angeles County, California.

Appendix A
Jurisdictional Delineation Maps

1 Regional Vicinity Map

2 USGS Topographic Map

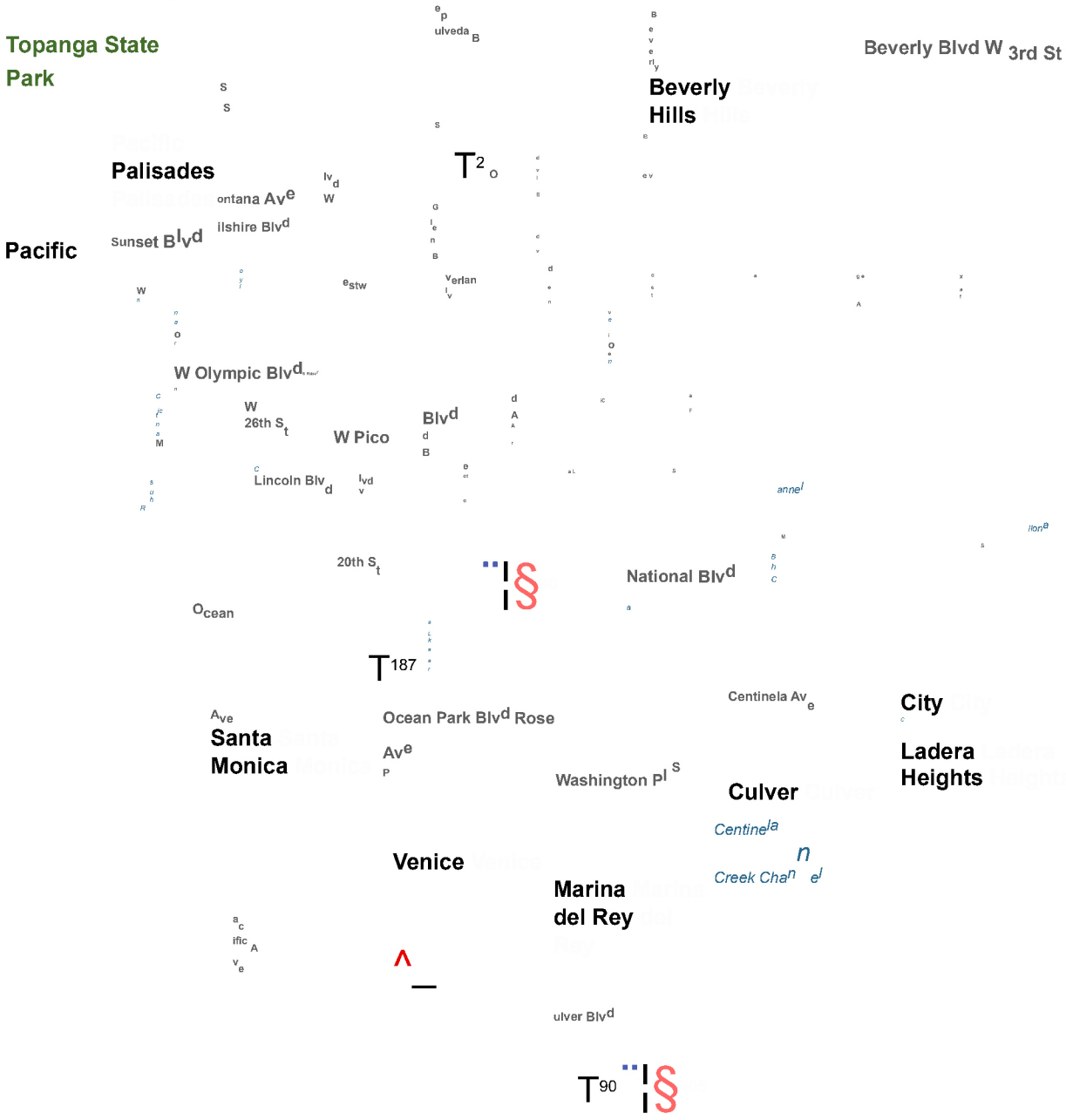
3 National Hydrography Dataset Map

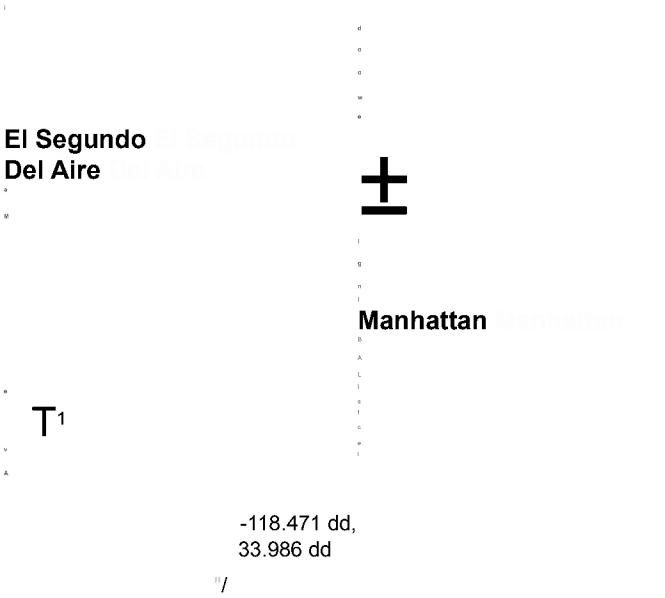
4 National Wetlands Inventory Map

5 Watershed Map

6a USACE/RWQCB Jurisdictional Delineation Results

6b CDFW/CCC Jurisdictional Delineation Results





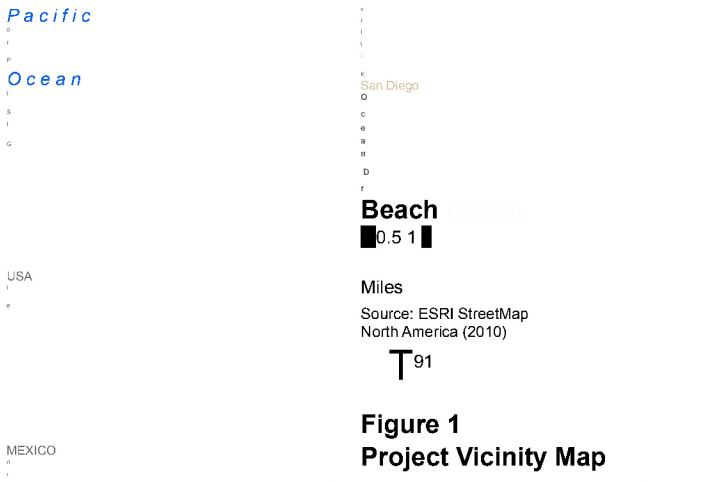


Figure 1
Project Vicinity Map
Venice Auxiliary Pumping Plant Project



Figure 2

USGS Topographic Map
Venice Auxiliary Pumping Plant Project

-118.471 dd, 33.986 dd

Legend

1 inch = 1,000 feet

1,000

Feet

Source: NHD;
ESRI World Imagery (2010) Map
Prepared: 1/13/2016

Jurisdictional Delineation

Study Area NHD Streamline

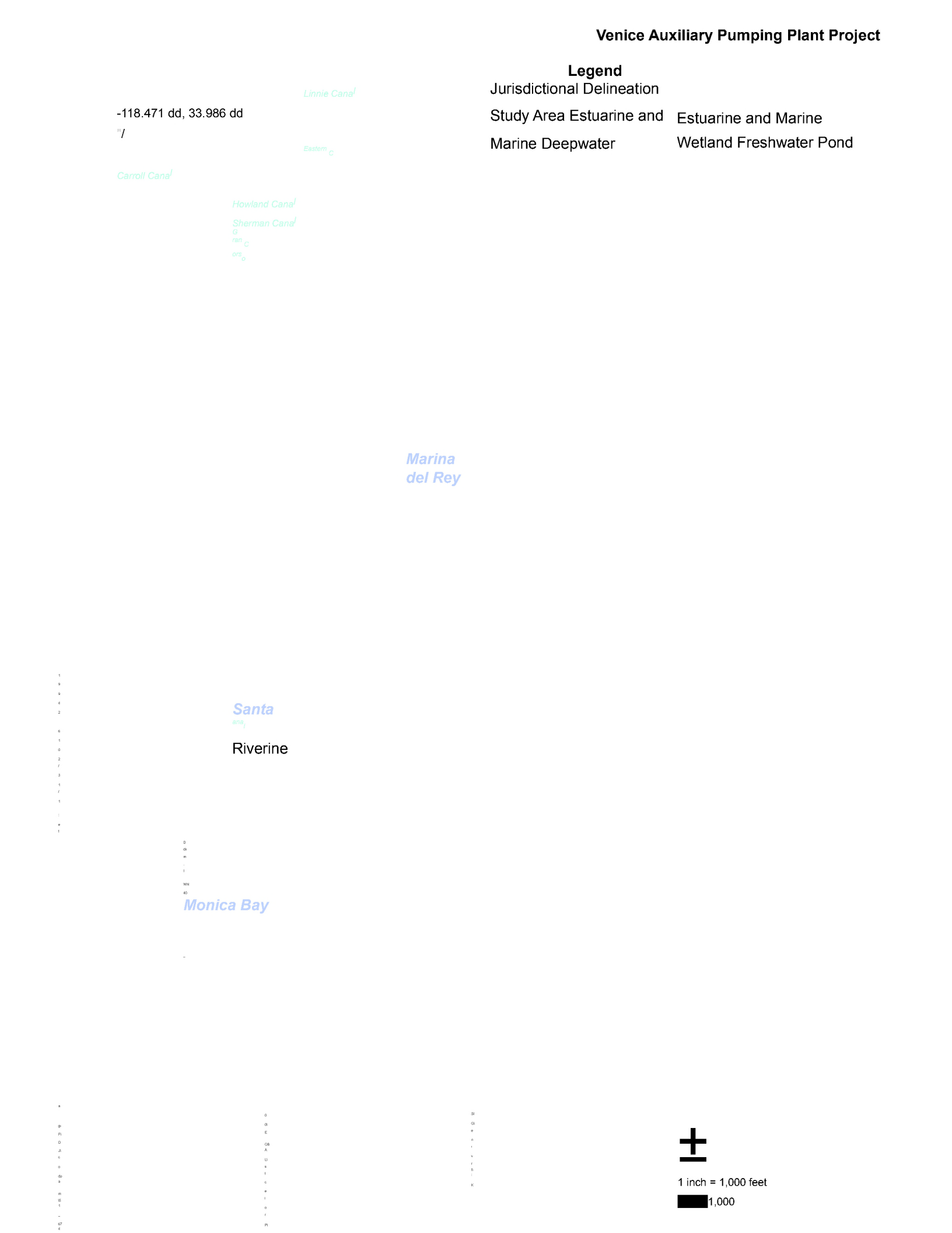
-118.453 dd,
33.965 dd

Ballona Creek

Figure 3

National Hydrography Dataset Map

Venice Auxiliary Pumping Plant Project



Feet

Source: NHD;
ESRI World Imagery (2010) Map
Prepared: 1/13/2016

Figure 4

"/
-118.453 dd,
33.965 dd

National Wetlands Inventory Map
Venice Auxiliary Pumping Plant Project

Watershed (HUC 8)

Legend







Jurisdictional
Delineation Study Area
Watersheds (HUC 10)

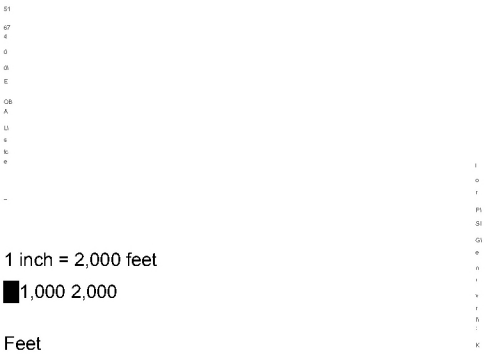
Santa Monica Bay

Dominguez
Channel

V_{90}

V_1

Ballona
Creek



1 inch = 2,000 feet

1,000 2,000

Feet

")
-118.462 dd,
33.976 dd

Source: NHD;
ESRI World Imagery (2010) Map Prepared: 1/13/2016

Figure 5
Watershed Map
Venice Auxiliary Pumping Plant
Project

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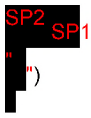
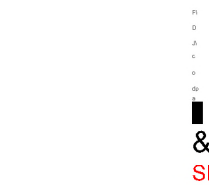


Pumping Plant

Legend

Study Area (SA) = 3.013 Acres
-118.459 dd,
33.975 dd



Ballona Lagoon

Limits of Section 404 Non-Wetland WoUS/Section 401 Non-Wetland WoS; Elev. 6.71'; Acres in SA = 0.929

Section 404 Wetland WoUS/Section 401 Wetland WoS; Acres in SA = 0.075



1 inch = 60 feet

0 30

&

Limits of Section 10 Navigable WoUS; Elev. 4.5', Acres in SA = 0.793 ") Wetland Sample Point

Topographic Line (NAVD 88)

& Photo Point

Source: Google Earth

Map Prepared: 1/7/2016

#* Culvert

Figure 6a
USACE/RWQCB Jurisdictional Delineation Results Map Venice Auxiliary Pumping Plant Project

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-118.462 dd,
33.976 dd

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Venice
Pumping Plant

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-118.459 dd, 33.975 dd

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SP4 ")

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Ballona Lagoon
Legend

Study Area (SA) = 3.013 Acres

SP3

±

■
&

1 inch = 60 feet
0 30 ■

&
CCC 1-Parameter Wetland; Acres in SA = 0.929 ") Wetland Sample Point

Topographic Line (NAVD 88)

& Photo Point

■

Source: Google Earth Map Prepared: 1/7/2016

■

#* Culvert

Figure 6b
CCC Jurisdictional Delineation Results Map Venice Auxiliary Pumping Plant Project

Appendix B
Study Area Photographs
Venice Auxiliary Pumping Plant Appendix B: Photo Log

	**Photograph #** 1 **Photo Date** 9/21/2015 **Location** West side of study area, adjacent to trail. **Direction** Northeast **Comment** Photo depicts conditions along the banks of Ballona Lagoon.
	**Photograph #** 2 **Photo Date** 9/21/2015 **Location** West side of study area, south of existing pumping plant. **Direction** Southwest **Comment** Photo depicts conditions along the concrete bank south of the existing pumping plant.



Photograph # 3

Photo Date 9/21/2015

Location West side of study area, along sidewalk on east side of existing pumping plant.

Direction Northwest

Comment Photo depicts conditions present along the west side of Grand Canal.

Venice Auxiliary Pumping Plant Appendix B: Photo Log



Photograph # 4

Photo Date 9/21/2015

Location West side of study area, at Intersection of Canal Ct. and Hurricane St.

Direction Northeast

Comment Photo depicts conditions present where the proposed auxiliary pumping plant will be located.



Photograph # 5

Photo Date 9/21/2015

Location West side of study area, along sidewalk adjacent to residential housing and location of proposed auxiliary pumping plant.

Direction Southeast.

Comment Photo depicts conditions present along the west side of Grand Canal.



Photograph # 6

Photo Date 9/21/2015

Location West side of study area, along sidewalk on east side of existing pumping plant.

Direction Northwest

Comment Photo depicts location of SP 1.

Venice Auxiliary Pumping Plant Appendix B: Photo Log



Photograph # 7

Photo Date 9/21/2015

Location West side of study area, along sidewalk on east side of existing pumping plant.

Direction Northwest

Comment Photo depicts location of SP 2.



Photograph # 8

Photo Date 9/21/2015

Location West side of study area, adjacent to side walk along Ballona Lagoon.

Direction Northeast

Comment Photo depicts location of SP 3.



Photograph # 9

Photo Date 9/21/2015

Location West side of study area, adjacent to side walk along Ballona Lagoon.

Direction Northeast

Comment Photo depicts location of SP 4.

Venice Auxiliary Pumping Plant Appendix B: Photo Log



Photograph # 10

Photo Date 9/21/2015

Location East side of the study area, in empty lot.

Direction Southeast

Comment Photo depicts conditions present within the empty lot on east side of the study area.



Photograph # 11

Photo Date 9/21/2015

Location Sidewalk on east side of Grand Canal.

Direction Northwest

Comment Photo depicts conditions present along the sidewalk on the east side of Grand Canal.



Photograph # 12

Photo Date 9/21/2015

Location Sidewalk on east side of Grand Canal.

Direction Southeast

Comment Photo depicts conditions present along the sidewalk on the east side of Grand Canal.



Photograph # 13

Photo Date 9/21/2015

Location East side of the study area, confluence of Grand Canal and Ballona Lagoon.

Direction Northwest

Comment Photo depicts conditions present along the sidewalk on the east side of Grand Canal.



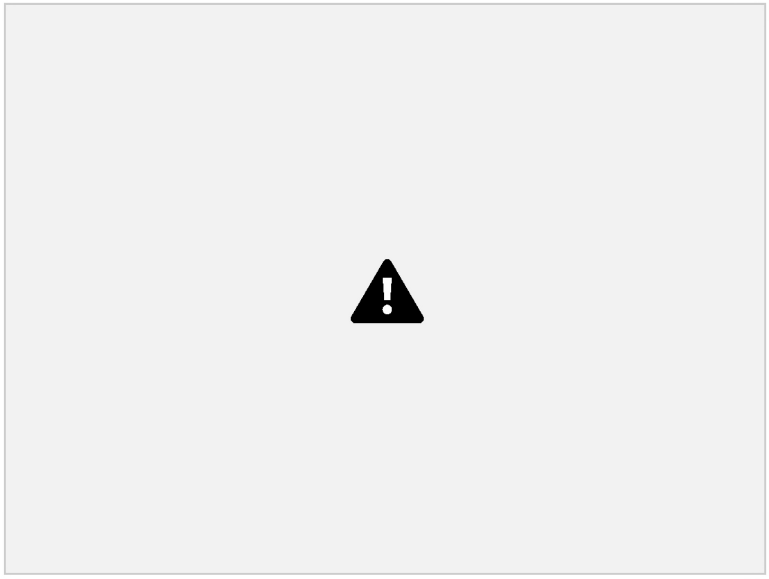
Photograph # 14

Photo Date 9/21/2015

Location East side of study area, in empty lot.

Direction Northwest

Comment Photo depicts location of SP 5.



Photograph # 15

Photo Date 9/21/2015

Location East side of study area, in empty lot.

Direction Northwest

Comment Photo depicts location of SP 6.

Appendix C
Wetland Determination Data Forms
Appendix D
Preliminary Jurisdictional Determination Form

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

Los Angeles District

District Office File/ORM # PJD Date:

CA

ty of Los Angeles, Department of
ıblic Works

State City/County

Los Angeles/I

Nearest Waterbody:

Location: TRS, LatLong or UTM:

Grand C

(WGS 8

Name/
Address of Person
Requesting PJD

Tidal:

Non-Wetland Waters:

Stream Flow:

Identify (Estimate) Amount of Waters in the Review Area:

See atta

on the Site Identified as

Name of Any Water Bodies

Non-Tidal:

0.92 linear ft | width | acres

N/A Section 10 Waters:

Class:

Estuarine

Determination:

Wetlands:

0.075 acre(s) Cowardin

Date of Field Trip:

Office (Desk) Determination Field

SUPPORTING DATA: Data reviewed for preliminary JD (check all that apply - checked items should be included in case file and, where checked and requested, appropriately reference sources below):

Maps, plans, plots or plat submitted by or on behalf of the applicant/consultant:

Office does not concur with data sheets/delineation report.

Data sheets prepared/submitted by or on behalf of the applicant/consultant.

Data sheets prepared by the Corps

Office concurs with data sheets/delineation report.

See JD report

Corps navigable waters' study:

U.S. Geological Survey Hydrologic Atlas:

U.S. Geological Survey map(s). Cite quad name:

USGS NHD data.

Venice, California

USGS 8 and 12 digit HUC maps.

USDA Natural Resources Conservation Service Soil Survey. Citation:

No NRCS/USDA soil data available

See Figure 5 from JD report.

National wetlands inventory map(s). Cite name:

State/Local wetland inventory map(s): FEMA/FIRM maps:

100-year Floodplain Elevation is:

Photographs: Aerial (Name & Date):

✔

✔

Google Earth, Various dates.

Site Photographs from 9/21/2015

Other (Name & Date):

✔

Previous determination(s). File no. and date of response letter:

Other information (please specify):

IMPORTANT NOTE: The information recorded on this form has not necessarily been verified by the Corps and should not be relied upon for later jurisdictional determinations.

(REQUIRED)

Signature and Date of Regulatory Project Manager

Signature and Date of Person Requesting Preliminary JD
(REQUIRED, unless obtaining the signature is impracticable)

EXPLANATION OF PRELIMINARY AND APPROVED JURISDICTIONAL DETERMINATIONS:

1. The Corps of Engineers believes that there may be jurisdictional waters of the United States on the subject site, and the permit applicant or other affected party who requested this preliminary JD is hereby advised of his or her option to request and obtain an approved jurisdictional determination (JD) for that site. Nevertheless, the permit applicant or other person who requested this preliminary JD has declined to exercise the option to obtain an approved JD in this instance and at this time.

2. In any circumstance where a permit applicant obtains an individual permit, or a Nationwide General Permit (NWP) or other general permit verification requiring "preconstruction notification" (PCN),

or requests verification for a non-reporting NWP or other general permit, and the permit applicant has not requested an approved JD for the activity, the permit applicant is hereby made aware of the following: (1) the permit applicant has elected to seek a permit authorization based on a preliminary JD, which does not make an official determination of jurisdictional waters; (2) that the applicant has the option to request an approved JD before accepting the terms and conditions of the permit authorization, and that basing a permit authorization on an approved JD could possibly result in less compensatory mitigation being required or different special conditions; (3) that the applicant has the right to request an individual permit rather than accepting the terms and conditions of the NWP or other general permit authorization; (4) that the applicant can accept a permit authorization and thereby agree to comply with all the terms and conditions of that permit, including whatever mitigation requirements the Corps has determined to be necessary; (5) that undertaking any activity in reliance upon the subject permit authorization without requesting an approved JD constitutes the applicant's acceptance of the use of the preliminary JD, but that either form of JD will be processed as soon as is practicable; (6) accepting a permit authorization (e.g., signing a proffered individual permit) or undertaking any activity in reliance on any form of Corps permit authorization based on a preliminary JD constitutes agreement that all wetlands and other water bodies on the site affected in any way by that activity are jurisdictional waters of the United States, and precludes any challenge to such jurisdiction in any administrative or judicial compliance or enforcement action, or in any administrative appeal or in any Federal court; and (7) whether the applicant elects to use either an approved JD or a preliminary JD, that JD will be processed as soon as is practicable. Further, an approved JD, a proffered individual permit (and all terms and conditions contained therein), or individual permit denial can be administratively appealed pursuant to 33 C.F.R. Part 331, and that in any administrative appeal, jurisdictional issues can be raised (see 33 C.F.R. 331.5(a)(2)). If, during that administrative appeal, it becomes necessary to make an official determination whether CWA jurisdiction exists over a site, or to provide an official delineation of jurisdictional waters on the site, the Corps will provide an approved JD to accomplish that result, as soon as is practicable.

PRELIMINARY JURISDICTIONAL DETERMINATION FORM

This preliminary JD finds that there *"may be"* waters of the United States on the subject project site, and identifies all aquatic features on the site that could be affected by the proposed activity, based on the following information:

Appendix A - Sites

Los Angeles District

District Office File/ORM # PJD Date:

CA

Los Angeles/Los

State City/County Person Requestinq PJD

Site	Aquatic Resource	Class of Resource	Number in Review Area	Latitude	Longitude	Cowardin Class	Est. Amount of Aquatic Resource	Class
1			1	33.97		Estuarine	0.929	non-wetland
1			1	33.97	-118.461	Estuarine	0.075	Non-Section 10 wetland
1			1	33.97	-118.461	Estuarine	0.793	Section 10 tidal
				-118.46			Non	

Notes:

See attached jurisdictional delineation report for additional information.

Venice Auxiliary Pumping Plant
Sea Level Rise Hazard Analysis

Prepared For:

Los Angeles Department of City Planning
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Los Angeles, CA 90012

Prepared By:

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December 2019

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Disclaimer: *It is understood that estimating and projecting future weather, tidal, ocean and on-shore conditions and their impacts upon existing or contemplated developments or resources is difficult, complex and based on variable assumptions, and further, is impacted by factors potentially beyond the Consultant's ability to predict or control. Accordingly, any estimates, forecasts reviews or assessments provided as part of the Services are presented solely on the basis of the assumptions accompanying the estimates, forecasts, reviews and assessments, and subject to the information or data utilized at the time of this Project. As such, Consultant makes no warranty that the hazard maps will represent actual climate events or that adaptation measures will be adequate to protect against actual climate events. In addition, to the extent Consultant utilizes materials provided by the Client or third parties, or material that is generally available, Consultant is entitled to rely upon any such information concerning the Project, except to the extent it is explicitly provided that Consultant will independently verify the accuracy or completeness of such materials or information.*

Acronyms and Abbreviations

BFE	Base Flood Elevation
Cal EMA	California Emergency Management Agency
Cal OES	State of California Office of Emergency Services
CCC	State of California Coastal Commission
CDP	Coastal Development Permit
CEQA	California Environmental Quality Act
City	City of Los Angeles
cm	centimeter
CoSMoS	Coastal Storm and Modeling System
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
gpm	gallons per minute
H++	Extreme SLR scenario due to rapid Antarctic ice sheet mass loss (Sweet et al, 2017)
LA	Los Angeles
M&N	Moffatt & Nichol
MHHW	mean higher high water
MHW	Mean high water level
mgd	million gallons per day
MLLW	mean lower low water
MSL	mean sea level
NAVD 88	North American Vertical Datum of 1988
NFIP	National Flood Insurance Program
NOAA	National Oceanic and Atmospheric Association
OPC	Ocean Protection Council
PFIRM	Preliminary Flood Insurance Rate Map
EIR	Environmental Impact Report
SLR	Sea Level Rise
USGS	U.S. Geological Survey
VAPP	Venice Auxiliary Pumping Plant
VSPP	Venice Stormwater Pumping Plant
VPP	Venice Pumping Plant

Executive Summary

The City of Los Angeles is in the process of obtaining a Coastal Development Permit (CDP) for the Venice Auxiliary Pumping Plant (VAPP). To assist the City in this effort, Moffatt & Nichol has been commissioned to prepare a sea level rise hazard analysis specific to the Project site and design life that is consistent with the *California Coastal Commission (CCC) Sea Level Rise Policy Guidance* originally adopted in August 2015 and updated in November 2018 to incorporate sea level rise projections released by the California Ocean Protection Council (OPC) in 2018.

The Venice Pumping Plant (VPP), owned and operated by the City of Los Angeles, is the largest pumping plant in the City with an average flow of 20 million gallons per day (mgd). The facility has no diversions for bypassing and has had near misses which have nearly resulted in the discharge of untreated sewage into the Grand Canal and Ballona Lagoon. An upgrade to the VPP, the VAPP is proposed to increase the pumping capacity and includes a diversion and bypass pipeline to allow for necessary maintenance on the existing VPP. The project is critical to the ongoing operation and maintenance of the City's Coastal Interceptor Sewer.

A sea level rise study was performed recently by Moffatt and Nichol (2018) for the community of Venice. This study uses the sea level rise scenarios developed during the previous study, based on data available from the USGS Coastal Storm Modeling System (CoSMoS) and the Ocean Protection Council's *Sea Level Rise Guidance (OPC 2018)*, and applies them for a site-specific evaluation of non-storm tidal flooding and coastal flooding scenarios. A range of sea level rise projections are used for this study, including 1.6, 3.3, 4.9, and 6.6 feet. Hazards such as extreme monthly tides and a 100-year coastal storm event were combined with sea level rise scenarios to understand future coastal hazards that could impact the Project site and coastal resources.

The project site is located adjacent to the Grand Canal and the Ballona Lagoon in the community of Venice. The water levels in the Ballona Lagoon are subject to limited tidal influence by the Marina del Rey tide gate in order to provide circulation in the lagoon, but the tide gates prevent water levels from exceeding an elevation of 5 feet above mean lower low water. With the Marina del Rey tide gate in place and functioning, the site is well protected from non-storm tidal events and 100-year coastal storm events for SLR scenarios up to and including 4.9 feet based on the CoSMoS hazard data. There is a 98% chance SLR will not exceed 5 feet this century, indicating the Project is unlikely to be exposed to coastal hazards over the facility's design life of 50 years.

The project is also within the "credible upper bound" tsunami inundation zone depicted on the State of California Tsunami Inundation Map for Emergency Planning (State of California, 2009). However, we do not recommend using this map for the design of hazard mitigation measures. Using this hazard map for design purposes is beyond scope of the map's stated purpose, particularly within a regulatory context:

This tsunami inundation map was prepared to assist cities and counties in identifying their tsunami hazard. It is intended for local jurisdictional, coastal evacuation planning uses only. This map, and the information presented herein, is not a legal document and does not meet disclosure requirements for real estate transactions nor for any other regulatory purpose (State of California, 2009).

City of Los Angeles recognizes the long-term risks of sea level rise, but believes the near-term risks of not implementing the project are more significant as it may result in the discharge of untreated sewage from the VPP. Adaptation strategies involve continued maintenance of the tide gates, and the development of a flood gate operation and maintenance plan that accounts for sea level rise. Other future mitigation recommendations include flood proofing the facility to protect against flooding due to the potential malfunction of the tide gate or extreme coastal hazard event.

1. Introduction

The City of Los Angeles owns and operates the Venice Pumping Plant (VPP) (Pump Station No. 646), located at 140 Hurricane Street in the Los Angeles community of Venice, adjacent to the Ballona Lagoon and the Grand Canal. The VPP was built in 1957 and upgraded in 1987. It is currently the largest pumping plant in the City with a capacity of 45,000 gallons per minute (gpm) and an average of 20 million gallons per day (mgd). During recent years, flow conditions have reached 50 mgd, which nearly resulted in untreated discharges directly into the Grand Canal and Ballona Lagoon. The VPP is a critical facility that services the communities of Topanga, Pacific Palisades, Brentwood, and Mar Vista along with the City of Santa Monica and parts of Los Angeles County.

The VPP has no diversions for bypassing the facility for required maintenance in the event of an emergency. Consequently, the facility is at risk of discharging untreated sewage in the event of a maintenance or operational emergency. To improve the redundancy and resiliency of the VPP, the City has designed a project to upgrade and enhance the VPP. This upgrade will provide the ability to perform critical maintenance on the VPP. The project, known as the Venice Auxiliary Pumping Plant (VAPP) consists of adding a new two-story building with an operation and control center for the pumping plant, three 18 mgd submersible pumps, associated electrical equipment, a diversion structure, a bypass pipeline, and parking spaces. The project will increase the combined capacity of the VPP and VAPP to 87 mgd and provide redundancy and resiliency in the case of emergency. This project is critical to the ongoing operation and maintenance of the City's Coastal Interceptor Sewer (CIS).

The City is in the process of obtaining a Coastal Development Permit (CDP) for the VAPP. To assist the City in this effort, Moffatt & Nichol has been commissioned to prepare a sea-level rise analysis (Study) specific to the project site and design life that is consistent with the *California Coastal Commission Sea Level Rise Policy Guidance* originally adopted in August 2015 and updated in November 2018 to incorporate sea level rise projections released by the California Ocean Protection Council (OPC). The Study evaluates the projected coastal hazards associated with three sea level rise scenarios, the degree to which the Project and coastal resources are impacted by these hazards, and adaptation strategies to avoid or minimize impacts related to sea level rise during the Project design.

1.1 Background

Moffatt & Nichol recently completed a *Sea Level Rise Vulnerability Assessment* for the community of Venice (Moffatt & Nichol, 2018) that evaluated coastal hazards for a range of sea level rise scenarios projected over the remainder of this century. The sea level rise scenarios described in Moffatt & Nichol, 2018 are used as a basis in this report to be consistent with the community scale vulnerability assessment and any forthcoming planning documents. Additional information and references used in this project specific analysis are listed below:

- Marina Del Rey tide gate operations and emergency response measures
- Marina Del Rey tide gates rehabilitation as-built plans dated 2007
- Venice Auxiliary Pumping Plant Design Drawings, Draft 100% submittal

1.2 Site Location

The VAPP is located in the City of Los Angeles in the community of Venice on South Esplanade, and adjacent to the Grand Canal as shown in Figure 1. The site is located adjacent to the existing Venice Pumping Plant (VPP).

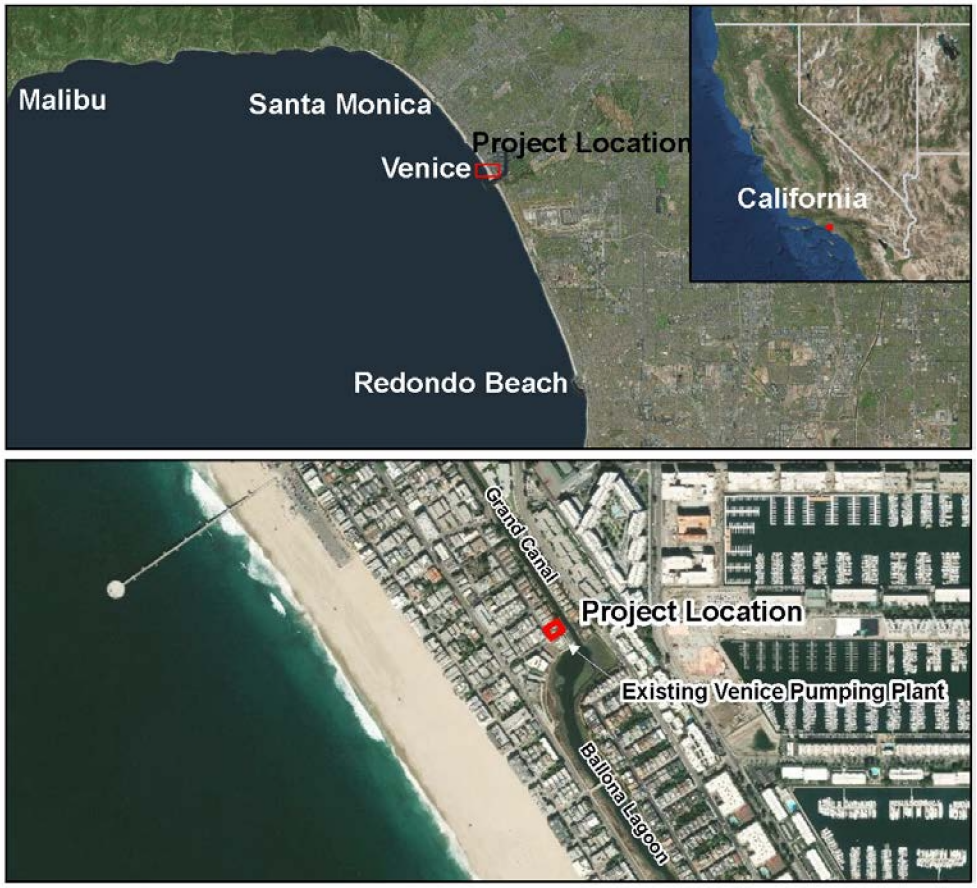

Figure 1: Location Map

1.3 Site Topography

Site topography and elevation are key factors in assessing coastal hazards at the project site. Existing topography of the site and adjacent areas are shown in Figure 2. According to the 100% Design Drawings, the proposed finish floor elevation of the electrical building is 7.67 feet and the pump station elevation is 6.92 feet. The proposed elevations onsite range from 6.92 to 8.0 relative to the North American Vertical Datum of 1988 (NAVD).

The project site is located roughly 1,200 feet from the present-day shoreline behind a ~500 foot wide sandy beach and 700 feet of dense residential development. As illustrated in Figure 2, the back beach and residential development are higher in elevation than the low-lying topography along the Venice Canals. This horizontal setback provides a substantial buffer from current and future coastal hazards such as shoreline erosion and storm-related flooding at the proposed project site.

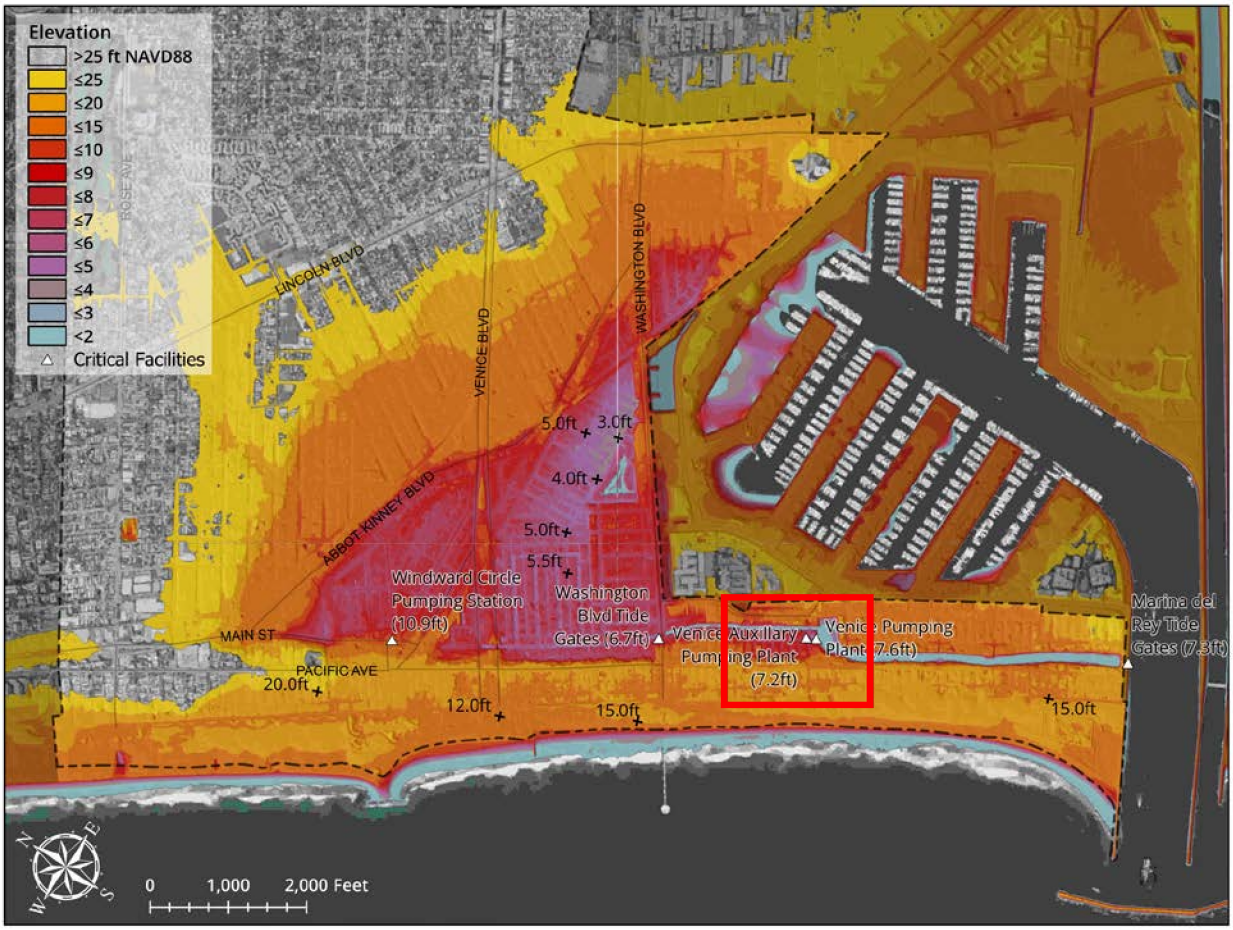

Figure 2: Site Topography

1.4 Venice Canals Tide Gate System

The Venice Canals District and nearby low-lying areas are protected from tidal flooding through a dual tide gate system. The first line of defense is the Marina del Rey tide gate (Figure 3), which is located on the northern Marina del Rey jetty and directly connects the Ballona Lagoon to the Pacific Ocean. For purposes of evaluating the proposed VAPP project the Marina del Rey tide gates are the most important system since they control water levels in the Grand Canal and Ballona Lagoon adjacent to the project site and VPP. The second tide gate is located at Washington Boulevard and directly connects the Venice Canals to the Grand Canal, which opens to Ballona Lagoon.

Both tide gates are owned by the City of Los Angeles and serve to mute the lower and upper limits of the ocean tidal range. This reduction in tide range allows for increased stormwater drainage capacity during the wet season (October - April) and prevents flooding that would otherwise occur during astronomical high tides. An illustration of the wet season and dry season operating modes is provided in Figure 4.

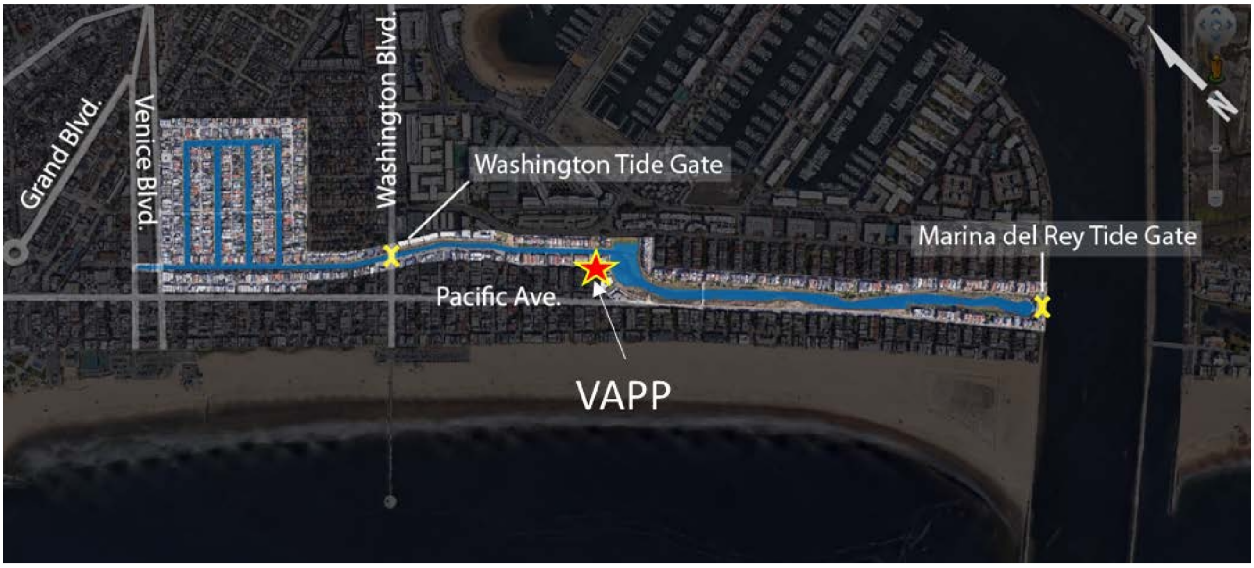

Figure 3: Venice Canals Tidal Gate System

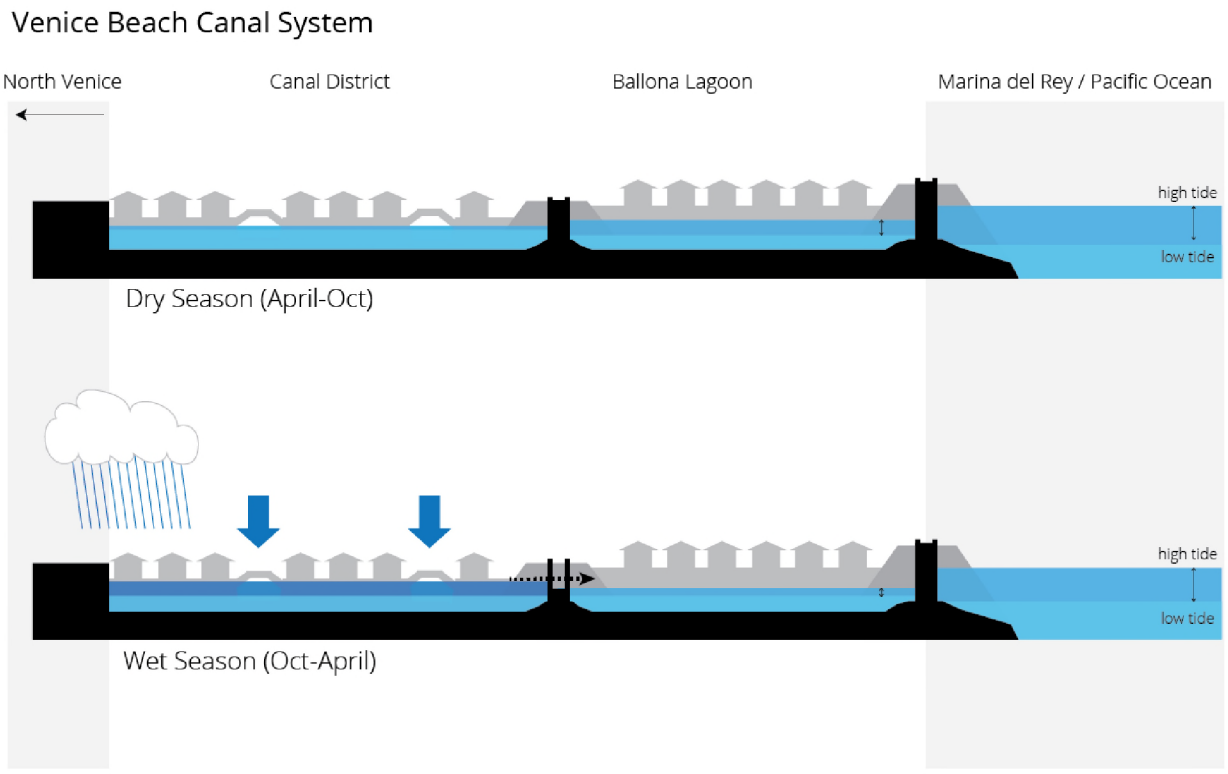

Figure 4: Diagram of wet and dry modes of the Venice Canal Tide Gate System

The Marina del Rey tide gate system is operated by City of LA Sanitation and Environment personnel at the Venice Pumping Plant (VPP). Their philosophy is to keep the gates open as much as possible to allow for tidal influence in the lagoon and canals to improve circulation. During the dry weather season the gates are open until water levels in the Grand Canal reach an elevation of 5 feet above mean lower low

water (MLLW) level which is close to the North American Vertical Datum of 1988 (NAVD 88) as shown in Figure 9. During the wet weather season, the gates are typically closed at a lower elevation, in preparation for a wet weather event. By maintaining a lower water surface elevation in the canals, there is additional storage volume available for attenuating runoff from the tributary watershed. After a wet weather event, the tide gates are opened during the subsequent low tide to convey stormwater to the ocean.

In the 50-year history of the tide gates, no failure has ever occurred that resulted in flooding of the VPP facility. As important flood prevention infrastructure for the coastal zone area, any failure in the operation of the Marina del Rey tide gates could potentially result in flooding of the VAPP and community of Venice. Due to the importance of these tide gates, responsibility for operations and emergency response lie with VPP operators who are on duty 24 hours a day. Typically the gates are operated remotely from the VPP facility but in an emergency, such as a power outage, crews can operate the gates manually onsite.

The tide gates and Via Marina roadway essentially form an earthen levee system that provide flood protection against high ocean water levels. The existing grade above the Marina del Rey tide gate has a relatively high crest elevation of approximately 16 feet (NAVD88) as shown in Figure 5 and is sheltered from direct ocean waves due to the Marina del Rey breakwater. Note, this crest elevation provides roughly 8 feet of freeboard above the preliminary 100-year base flood elevation (BFE) in Marina del Rey.

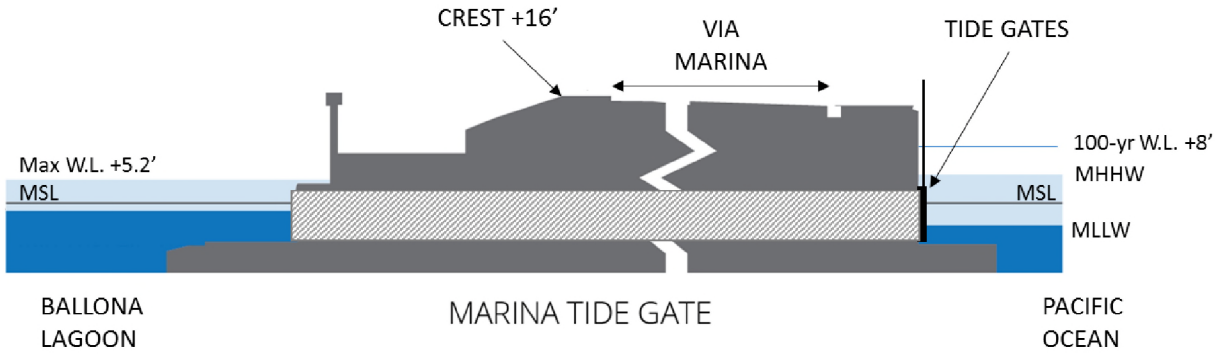

Figure 5: Diagram of Marina del Rey Tide Gate (Based off 2007 as-built drawings)

The Marina del Rey tide gate and surrounding levee are not certified by the Federal Emergency Management Agency (FEMA) as a flood control infrastructure, which means the flood protection provided by this system is not reflected in their hazard analysis. Since the tide gates and levee are neglected in the FEMA analysis, a BFE of 8 feet NAVD88 is mapped along the Ballona Lagoon and Grand Canal as shown in the Preliminary Flood Insurance Rate Map (PFIRM) dated October 28, 2016. Since the project site elevation is slightly lower than the preliminary BFE the VPP and proposed VAPP parcels are mapped within Zone AE.

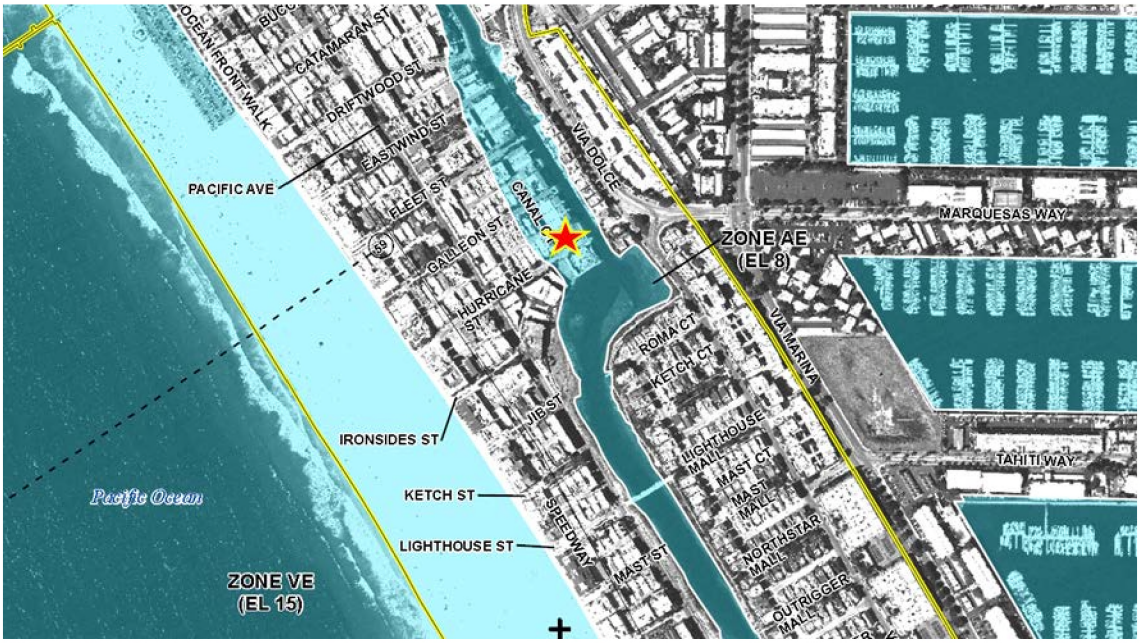

Figure 6: Preliminary FIRM in the Venice Pumping Plant vicinity

2. Sea-Level Rise Scenarios

There is broad agreement in the scientific community that the earth is predicted to warm and that sea levels will rise as a result of the thermal expansion of water and increased contributions from melting glaciers (Coastal and Ocean Working Group of the California Climate Action Team [CO-CAT], 2013; (CCC, 2015). Although there is consensus among the scientific community on these concepts, the timing and severity of sea level rise is relatively uncertain and is dependent on region-specific conditions. The uncertainty in the sea level rise projections is a result of potential variation in future global emissions of carbon dioxide (a function of future social behavior) and the non-linear response of the ocean to warmer temperatures and contributions from land-based ice sources.

2.1 Best Available Science for Sea Level Rise Projections

As a supporting study to a CDP application, the most relevant guidance to this analysis is the *California Coastal Commission Sea Level Rise Policy Guidance* (CCC, 2018). The original guidance document was adopted in 2015 and a science-focused update was adopted in November 2018. The purpose of the update was to incorporate more recent publications by the Ocean Protection Council (OPC) titled *Rising Seas in California: An Update on Sea-Level Rise Science* (2017) and the *State of California Sea-Level Rise Guidance: 2018 Update* (2018). The 2018 OPC SLR Guidance is now referenced as the best available science throughout the CCC SLR Policy Guidance document.

The OPC (2018) Guidance projects SLR for multiple emissions scenarios and uses a probabilistic approach based on Kopp et al. 2014 to generate a range of projections at a given time horizon. For the 2050-time horizon the "likely range" of SLR is between 0.6 to 1.1 feet. Kopp et al. 2014 estimated there is a 66% probability that SLR will fall within this "likely range". The likely range of SLR at the 2070-time horizon is 1.0 - 1.8 feet for a high emissions scenario. The likely range of SLR at the 2100-time horizon is 1.5 – 3.3 feet for a high emissions scenario. The upper end of the "likely range" is recommended for low risk aversion situations where impacts from SLR greater than this amount would be insignificant, or easily mitigated. This "low risk aversion" curve is shown in orange in Figure 7. At any given time horizon there is a 17% chance that SLR will exceed this curve.

For medium-high risk aversion situations more conservative (lower probability) projections for SLR are recommended by the OPC Guidance. These projections have a 1-in-200 chance (0.5% probability) of occurring at a given time horizon and would be appropriate for use on projects where damage from coastal hazards would carry a higher consequence and/or a lower ability to adapt such as residential and commercial structures. The medium-high risk aversion curve is shown in red in Figure 7.

The OPC guidance also includes a specific singular scenario (called H++), based on projections by Sweet et al 2017, which incorporates findings of DeConto and Pollard (2016) that predict Antarctic ice sheet instability could make extreme sea-level outcomes more likely than indicated by Kopp et al. 2014 (OPC, 2017). Because the H++ scenario is not a result of probabilistic modeling the likelihood of this scenario cannot be determined. Due to the extreme and improbable nature of the H++ scenario, it is most appropriate to consider when planning for development that poses a high risk to public health and safety, natural resources and critical infrastructure (OPC 2018). The H++ extreme risk aversion curve is shown in purple in Figure 7.

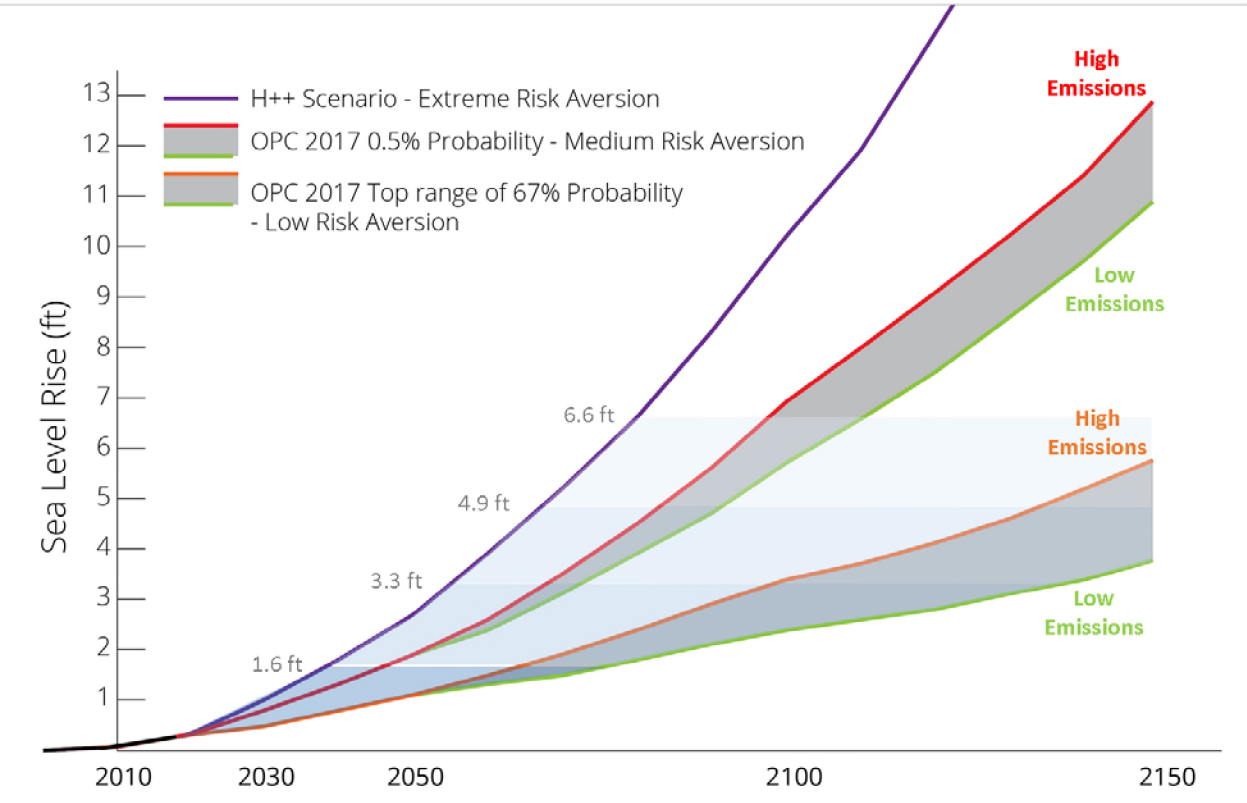

Figure 7: Sea Level Rise Projections for Three Risk Aversion levels, Santa Monica, CA (OPC, 2018)

2.2 Project Specific Sea Level Rise Scenarios

The sea level rise projections used for analysis of coastal hazards were based on a Project design life of 50 years, corresponding to a time horizon of 2070. Rather than focus on sea level rise projected for this single time horizon, multiple scenarios were selected to account for the range in projections at year 2070 and a value reflecting an upper range of sea level rise in 2100.

This iterative approach will provide a basis for understanding how coastal hazards and impacts change during and beyond the Project's design life. Given the uncertainty in sea level rise projections, the precise value selected for the project design life is not as important as selecting a range of values that can help identify impact thresholds to the Project and coastal resources. The sea level rise scenarios are listed below and shown in Figure 7.

1. Sea level rise of 1.6 feet (~50 cm) represents the upper end of the likely range of SLR projections in 2070, and the lower end of the likely range of projections in 2100.
2. Sea level rise of 3.3 feet (~100 cm) represents the medium-high risk aversion projection in 2070 and the low-risk aversion projection for 2100.
3. Sea level rise of 4.9 feet (~150 cm) represents a worst-case, H++ SLR scenario for 2070.
4. Sea level rise of 6.6 feet (~200 cm) represents the medium high risk-aversion projection for 2100.

3. Coastal Hazards

Coastal hazards influenced by sea level rise such as extreme wave events, extreme tides, fluvial storm events, and tsunamis are discussed in this section. The hazard information is compiled from several reference documents, and no additional numerical modeling was performed as part of this study. The resources used and assumptions made for each hazard type are described in each section along with maps illustrating the proximity of each hazard to the Project site. The hazard maps are presented solely on the assumptions accompanying the referenced information utilized at the time of the Study. A diagram of the sea level rise hazards for the project location are shown in Figure 8.

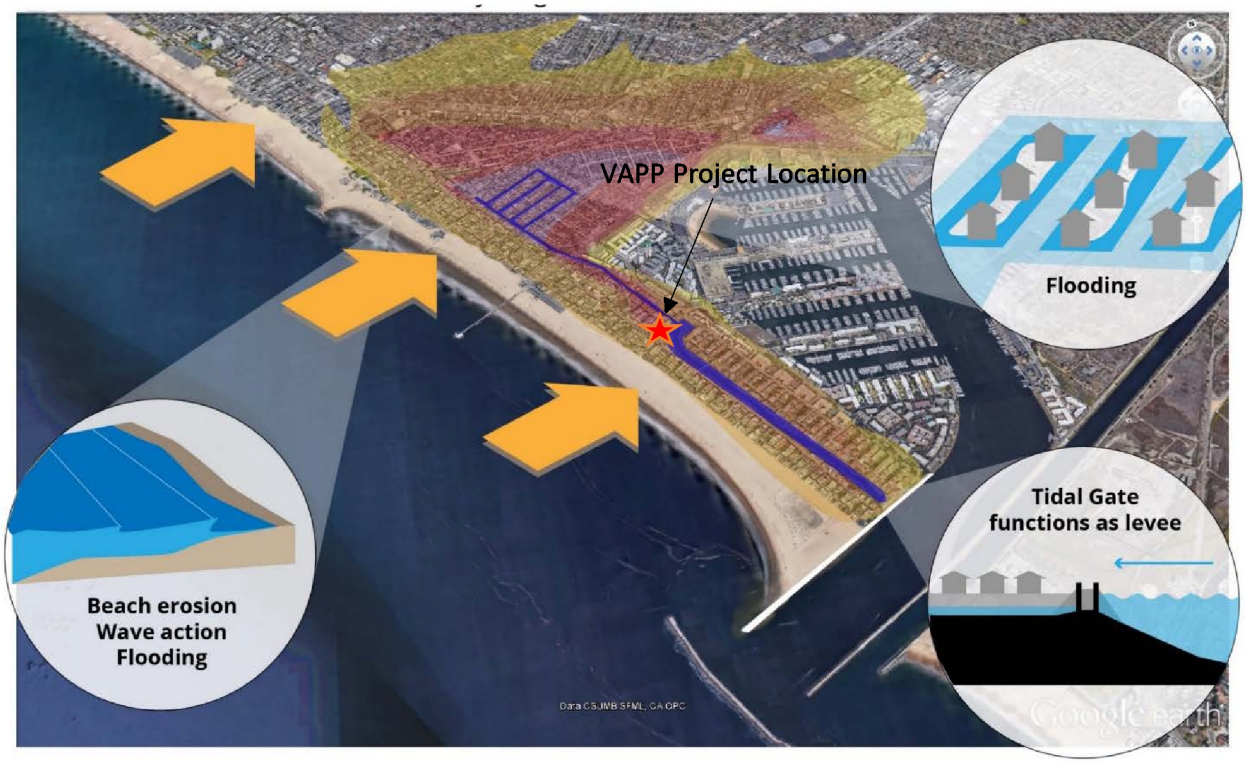

Figure 8:Venice Sea Level Rise Hazards Diagram

3.1 Non-Storm Tidal Flooding

The nearest, long-term sea level record in the study area is the Santa Monica tidal station operated by the National Oceanic and Atmospheric Administration (NOAA). The buoy has been operational for over 85 years. Elevations listed in this report are referenced to the North American Vertical Datum of 1988 (NAVD) unless otherwise noted. The tides in Los Angeles are mixed semidiurnal, with two high tides and two low tides of differing magnitude occurring each day. Typical daily tides range from mean lower low water (MLLW) to mean higher high water (MHHW), a tidal range of about 5.5 feet.

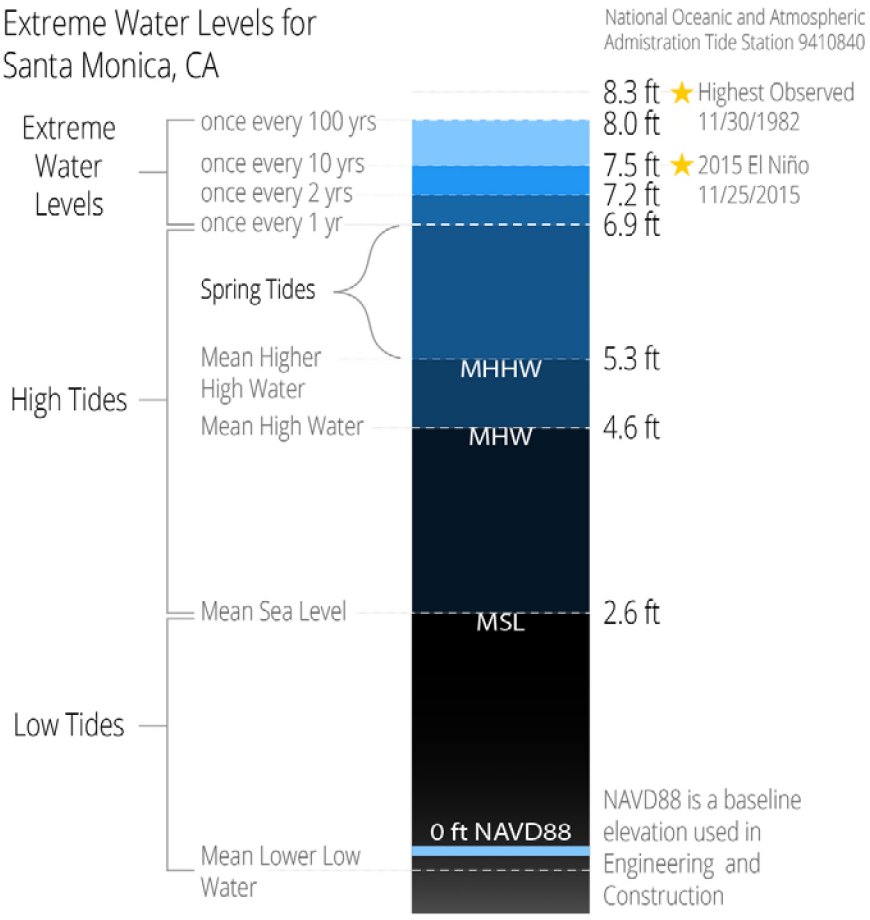

Figure 9: Santa Monica gage tide ranges and extreme water levels.

Astronomical tides make up the most significant amount of the total water level. During spring tides, which occur twice per lunar month, the tide range increases due to the additive gravitational forces of the sun and moon on the same side of the planet. The largest spring tides of the year, often referred to as "king tides", result in peak high tides that can reach almost 7 feet above NAVD 88 as shown in Figure 9. During neap tides, which also occur twice per lunar month, the gravitational forces of the sun and moon partially offset one another, resulting in a smaller tide range.

To evaluate the potential for tidal flooding hazards in the community wide *Sea Level Rise Vulnerability Assessment* (Moffatt & Nichol, 2018), an extreme monthly high tide water level of 6.5 feet NAVD88 was combined with each sea level rise scenario and mapped using the existing site topography. Tidal flood hazards were also evaluated under the key assumption that the tide gate was not functioning and allowed water levels in the canals and Ballona Lagoon to rise along with ocean water levels. A map illustrating the potential widespread flooding under these assumptions is provided in Figure 10. Given the simplistic "bathtub" method applied, the hazards are solely a function of existing topography. Low-lying areas in the vicinity of the Venice Canals would experience flooding at greater depths and duration than higher elevations such as the proposed project site.

The non-storm flooding potential demonstrates that the Marina del Rey tide gates are critical flood prevention infrastructure for the project site and the community of Venice. The tide gates were rehabilitated in 2007 by the County of Los Angeles before ownership was transferred to the City of Los Angeles. The LA Sanitation and Environment personnel, which operate the VPP, have been responsible for operating and maintaining the tide gates such that they continue to provide reliable flood protection today and into the future. The Via Marina road elevations above the gates are high enough (approx. 16 feet NAVD88) that even 6.6 feet of SLR in combination with a 100-year water level would not overtop this barrier (Figure 5). The Marina del Rey tide gates and earthen levee provide a significant amount of adaptive capacity to mitigate tidal flooding in combination with SLR.

The primary vulnerability to the marina gates is the effect of higher water levels on its functionality for increasing SLR scenarios. As sea levels rise, the duration the tide gates will need to remain closed will increase. For example, after +1.6 feet SLR, water levels in the marina will rarely be lower than the present minimum water level kept in the Ballona Lagoon. This type of SLR scenario may require adaptive management of the gate operations, especially during wet weather operations, to manage the increasing ocean water levels while still providing sufficient storage in advance of a significant rainfall event.



Figure 10: Potential non-storm flooding hazards assuming Marina del Rey tide gates are not functioning.

3.2 Coastal Storms

The Project site is located about 1,200 feet inland of the active shoreline, behind Venice Beach and several blocks of developed properties and streets. The wide beach provides an effective buffer against erosion and flooding during coastal storm events. However, a widely acknowledged impact of sea level rise is a landward and upward shift in the beach profile and shoreline position. This long-term shoreline change combined with sea level rise and an extreme wave event will result in the coastal storm hazard area moving further landward.

Coastal storm hazard projections from published by the USGS as part of the Coastal Storm Modeling System (CoSMoS 3.0) were used to evaluate how these hazards may affect the Project site. CoSMoS is a multi-agency effort led by the USGS to make detailed predictions of coastal flooding and erosion based on existing and future climate scenarios for Southern California. The modeling system incorporates state-of-the-art physical process models to enable detailed prediction of currents, wave height, wave runup, and total water levels (Barnard, P.L. et al, 2009). The storm-related water levels are then projected onto a digital elevation model to estimate the extent of flooding. The coastal flooding extents represent a 100-year wave event in combination with various rates of sea level rise.

At the time of this study CoSMoS 3.0 results were available for sea level rise scenarios of 0 - 200 cm (6.6 feet) at increments of 50 cm (0.8 feet). To be consistent with sea level rise scenarios assumed for the project, described in Section 2, the coastal flooding results for 50 cm (~1.6 feet), 100 cm (~3.3 feet) and 150 cm (~4.9 feet), and 200 cm (~6.6 feet) were used. Maps showing how the coastal flood hazard changes with each sea level rise scenario are provided in Figures 15 through 19.

The maps show a limit of the 100-year storm coastal flooding for each of the sea level rise scenarios and indicate the Project site is not exposed to coastal storm flooding during a 100-year coastal storm event until the 6.6 foot sea level rise scenario. During the 6.6 foot sea level rise scenario, large areas of Venice, including the project site, would be subject to flood inundation. However, this sea level rise scenario is not expected to occur over the 50-year design life of the VAPP. Based on the OPC projections, there is a 99% chance this amount of SLR doesn't occur this century. Under a worst case SLR scenario, represented by the H++ projections, this amount of SLR would not occur until 2080.

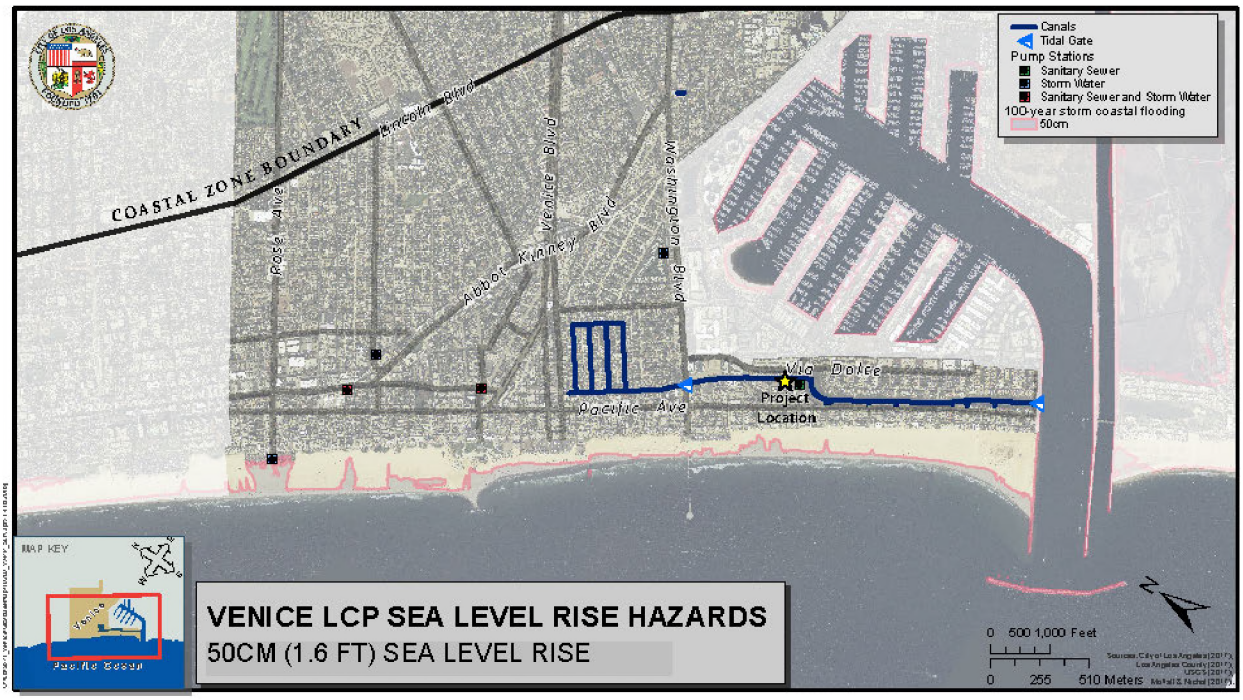

Figure 11: Sea level rise hazard associated with a 1.6 feet of sea level rise with 100-year return period storm.

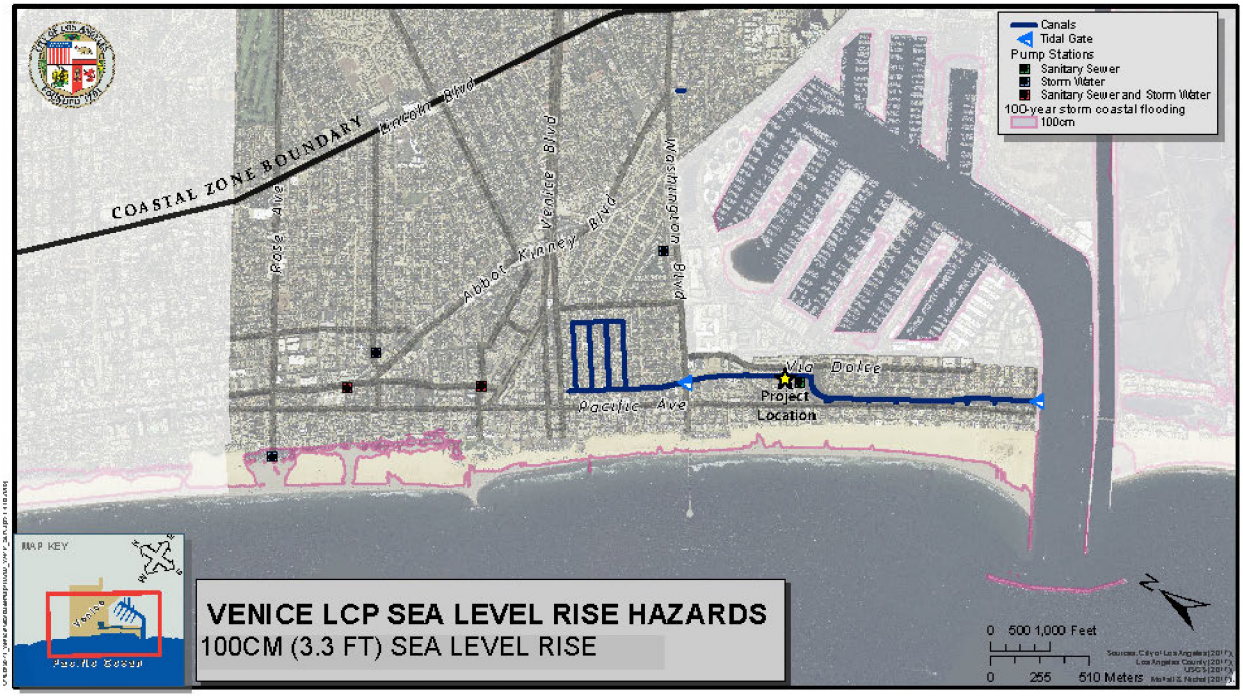

Figure 12: Sea level rise hazard associated with a 3.3 feet of sea level rise with 100-year return period storm.



Figure 13: Sea level rise hazard associated with a 4.9 feet of sea level rise with 100-year return period storm.

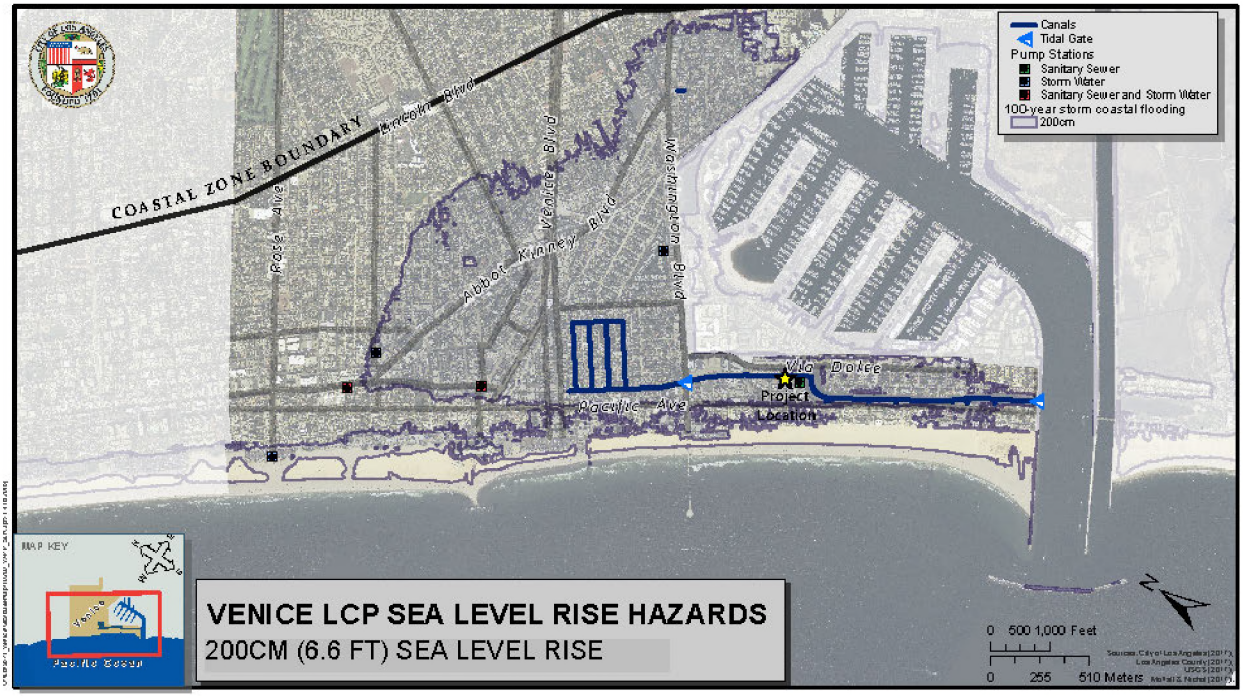

Figure 14: Sea level rise hazard associated with a 6.6 feet sea level rise with 100-year return period storm.

3.3 Fluvial Storms

The VAPP is located on the Venice Grand Canal and Ballona Lagoon, which receive surface runoff from the surrounding neighborhoods. Ballona Lagoon water level is regulated to allow daily release and flushing at pre-selected combinations of tide and lagoon water surface levels. The effective FIRM (6037C1752F) dated September 26, 2008 shows the project site as a "shaded Zone X", which is generally associated with areas which meet one or more of the following criteria:

- Areas of 0.2% annual chance flood (i.e. 500-year event)
- Areas of 1% annual chance flood (i.e. 100-year event) with average depths of less than 1 foot or drainage areas less than 1 square mile
- Areas protected by levees from the 1% annual chance flood

However, it's not clear which of the criteria were used to map the hazards shown on the effective maps, and the updated PFIRMs do not indicate any potential flooding from fluvial hazards. As shown in Figure 6, the PFIRM indicates that the site is in a Zone AE with a BFE of 8 feet since the Marina del Rey tide gate and levee system was neglected in the FEMA analysis, as these facilities are not FEMA-accredited flood control structures.

The Project site's exposure to fluvial storm hazards is considered low for present-day and sea level rise scenarios of less than 1.6 feet. The operations of the tide gate systems have been effective in providing flood protection from both coastal and fluvial storm events over the 50-year history of the VPP. This is attributed to the large available storage volume of the Grand Canal and Ballona Lagoon relative to their respective drainage areas.

The Hydrology Technical Memorandum prepared for the project in 2016 (Watearth, 2016) evaluated peak flow rates in the Grand Canal and concluded the 100-year water surface elevation remain below the canal bank elevations for pre and post project conditions. This memorandum did not evaluate how SLR will affect storage volume and water surface elevations, but it is assumed there is some capacity to accommodate SLR with the freeboard available above the extreme storm water surface elevations. As sea level rises, the probability increases that the water surface elevation in the lagoon will exceed flood stage because higher ocean water levels will require the gates to be closed more often. Additional hydrologic and hydraulic analyses are recommended as an adaptation strategy to evaluate fluvial exposure thresholds for sea level rise scenarios above 1.6 feet that account for rising groundwater levels, reduced storage volume and gate operations that account for these factors.

3.4 Tsunamis

The State of California "Venice Quadrangle - Tsunami Inundation Map for Emergency Planning" was published on March 15, 2009 through a joint effort by the State of California Office of Emergency Services (Cal OES)[1], the California Geologic Survey, the University of Southern California Tsunami Research Center,

[1] At the time these maps were released Cal OES was known as California Emergency Management Agency (Cal EMA)

and NOAA. Tsunami inundation areas were depicted in these maps relative to a mean high water (MHW) sea-level condition and represent the maximum tsunami run-up from a number of credible, extreme tsunami sources. Therefore, the maps do not represent inundation from a single event; rather, they display the maximum tsunami generated from a combination of sources to create a "credible upper bound" for each region of the coastline for use in emergency planning. The purpose of the maps is clearly stated as follows:

This tsunami inundation map was prepared to assist cities and counties in identifying their tsunami hazard. It is intended for local jurisdictional, coastal evacuation planning uses only. This map, and the information presented herein, is not a legal document and does not meet disclosure requirements for real estate transactions nor for any other regulatory purpose.

The inundation map has been compiled with best currently available scientific information. The inundation line represents the maximum considered tsunami runup from a number of extreme, yet realistic, tsunami sources. Tsunamis are rare events; due to a lack of known occurrences in the historical record, this map includes no information about the probability of any tsunami affecting any area within a specific period of time. (State of California, 2009).

Based on the Tsunami Inundation Map prepared by Cal OES, the project is located within a tsunami hazard zone (see Figure *15*).

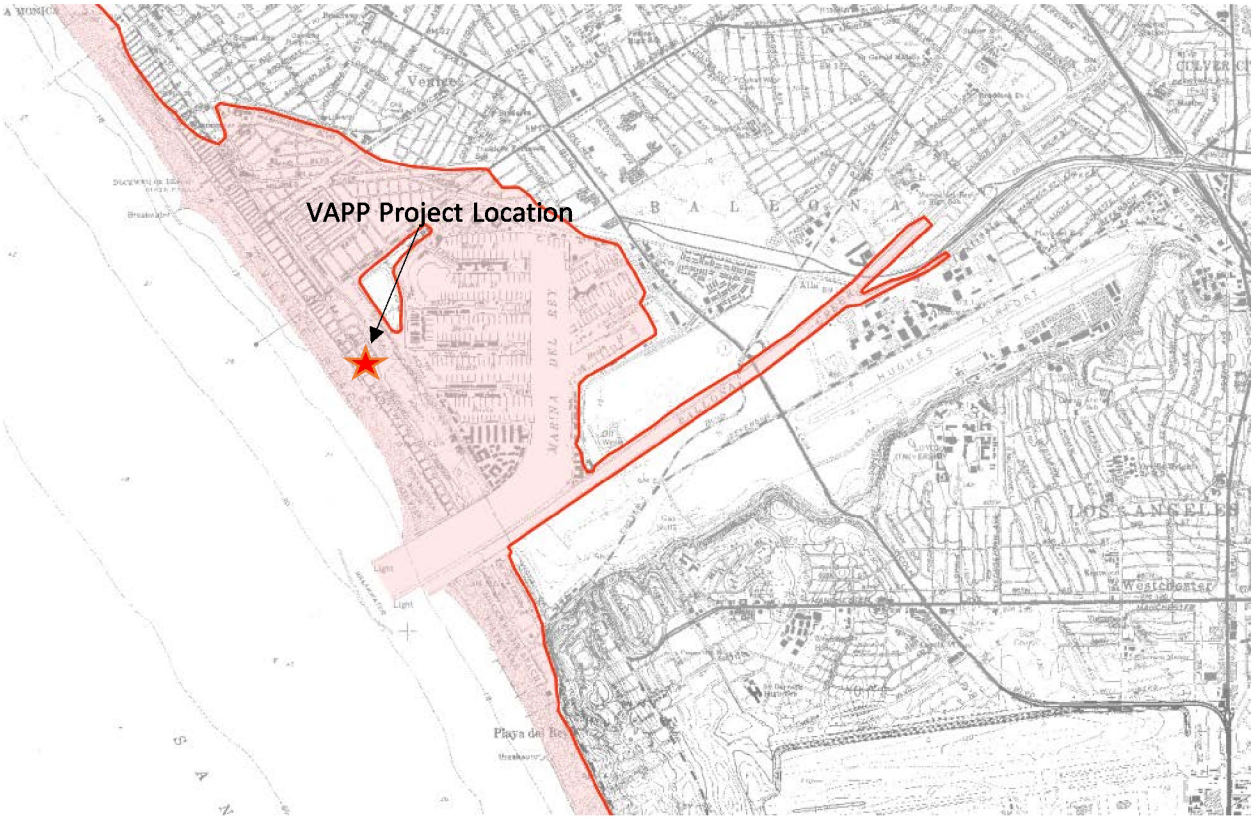

Figure 15: Tsunami Flood Hazard Map (Source: Cal-OES Venice Quadrangle)

Tsunamis are rare events. Therefore, probability of occurrence is a key factor in understanding the Project's exposure to tsunami hazards. The State of California tsunami inundation maps do not have a probability associated with them, but the lack of known occurrences in the historical record is an indication that the probability is very low, probably less likely than non-storm tidal flooding or coastal flooding events.

The project is within the "credible upper bound" tsunami inundation area depicted on the state tsunami inundation map. A tsunami event of this magnitude would result in widespread flooding of Venice, including portions of the Project site, for the present day (no sea level rise) scenario. Each increment of sea level rise would result in a corresponding increase in the tsunami flood hazard.

4. Sea Level Rise Impacts on Coastal Resources

Sea level rise impacts on coastal resources must be evaluated for development projects that require a CDP. These projects are typically in coastal zones subject to inundation, flooding, wave impacts, erosion, or saltwater intrusion, and, therefore, exposed to coastal conditions associated with sea level rise. In addition, locations close to or hydraulically connected to these at-risk locations must be considered in an analysis of how the Project may impact coastal resources within the context of sea level rise over time. The goal of the evaluation is to minimize risks to development and avoid impacts to coastal resources that may arise over the life of the Project (CCC 2015).

Coastal resources, as identified in the California Coastal Commission Sea Level Rise Policy Guidance adopted in 2015, include the following:

- **Public Access and Recreation:** Public access and recreation resources include public access ways and easements, beaches, recreation areas, public trust lands, and trails that may be impacted by sea level rise and/or due to the proposed project.
- **Coastal Habitats:** Habitats in the project area that are connected to water, including beaches, intertidal areas, and wetlands, which can be highly sensitive to changes in sea level.
- **Natural Landforms:** Existing natural landforms in the project area that may be impacted by sea level rise relative to the project.
- **Coastal Agricultural Resources**: Agricultural resources may be affected by sea level rise through changes to surface drainage and the groundwater table.
- **Water Quality and Groundwater**: Sea level rise may impact the groundwater table, substantially changing water quality, altering on-site drainage, and limiting future drainage options.
- **Scenic Resources:** Visual and scenic resources include ocean and scenic coastal views that may be impacted by the project or adaptive strategies to address sea level rise.
- **Cultural Sites and Archaeological or Paleontological Resources:** These include areas of traditional cultural significance to California Native American tribes and historical or paleontological finds as identified by California's State Historic Preservation Officer.

4.1 Public Access and Recreation

Esplanade, a public sidewalk between the existing Project site and the Grand Canal, provides public access. The proposed project would be built largely on a site that is currently vacant, but adjacent to an existing industrial site (VPP). The project is not expected to affect the influence of sea level rise on public access or recreation over the facility's design life.

4.2 Coastal Habitats

The proposed Project is located on a tidally influenced lagoon that is controlled by the Marina del Rey tide gates. Increasing sea levels may impact the health and succession of the immediate wetland habitats of

the lagoon and canals. The project itself is protected by the Marina del Rey tidegates and will not contribute to sea level rise related impacts on these resources.

4.3 Natural Landforms

The proposed VAPP will be constructed in an existing developed area in the community of Venice that is currently vacant. The Project is not expected to affect the influence of sea level rise on natural landforms over the facility's design life.

4.4 Agricultural Resources

The proposed VAPP site is not used for agriculture. The proposed Project would not significantly affect agricultural resources. The Project is not expected to affect the influence of sea level rise on agricultural resources over the facility's design life.

4.5 Water Quality and Groundwater

The proposed VAPP facility site is approximately 0.1 miles from the Pacific Ocean. Due to its proximity to the Ballona Lagoon, the groundwater is anticipated to be reached at only a few feet down at the project site. The Project is not expected to affect the influence of sea level rise on water quality and groundwater over the facility's design life. However, groundwater levels are expected to increase as sea levels rise. Higher groundwater levels may create additional buoyancy forces on underground structures, such as pipelines or pump stations. The liquefaction potential below proposed structures may also be affected by an increase in groundwater levels over the Project's design life.

4.6 Scenic Resources

The proposed Project would be built largely within the existing developed area of Venice Beach and is bordered by the VPP on the east, the Grand Canal on the north, Canal Court on the south, and residential buildings on the west. The Project site is currently vacant and unoccupied.

To minimize adverse visual effects, the proposed facility would be composed of relatively low-profile buildings similar to a commercial office building, with vegetative and architectural screening to ensure that exposed pipelines, pump station, and other industrial-type equipment are screened from public view. The Project is not expected to affect the influence of sea level rise on scenic resources over the facility's design life.

4.7 Cultural Sites and Archaeological or Paleontological Resources

The Project is not expected to affect the influence of sea level rise on cultural sites, archaeological, or paleontological resources over the facility's design life.

5. Adaptation Planning

The coastal hazards evaluated in Section 3 indicate the site has a low exposure to extreme tides, coastal storms and fluvial storms over the Project's 50-year design life (2020 to 2070). The Marina del Rey tide gates and earthen levee below Via Marina road provide effective flood protection infrastructure for the VPP and proposed VAPP. The exposure of the Project site to tsunamis is more difficult to assess, given the limited information available that links tsunami hazard zones with a probability of occurrence. Adaptation strategies have been developed to mitigate known hazards in the design of the facility and establish triggers for when future strategies should be initiated.

5.1 Marina del Rey Tide Gate Operations & Maintenance Plan

The Marina del Rey tide gates are essential in protecting the proposed project from flood inundation hazards including non-storm tidal flooding, coastal flooding, sea level rise, and tsunami. It is critical that the tide gates be maintained and operated in a manner that will decrease the risk of malfunction or failure. A recommended adaptation strategy is for the City to prepare an operations and maintenance (O&M) plan that identifies the roles and responsibilities for operations personnel and emergency response protocols to ensure the gates remain functional in storm and non-storm conditions. The O&M plan should be revaluated at intervals of about 5 years in order to reflect the most updated sea level rise projections and other potential hazards that may affect the tide gate operations.

5.2 Flood Hazard Mitigation through Structural Floodproofing

Structural floodproofing of the VAPP infrastructure could provide additional protection against extreme events such as tsunamis and would also increase adaptive capacity to tolerate future hazards driven by SLR. These strategies may include stop logs for structure openings such as doors and windows, waterproof vaults for electrical equipment, or elevating sensitive equipment above projected flood levels.

5.3 Update Sea Level Rise Analysis in 2050

The topography of the Project site and its distance from the active shoreline offer both vertical and horizontal setbacks from hazards such as extreme tides, coastal storms, and fluvial storms, assuming the Marina del Rey tide gates are closed. For sea level rise greater than 1.6 feet the sites exposure to fluvial storms becomes more uncertain. At some point we expect the combination of rising tides and groundwater levels will impact the capacity of the Grand Canal and Ballona Lagoon to store and convey storm runoff. The following adaptation strategy is recommended to reduce this uncertainty in a future update of the Sea Level Rise Analysis:

- Update the Project specific sea level rise analysis in 2050 or when local MSL has risen 1.6 feet above MSL of the 1983-2001 tidal epoch. The updated analysis should account for updated sea level rise science and regional adaptation efforts or land use changes that could affect the Project's exposure to coastal hazards.
- Evaluate the impacts of sea level rise on the Ballona Lagoon and the operation of the Marina del Rey tide gates, including the increased risk of interior flooding from the Ballona Lagoon and the

Grand Canal during storm events that coincide with high tides and increased groundwater levels. If this study indicates a risk of flooding during these extreme events, then an active pumping system may be required to prevent flooding of the project site as well as other structures and facilities near Ballona Lagoon and the Grand Canal.

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CPC-2024-2010-GPA-ZC-CU3-SPPC

Exhibit C: Environmental Clearance

C.3 – Addendum dated June, 2024

Venice Auxiliary Pumping Plant (VAAP) Project

Addendum to the Environmental Impact Report

State Clearinghouse Number: 2015111038

City of Los Angeles
Department of Public Works
Bureau of Engineering
Environmental Management Group
1149 South Broadway, Suite 600
Los Angeles, California 90015

Contact: Norman Mundy
Norman.Mundy@lacity.org

June 2024

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2 Project Location Map
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Section 1.0 Project Overview

This document is an Addendum to the Environmental Impact Report (EIR) for the Venice Auxiliary Pumping Plant Project (Project). In accordance with the State CEQA Guidelines, an Draft EIR that analyzed six build alternatives plus the No Project Alternative was prepared and distributed to public agencies and the general public by the City on October 27, 2013 for a 45-day public review period. Following public review of the Draft EIR and subsequent preparation of an administrative draft of the Final EIR and associated Findings of Fact and Mitigation Monitoring and Reporting Program. The Final EIR was completed in June 2017 and the EIR was certified and the Project was approved by the City Council in August 2017. Subsequent to the August 2017 Project approval, the City identified additional changes to the previously approved Project, which are described and evaluated in the following sections of this Addendum.

The City owns and operates the Venice Pumping Plant (VPP) (Pump Station No. 646), located at 140 Hurricane Street in the Los Angeles community of Venice, adjacent to the Ballona Lagoon and the Grand Canal. The VPP is the City's largest pumping plant and it is considered a critical facility for conveying sewage from its tributary area. The facility was designed and built in 1957 and was last upsized and upgraded in 1987. Five pumps currently serve the facility. The VPP collects sewage from the City's Coastal Interceptor Sewer (CIS), which serves the communities of Topanga, Pacific Palisades, Brentwood, Venice, and Mar Vista. It also serves the City of Santa Monica and parts of Los Angeles County. Sewage is pumped south to the City's Hyperion Treatment Plant (HTP), located in Playa del Rey. Unlike other portions of the City's sewage collection and conveyance system, there are no diversions for bypassing the facility or associated CIS for required maintenance or in the event of an emergency. Moreover, the existing VPP is essentially built out and has no additional space for required back up pumps and associated equipment to ensure system reliability.

During dry-weather flows (no rain), two pumps generally pump an average of 20 million gallons per day (mgd) of sewage. However, all five pumps have been used simultaneously to convey sewage influent from the collection area to the HTP during wet-weather flows (rain), depending on conditions. During certain years, flows during wet-weather conditions have reached 50 mgd and on several occasions, during extreme weather events (e.g., 1990s and 2000s), the flows exceeded the combined and simultaneous pumping capacity of the facility, resulting in near-miss events, which would have required emergency discharges directly to the Grand Canal and Ballona Lagoon or overflows into the surrounding street network. To address these issues, LABOE began planning and designing projects that would upgrade and enhance the CIS and VPP (see Chapter 2, Project Description of the Draft EIR), including the Proposed Project.

Construction is anticipated to begin in 2020 and last approximately 2 years.

The Proposed Project would be built on three vacant lots with a total combined area of

approximately 12,076 square feet. As shown in Figures 2-4, the Proposed Project would include a number of improvements:

- One building, two stories and approximately 32 feet in height, with a total of 2,500 square feet that will house the operational control center for the plant, related electrical equipment, and employee workstations;
- Three 18 mgd wet-pit submersible pumps, constructed underground;
- Electrical equipment, utility connections, instrumentation and controls, transformers, and generators;
- A 17- by 17-foot submerged diversion structure on the existing CIS, the top of which would be below the lowest elevation of the Grand Canal and buried underneath it;
- Concrete wet well, influent piping and a sluice gate;
- A new 66-inch sewer to connect VAPP to the new diversion structure;
- Fencing with blinds and vegetation for screening the VAPP building;
- Parking – a total of eight parking spaces will be provided at 128 Hurricane Street to allow for Project required employee, delivery/visitor, and Beach Impact Zone parking, and public parking, including the relocation of coastal parking; and
- Landscaping and Open Space at 128 Hurricane Street.

The Proposed Project includes a two-story electrical and control building along the west side of Project Site, adjacent to Canal Court (see Figure 2-4, Site Plan of the Draft EIR) and associated employee and visitor/delivery parking for the new building located at 128 Hurricane Street. The building would be two stories, about 32 feet in height, 50 feet in length, and 2,500 square feet (both levels combined) in area. The building would include spaces for an electrical equipment room and a generator room on the first floor. In addition to a state-of-the-art control station, the second floor would include workstations for computer operators, a restroom, mechanical room, and server rooms. Heating, ventilation, and air-conditioning equipment for the electrical building would be located north of the building.

The preliminary building design includes perimeter walls constructed of reinforced concrete, with a cool roofing system (PVC membrane or similar) above the second level. Proposed finishes include architectural stamped concrete, reveals, and impressions; metal awnings over each of the exterior doors and sustainable roofing (Sika Décor or similar); and painted surfaces with colors that blend in with the surrounding neighborhood. Windows would be required for occupied spaces on the second level; all windows would be energy-efficient dual-glazed units. The exterior conceptual design would be enhanced to include architectural features that are in keeping with the architecture, massing, and materials that are currently present on the adjacent residential structures.

The VAPP electrical system would include a small diesel-fueled standby generator to provide power for critical loads in the event of a loss of power from the Los Angeles Department of Water and Power (LADWP) and the inability of existing VPP standby generators to provide power to the VAPP. The standby generator would be located in an enclosed room on the first floor with 1-hour flood rated

doors; an intake and exhaust louver would provide the proper cooling for the generator. Because of the location of the electrical building within a residential neighborhood, acoustic louvers would also be installed. The VAPP generator would provide up to 24 kilowatts (kW) of power at 120/240 volts (V) for lighting, the Supervisory Control and Data Acquisition system, the security/access control system, and air conditioning for the VAPP control room. The VAPP generator would have an integral storage tank that would hold enough fuel for up to 8 hours of run time at full load.

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Section 2.0 Purpose of this Addendum to the Certified Final EIR

The purpose of this Addendum to the Certified Final EIR is to update the previously certified Venice Auxiliary Plant (VAPP) EIR regarding requests for a General Plan Amendment and a Zone Change.

CEQA Guidelines Section 15164(a) states: "The lead agency or responsible agency shall prepare an Addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred."

Section 15162 calls for the preparation of a subsequent EIR when any of the following have occurred:

- Substantial changes are proposed in the project which will require major revisions of the previous EIR;
- Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the previous EIR; or
- New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified, such as:
    - One or more significant effects was not discussed in the previous EIR;
    - Significant effects previously examined will be substantially more severe;
    - Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project; or
    - Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects.

This Addendum is being prepared because the Applicants have applied to the City of Los Angeles Department of City Planning (Planning Department) for two entitlements that were not addressed in the VAPP EIR. The two entitlements sought are:

- A **General Plan Amendment** to change the land uses at 128 E. Hurricane Street, 3813 South Esplanade and 3817 South Esplanade from *Multiple Family Residential – Low Medium II* to *Public Facility*, and
- A **Zone Change** for 128 E. Hurricane Street, 3813 South Esplanade and 3817 South Esplanade from *RW2-1* to *PF*.

The Addendum is the appropriate document for the following reasons:

- No substantial changes are proposed to the project which will require major revisions of the previously prepared and certified EIR;
- No substantial changes have occurred with respect to the circumstances under which the project is being undertaken; and
- No new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified, has been identified.

The analysis that follows identifies the new entitlements, the existing conditions in terms of land use impacts as described in the EIR, any potential impacts associated with the new entitlements, and a discussion as to why this does not constitute substantially new or different information warranting the preparation of a subsequent EIR.

Section 3.0 Previous Environmental Review

The City of Los Angeles (City) prepared a Draft Environmental Impact Report (EIR) for the Venice Auxiliary Pumping Plant (VAPP) Project and circulated that document for a 45-day public review period, beginning on October 27, 2016 and ending on December 15, 2016.

The document was made available to the public on the LABOE webpage (http://eng.lacity.org/venice_aux_pumping_plant) and at the City of Los Angeles Bureau of Engineering, Environmental Management Group and at the Lloyd Taber-Marina del Rey Library, Venice-Abbot Kinney Memorial Library, Westchester Library, and Playa Vista Public Library. Following the close of the public comment period, a Final EIR was prepared which included the complete Draft EIR, an Executive Summary, and responses to all written and oral comments received during the public review period for the Draft EIR. The City certified the Final EIR and adopted the Findings of Fact and Statement of Overriding Considerations and Mitigation Monitoring Program (MMP) on August 8, 2017 (Council file No. 17-0775). The Notice of Determination (NOD) was filed on August 9, 2017.

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Section 4.0 Project Description and Proposed Modifications

4.1 Project Purpose

The City owns and operates the VPP (Pump Station No. 646), located at 140 Hurricane Street in the Los Angeles community of Venice, adjacent to Ballona Lagoon and the Grand Canal. The plant is the City's largest pumping plant and considered a critical facility for conveying sewage from its tributary area (described above). It also serves as the control facility for all pumping stations that operate in the City. The facility, designed and built in 1957, includes a control facility and three pumps. The VPP has two levels, one above ground and one below, for equipment, emergency generators, and a control center. The facility is manned and operated 24 hours per day, 7 days per week by system operators by six employees (two per shift). Two off-street parking spaces are available for deliveries and the operator(s). The entire facility is gated and closed to the public. The VPP is also equipped with an exhaust fan that discharges vapors through an existing stack. In addition, wet wells (holding sumps for sewage) and associated pumps are located underground, within a sealed and enclosed facility, to minimize odor discharges. The facility was last upsized and upgraded in 1987. At that time, two new pumps were installed. The existing VPP is essentially built out and has no additional space for required backup pumps and associated equipment necessary to convey sewage flowing during peak wet-weather events, including the emergency generators that would be needed to run the pumps in the event of a power failure.

As noted above, the VPP pumps sewage from the City's CIS collection area to the HTP. There are currently no sewage diversions for bypassing the pumping plant. Therefore, unlike other portions of the City's sewage conveyance system where diversions are in place to minimize demand and reliance upon pumping plants, the CIS currently has no redundant or parallel facilities that can be used to redirect flows from these communities.

Flows enter the VPP from a single 66-inch reinforced concrete sewer pipe depressed approximately 18 feet below ground within the Grand Canal that discharges into two existing wet wells. Wet well No. 1 serves Pumps 1 through 4, and wet well No. 2 serves Pump 5. Each of the five 400-horsepower dry-pit centrifugal pumps has a design capacity of 18 million gallons per day (mgd) at 100 feet total dynamic head (TDH) (total amount of pressure when sewage is flowing in the system). The pumps are served by a new 60-inch manifold that connects to a 48-inch force main. From the VPP, flows are pumped south, under the Marina del Rey channel, and then to the HTP, which is located just south of LAX in Playa del Rey. Because of the 60-foot elevational difference between Venice (low point) and Playa del Rey (high point), the VPP must continuously pump the flows in order to avoid sewage backups.

During dry-weather flows (no rain), two pumps generally pump an average of 20 mgd of sewage. During wet-weather flows (rain), depending on conditions, all five pumps may be needed simultaneously to convey sewage influent from the collection area to the HTP. This is because the system is not closed and can be affected by infiltration (i.e., from storm drains and groundwater). During certain years, flows during wet-weather conditions have reached 50 mgd. When operating simultaneously, the five pumps

each are capable of pumping 12,500 gallons per minute.

Due to their continuous use, the pumps require regular maintenance and therefore need to be taken off-line to be serviced and repaired. The pumps have had several maintenance issues in the past. At times, two pumps have been out of service for extended periods during wet-weather flows. To provide the required capacity at the pumping plant during such events, the City rents portable pumps to supplement the existing pumps. However, pumps that are capable of handling solids are uncommon in the required sizes and difficult to rent. Therefore, the City incurs significant costs when additional pumps are needed. Furthermore, the portable aboveground pumps result in noise and odor impacts on the surrounding neighborhood when temporarily in operation. To provide for redundancy and ensure adequate pumping capacity when the pumps are temporarily out of service, the City needs a total of eight (i.e., three additional) pumps.

There have been several occasions, beginning in the 1990s and extending through the early 2000s, when influent flows to the VPP during periods of wet weather nearly exceeded the combined pumping capacity (90 mgd) of all five pumps while working simultaneously. This resulted in a near miss of sewage spill into the Grand Canal and Ballona Lagoon because the wet wells and pumps were almost entirely inundated by sewage. Exceeded sewer capacity would have required emergency discharges directly to the Grand Canal and Ballona Lagoon or overflows into the surrounding street network. Because of these conditions, the City of LABOE, began planning and designing projects that would upgrade and enhance the CIS and VPP. These projects include the VPP Manifold Replacement Project, which was completed in August 2015, the Venice Dual Force Main (VDFM) Project, construction of which will begin in late 2016, and the proposed VAPP project.

4.2 Existing Project Description

The Proposed Project would be built on three vacant lots with a total combined area of approximately 12,076 square feet. As shown in Figures 2-4, the Proposed Project would include a number of improvements:

- One building, two stories and approximately 32 feet in height, with a total of 2,500 square feet that will house the operational control center for the plant, related electrical equipment, and employee workstations;
- Three 18 mgd wet-pit submersible pumps, constructed underground;
- Electrical equipment, utility connections, instrumentation and controls, transformers, and generators;
- A 17- by 17-foot submerged diversion structure on the existing CIS, the top of which would be below the lowest elevation of the Grand Canal and buried underneath it;
- Concrete wet well, influent piping and a sluice gate;

- A new 66-inch sewer to connect VAPP to the new diversion structure;
- Fencing with blinds and vegetation for screening the VAPP building;
- Parking – a total of eight parking spaces will be provided at 128 Hurricane Street to allow for Project required employee, delivery/visitor, and Beach Impact Zone parking, and public parking, including the relocation of coastal parking;
- Landscaping and Open Space at 128 Hurricane Street;
- Construction laydown areas at:
    - Laydown Area 1: 128 Hurricane Street (primary site for construction staging and storage),
    - Laydown Area 2: vacant lot owned by LA County across the Grand Canal at Via Dolce (for material and equipment storage); and
    - Laydown Area 3: vacant lot at 9940 Jefferson Boulevard, in Culver City, for soil stockpiling.

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Figure 1
Project Vicinity Map
Venice Auxiliary Pumping Plant Project

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Figure 2
Project Location Map (with Existing and Temporary Pedestrian/Vehicular Access)
Venice Auxiliary Pumping Plant Project

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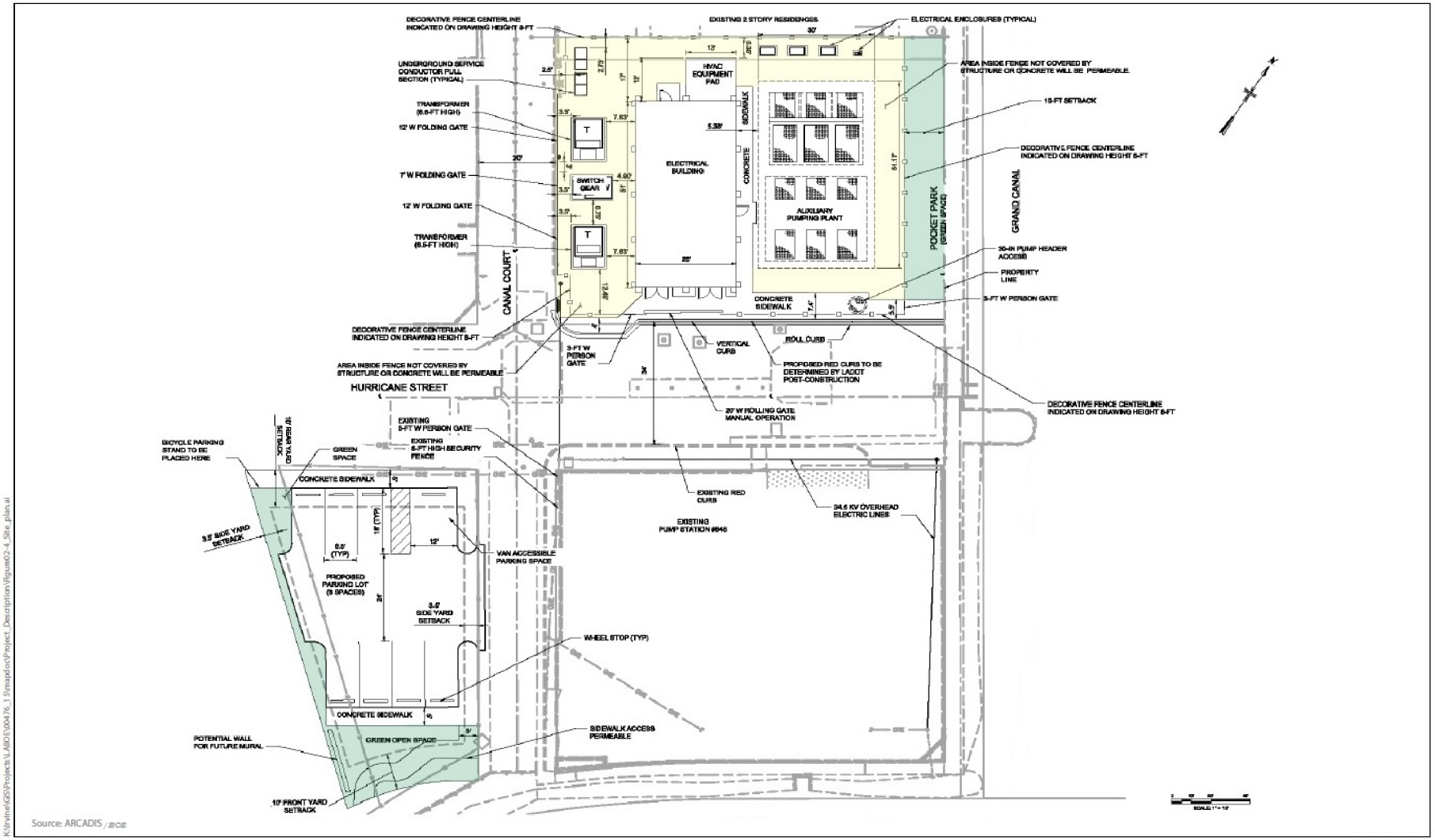

Figure 3
Site Plan
Venice Auxiliary Pumping Plant Project

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4.3 Proposed Additions and Modifications to the Project

As discussed in Section 3.8 of the VAPP EIR, it was anticipated that the VAPP project would seek a Public Benefits Project Permit pursuant to Section 14.6 of the Los Angeles Municipal Code. Instead, the Applicants have applied to the Planning Department for the following two entitlements:

- A **General Plan Amendment** to change the land uses at 128 E. Hurricane Street, 3813 South Esplanade and 3817 South Esplanade from *Multiple Family Residential – Low Medium II* to *Public Facility*, and
- A **Zone Change** for 128 E. Hurricane Street, 3813 South Esplanade and 3817 South Esplanade from *RW2-1* to *PF*.

The potential environmental impacts of these actions are analyzed in this Addendum.

Section 5.0 Impact Discussion

5.1 Introduction

The analyses provided below address each of the environmental issues analyzed in the certified EIR and focus on the potential changes in environmental impacts due to the proposed project additions and modifications outlined in Section 4.3.

5.2 Visual and Aesthetic Resources

5.2.1 Project Modifications

The proposed project additions and modifications outlined in Section 4.3 will not create any new significant environmental impacts. No new impacts related to aesthetics would occur as a result of the Project Modifications. All construction and operational impacts were found to be less than significant when the mitigation measures outlined below are implemented. As such, implementation of the proposed modifications to the project would not result in any new or substantially different visual and aesthetic resources impacts.

The following mitigation measures were adopted as part of the Final EIR to address perceived effects to visual and aesthetic resources as much as practicable:

> **MM-AES-1: Construction Staging/Stockpiled Materials and Equipment.** LABOE or its construction contractor shall be the responsible party for providing temporary construction fencing along the periphery of active construction areas to screen as much of the construction activity as possible from view at the street level.
>
> To minimize views of stockpiled materials and idle construction equipment in staging areas and reduce visual clutter and disorder, project construction staging areas shall be enclosed or screened from view at the street level with appropriate screening materials. The contractor shall provide daily visual inspections to ensure that areas immediately surrounding the construction staging areas are free from construction-related clutter and graffiti and maintained in a clean and orderly manner throughout the construction period. Graffiti shall be painted over, masked out, or cleaned off within 24 hours after notification by the project inspector.
>
> **MM-AES-2: Nighttime Construction Activities.** Should emergency construction activities occur at night, LABOE or its construction contractor shall ensure that lighting will be directed away from surrounding sensitive land uses, particularly residences, and toward the specific location intended for illumination. Lighting associated with construction activities or for security purposes shall be shielded to minimize glare and spill light around sensitive land uses in the surrounding area.
>
> **MM-AES-3: Final Design**. LABOE shall ensure that all Proposed Project structures will be designed to minimize their visual presence. Where site and design allow, the project elements shall incorporate design and location features that minimize the size of the structures and provide setbacks from adjoining street frontages, screening, and/or architectural treatments that are appropriate to the design setting where visible from the public right-of-way at street level. Where necessary, structures shall be designed and built to the satisfaction of the City Engineer/City

Architect and in compliance with all applicable design guidelines, policies, and development standards, as discussed Section 3.1.1, *Regulatory Setting*.

MM BIO-3: Restoration of Vegetation within the Grand Canal also has aesthetic benefits. See biological section for full description.

In addition, the following Best Management Practice will be implemented during construction activities:

BMP-AES-1: Resident Vouchers for Window Washing and Car Washes during Construction. LABOE or its construction contractor will implement best available control measures, as required by SCAQMD Rule 403 regarding fugitive dust, and other relevant regulations related to controlling dust from construction activities. However, to minimize any aesthetic impact construction dust may have on nearby neighboring cars and resident windows, the Public Affairs Office of the Department of Public Works shall provide vouchers to immediately adjacent residents for window washing and car washes, as appropriate.

With implementation of these mitigation measures and best practices, visual and aesthetic resources impacts will remain less than significant during construction and operation of the project.

5.3 Air Quality

5.3.1 Project Modifications

The proposed project modifications outlined in Section 4.3will not result in any new environmental impacts or change the method of construction assumed in the air quality impact analysis within the previously certified EIR.

No new significant impacts related to air quality would occur as a result of modifications to the project modificationst. All construction and operational impacts were found to be less than significant if the mitigation measure outlined below was implemented. The project changes will not result in new air quality impacts different than those identified in, and mitigated for, in the certified EIR during construction or operation. Implementation of the proposed modifications to the project would not result in any new or substantially different air quality impacts.

The following mitigation measure was adopted as part of the Final EIR to reduce impacts related to the construction activities and address the particulate matter 10 microns in diameter or less localized significance threshold.

MM AQ-1. Tier 3 construction equipment. All off-road diesel-powered construction equipment greater than 50 horsepower will meet Tier 3 emission standards. All construction equipment will be outfitted with ARB best available control technology devices. Any emissions-control device used by the contractor will achieve emissions reductions that are no less than what could be achieved by a Level 3 diesel emissions control strategy for a similarly sized engine as defined by ARB regulations. A copy of each unit's certified tier specification, best available control technology documentation,

and ARB or SCAQMD operating permit will be provided at the time of mobilization of each applicable unit of equipment.

With implementation of the approved mitigation measure, air quality impacts will remain less than significant during construction and operation of the project.

5.4 Biological Resources

5.4.1 Project Modifications

There are no new significant impacts that would result with implementation of the modifications to the Proposed Project described in Section 4.3 either during construction or operation. All impacts would be less than significant with mitigation incorporated. The acquisition of 128 Hurricane will not result in the generation of new biological impacts different than those identified in, and mitigated for, in the certified EIR during construction or operation. As such, implementation of the proposed modifications to the project would not result in any new or substantially different biological impacts. The following mitigation measures were developed to avoid or minimize the Proposed Project's potential impacts on biological resources and jurisdictional areas and are also contained in Appendix C of the EIR.

MM-BIO-1: Special-Status Plant Surveys

To confirm the presence or absence of special-status plant species within the disturbance footprint, a special-status plant survey shall be completed prior to construction. The focused survey shall be conducted by a qualified biologist during the appropriate blooming period, or when the plant is readily identifiable, prior to the start of construction activities. If any sensitive non-listed plant species is found, then the individuals shall be clearly identified and avoidance measures shall be utilized to the extent practical.

MM-BIO-2: Monitoring During Vegetation Removal

A qualified biologist shall monitor all vegetation removal and ground-disturbing activities, such as staging and grading, for the duration of the project to ensure that practicable measures are being employed to avoid incidental disturbance of habitat outside the project footprint and to survey for sensitive wildlife species. When vegetation removal and ground-disturbing activities are not occurring, as-needed monitoring at the project site shall occur. Monitoring logs, as appropriate depending on project activities, shall be maintained for the duration of construction activities.

MM-BIO-3: Restoration of Vegetation within Grand Canal

Regarding the disturbance footprint within the Grand Canal, habitat along the bank shall be restored to its original condition by seeding, cuttings and/or container plant installation following construction. Habitat restoration shall be performed in coordination with regulating agencies (CCC, USACE, and RWQCB) and as required by agency permits. A habitat restoration plan shall be prepared and submitted to EMG for review and approval, prior to submittal to the agencies. The plan will include a native plant palette, and establishment period, as well as success criteria and monitoring requirements. In addition, a monetary contribution may be provided to the Grand Canal Restoration Project fund for wider restoration of the canal banks.

MM-BIO-4: Covered Disposal Containers

Work crews shall properly dispose of all garbage in covered containers to avoid attracting predators (such as crows and ravens) that could contribute indirectly to depredation of California least tern eggs and chicks in the nearby nesting colony.

MM-BIO-5: Water Quality Monitoring During Construction

Water quality shall be monitored by the qualified biologist or a water quality specialist to ensure that no substantial increases in turbidity occur during construction, and that no erosion occurs on the west bank during in-water construction activities. The contractor shall ensure compliance with RWQCB Section 401 Water Quality Certification, USACE Section 404 authorization, applicable water-quality related Best Management Practices, and the project Storm Water Pollution Prevention Plan.

MM-BIO-6: Nesting Bird Survey

If construction commences during the bird breeding season (February 15 through August 31), a preconstruction survey for nesting birds shall occur within three days prior to construction activities by an experienced avian biologist. The survey shall occur within all suitable nesting habitat within the project impact area and a 500-foot buffer. If nesting birds are found, an avoidance area shall be established in consultation with the resource agencies as appropriate by a qualified biologist around the nest until a qualified avian biologist has determined that young have fledged or nesting activities have ceased. The project site shall be re-surveyed if there is a lapse in construction activities for more than seven days during the bird breeding season.

MM-BIO-7: Silt Fencing at Construction Limits

Construction limits shall be identified using silt fencing, which shall be installed under the supervision of a qualified biologist prior to the commencement of work. Construction personnel shall strictly limit their activities, vehicles, equipment, and construction materials to the project footprint, including designated staging areas, and routes of travel. The construction areas shall consist of the minimal area necessary to complete the proposed project. The fencing shall remain in place until the completion of all construction activities.

MM-BIO-8: ESHA Protection

Existing functions and values in ESHA shall be protected, enhanced, and restored as necessary to previous undisturbed conditions in accordance with applicable USACE, RWQCB, CCC, or City of Los Angeles permits and requirements.

MM-BIO-9: Restoration of Mudflats within Grand Canal

The temporary work area in the Grand Canal within mudflat/open water shall be returned to pre-construction grade and contours following construction.

With implementation of the approved mitigation measures, biological impacts will remain less than significant during construction and operation of the project.

5.5 Circulation, Traffic and Transportation

5.5.1 Project Modifications

The proposed project additions and modifications outlined in Section 4.3 will not result in any new significant environmental impacts. As such, implementation of the proposed modifications to the project would not result in any new or substantially different traffic impacts.

Mitigation consists of the following measures to reduce the temporary adverse impacts associated with construction-period activity in the vicinity of the construction site. The implementation of the following mitigation measures would ensure that traffic/transportation impacts would be less than significant.

MM- TRANS-1: Construction Worker Shuttles

Construction workers would park at an off-site location and be shuttled to and from the Project Site each workday on 10 to 15-passenger shuttles or vans. While no specific off-site location has been identified at this time, it would likely lie within five miles of the Project Site. The selected contractor would be required to identify and secure a suitable location

MM-TRANS-2. Coordination with Emergency Service Providers

To minimize impacts on emergency access to the site during construction, the contractor, on behalf of the LABOE, shall coordinate with emergency service providers (police, fire, ambulance and paramedic services), prior to initiating construction, to provide advance notice of any lane closures, construction hours, and changes to local access and to identify alternative routes where appropriate.

With implementation of the existing mitigation and additional construction-related traffic permit conditions, traffic impacts will remain less than significant during construction and operation of the project.

5.6 Cultural/Paleontological Resources

5.6.1 Project Modifications

The proposed project modifications outlined in Section 4.3 will not result in any new significant environmental impacts related to cultural resources or paleontological resources. The Project would result in no operational impacts on archaeological resources. Based on the setting and the level of previous disturbance, the potential for construction activities to disturb, damage, or degrade an archaeological resource or its setting is low. Additionally, if archaeological resources are encountered, Mitigation Measure MM-CUL-1 would reduce potential project-related construction impacts to less than significant. The incremental effects of the Project, after mitigation, would not contribute to a significant adverse cumulative impact on archaeological resources.

The Proposed Project would have no impacts on Tribal Cultural Resources, because no such resources are present within the project footprint, based on information received to date. Therefore, the project would

not contribute to a significant adverse impact on Tribal Cultural Resources.

The following mitigation measure was developed to avoid or minimize the Proposed Project's potential impacts on cultural resources.

MM-CUL-1: Unanticipated Archaeological and/or Tribal Cultural Resource Discoveries

In the unlikely event that any prehistoric artifact of historic period materials or bone, shell, or nonnative stone is encountered during construction, work shall be immediately stopped, the area secured, and work relocated to another area until the found materials can be assessed by a qualified archaeologist. Examples of such cultural materials might include historical trash pits containing bottles and/or ceramics; or structural remains or concentrations of grinding stone tools such as mortars, bowls, pestles, and manos; chipped stone tools such as projectile points or choppers; and flakes of stone not consistent with the immediate geology such as obsidian or fused shale. If the Archeologist determines that an artifact may qualify as a tribal cultural resource, a Native American monitor shall be consulted. The contractor shall stop construction within 30 feet of the exposure of these finds until a qualified archaeologist can be retained to evaluate the find (see 36 CFR 800.11.1, 14 CCR 15064.5(f) and PRC § 21084.3(b)). If the resources are found to be significant, they shall be avoided or impacts shall be mitigated consistent with Section 106, State Historic Preservation Officer Guidelines, and/or Assembly Bill 52.

5.7 Geology, Soils and Seismicity

5.7.1 Project Modifications

The proposed project additions and modifications outlined in Section 4.3 will not result in any new significant environmental impacts.. As such, implementation of the proposed modifications to the project would not result in any new or substantially different geology, soils and seismicity impacts. With implementation of the mitigation measure identified below, no new significant impacts related to geology and soils would occur as a result of the proposed modifications to the Project. The following mitigation measure was approved as part of the Final EIR to avoid or minimize potential impacts from the Project related to geology and soils. It should be noted that there are also specific recommendations contained in the *Geotechnical Engineering Report – Venice Auxiliary Pumping Plant*, December 14, 2015 (see Appendix G of this EIR) and *Phase I Environmental Site Assessment (128 Hurricane Street)*, May 2016 (see Appendix K of this EIR). Mitigation Measure MM-GEO-1 noted below has been abbreviated. The complete text is provided in Appendix G of the EIR.

MM-GEO-1: Liquefaction Considerations

Given the data presented in Section 3 of the *Geotechnical Engineering Report – Venice Auxiliary Pumping Plant*, December 14, 2015, and the results of the liquefaction calculations, potential liquefaction induced settlements on the order of 1.75 inches are estimated for the site. A potential liquefaction induced differential settlement of 1 inch is estimated between the proposed structures

and the pipe header. These potential liquefaction induced settlements shall be considered and accounted for in the design of the Proposed Project.

Mat foundations are recommended for support of the project structures, with the understanding that the foundation would be susceptible to liquefaction-induced settlements. Mat foundations for the wetwell/valve structure and diversion structures shall be founded on jet-grouted columns constructed within the natural soils. The mat foundation for the electrical building shall be founded on compacted fill soil. Mat foundations shall be designed and constructed to bear at a depth of at least 24 inches below the lowest adjacent grade. Mat foundations can be designed for an allowable bearing capacity of 1,500 pounds per square foot (psf). A coefficient of vertical subgrade reaction, for a 1-foot-square loaded area, of 100 kips per cubic foot (kcf) may be used for design of the mats.

Total static settlement of the proposed foundations, designed and constructed in accordance with the recommendations presented herein, shall not exceed 1 inch. Differential static settlement shall not exceed one-half of the total settlement.

Resistance to lateral loads can be provided by friction at the base of the foundation and passive earth pressure. A coefficient of friction of 0.35 may be assumed with dead-load forces. An allowable passive lateral earth pressure of 250 psf per foot of depth up to a maximum of 2,500 psf may be used for sides of the foundation poured against undisturbed natural soil or properly compacted fill. The allowable passive pressure may be increased by 33% of lateral loading due to wind or seismic forces.

With implementation of the approved mitigation, geology, soils and seismicity impacts will remain less than significant during construction and operation of the project. Additionally, as the certified EIR did not contain a chapter of analysis on hazardous waste and materials, the were two mitigation measures included in the Geology/Soils section that pertain to Hazardous Waste and Materials. These mitigation measures are discussed below in Section 5.9

5.8 Greenhouse Gas Emissions

5.8.1 Project Modifications

The proposed project additions and modifications outlined in Section 4.3 will not create any new significant environmental impacts related to greenhouse gas emissions. GHG emissions for the project were found to be less than significant, well below the threshold. No significant air quality impacts would result from project implementation related to GHGs and implementation of the proposed modifications to the project would not result in any new or substantially different greenhouse gas impacts. Impacts remain less than significant and no mitigation is required.

5.9 Hazardous Waste and Materials

5.9.1 Project Modifications

The certified EIR did not contain a chapter with analysis of hazardous waste and materials, as it was initially screened out during the scoping process. However, two mitigation measures related to hazardous waste and materials were included in the Geology and Soils chapter:

MM-HAZ-1a: Soil and Soil Vapor Subsurface Investigation.

Prior to construction, a soil and soil vapor subsurface investigation shall be conducted by a qualified environmental consultant specializing in the identification and handling of hazardous materials. The subsurface investigation may include, but would not be limited to:

- A scope of work consisting of Pre-Field Activities, such as preparation of a Health and Safety Plan (HASP), determining and marking sampling/boring locations and obtaining utility clearance, and Field Activities, such as identifying appropriate sampling procedures, health and safety measures, chemical testing methods, and quality assurance/quality control (QA/QC) procedures in accordance with the ASTM Standard.
- Necessary permits for boring advancement.
- A Sampling and Analysis Plan (SAP) in accordance with the scope of work.
- Laboratory analyses conducted by a State-certified laboratory.
- Disposal process including transport by a State-certified hazardous material hauler to a State-certified disposal or recycling facility licensed to accept and treat hazardous waste.

MM-HAZ-1b: Confirmation of Oil Well Abandonment.

Prior to construction, the applicant shall obtain confirmation via DOGGR of the proper abandonment of oil well 'McDonald 2'. If re-abandonment of McDonald 2 was not performed to current DOGGR requirements, the applicant shall seek the assistance of a qualified environmental consultant to abandon the oil well to current standards.

MM-HAZ-2: Methane Encroachment.

If the analytical results of the subsurface investigation under Mitigation Measure HAZ-1a determine that methane encroachment has the potential to affect VAPP operational activities, the environmental consultant shall provide recommendations during construction of the proposed project to mitigate long term potential impacts.

To comply with MM-HAZ-1a, the City of Los Angeles retained AECOM to perform a Phase II Environmental Site Assessment at 128 Hurricane Street

With implementation of the approved mitigation during implementation of the proposed project modifications outlined in Section 4.3, hazardous waste and materials impacts will remain less than significant during construction and operation of the project.

5.10 Hydrology, Water Quality/Stormwater Runoff

As discussed in Section 4.7 of the Draft EIR prepared for the project, the project will be completed in compliance with the NPDES Municipal Separate Storm Sewer System (MS4) Permit and meet the necessary sanitary sewer service standards. The installment of the VAPP will allow the City to alternate waste water flow between the existing force main and the new dual force main which is currently under construction. Without the installment of the new pumping plant, the current sewer service standards

will continue to deteriorate and run a high risk of overflowing the system, cause a potential break in the system, and cause a potential health risk to the local waterways.

5.10.1 Project Modifications

The proposed project modifications outlined in Section 4.3 will not result in any the new significant impacts related to hydrology and water quality. As such, implementation of the proposed modifications to the project would not result in any new or substantially different hydrology and water quality/stormwater runoff impacts. There were no impacts to hydrology and water quality requiring mitigation for implementation of the project. Project construction activities would not generate unavoidable adverse impacts to hydrology or water quality. As such, no mitigation measures regarding Project construction impacts to hydrology or water quality were required in the EIR. Operation of the Proposed Project would contribute to inundation by tsunami or sea level rise, if a power failure resulted, and impacts to water quality would be significant. No feasible mitigation has been identified.

5.11 Land Use Plans

5.11.1 Project Modifications

The proposed project additions and modifications outlined in Section 4.3 will not result in any the new significant impacts related to land use. The parcels currently zoned as RW2-1 would be rezoned as PF-1 and the land uses for the parcels would be changed from Multiple Family Residential – Low Medium II to Public Facility. These changes would facilitate the construction of the project as described in the VAPP EIR.

There are no mitigation measures required for the Project directly related to land use and planning. Secondary impacts to surrounding land uses that could result from construction of the Proposed Project are addressed with mitigation measures MM AES-1, MM AES-2, MM BIO-1 through MM BIO-9, MM CUL-1, MM NOI-1, MM NOI-2, and MM TRAF-1. Secondary impacts to land uses that could result from Proposed Project operations are addressed with mitigation measures MM AES-3, MM GEO-1, and MM NOI-3. As such, implementation of the proposed modifications to the will not result in any new or substantially different land use impacts.

5.12 Noise and Vibration

5.12.1 Acquisition of a private parcel at 128 Hurricane Street

Noise and vibration impacts for the project were found to be significant and unavoidable. The proposed project modifications outlined in Section 4.3 will not result in any new significant impacts related to noise and vibration in addition to the impact analysis within the previously certified EIR. As such, implementation of the proposed modifications to the project will not result in any new or substantially different noise and vibration impacts.

While MM NOI-1 would reduce construction noise levels to the extent feasible, it would not eliminate the

predicted noise impacts entirely; therefore, construction noise impacts are considered significant and unavoidable.

While MM NOI-2 would substantially reduce construction vibration levels and mitigate the potential impacts related to building damage, it would not eliminate all the predicted impacts related to annoyance at nearby residences; therefore, construction vibration impacts are considered significant and unavoidable.

It is noted that all significant and unavoidable impacts related to project construction would be temporary and would cease once project construction is complete.

All operational noise impacts would be less than significant after implementation of MM NOI-3.

The following mitigation measures were approved in the previously certified EIR to reduce the Project's potential impacts related to noise and vibration.

> **MM NOI-1: Prepare and Implement a Construction Noise Control Plan.** To reduce the significant construction noise impacts, the Los Angeles Bureau of Engineering (LABOE) and Contractor shall develop a noise control plan that includes the implementation of the following noise reduction measures during construction.
>
> **a) Construction Hours** - The operation of construction equipment shall occur only between 8:00 a.m. to 6:00 p.m. Monday through Saturdays. No construction activity shall occur on national holidays or at any time on Sundays. Access to the construction site may occur prior to construction hours for the purpose of set up, conducting safety meetings, etc. The use of the pile driver, grader and jackhammer construction equipment shall be limited to the hours of 9 a.m. to 3:30 p.m. However, specific work related to the VAPP connection the manifold will be exempt from these hours, along with any emergency conditions or unforeseen work that would require the use of this equipment to complete a specific task in one continuous work event. Haul trucks can only access the site through local neighborhood streets from 9 a.m. to 4 p.m. Construction personnel shall not be permitted on the Project Site (including laydown and storage areas) outside of the hours of 7:30 am to 6:00 pm. Material or equipment deliveries and collections shall not occur outside the hours of 8:00 am to 6:00 pm. In addition, no construction worker parking would be allowed along Hurricane Street or on adjacent local streets. Construction workers shall park offsite and arrive by shuttle to the construction site, as arranged by the construction contractor.
>
> **b) Piles** - All piles, including sheeting, shall be installed and extracted using vibration- and percussive-free methods.
>
> **c) Construction Mitigation Coordinator –** The City and/or its Contractor shall maintain good communication with the surrounding community regarding the schedule, duration, and progress of construction activities. Residents at properties within 500 feet of construction activities shall be

notified 72 hours in advance of the planned activities prior to the start of work. The notification shall advise that there will be loud noise associated with the construction, and shall state the date, time, and expected duration of the planned activities. The notification shall provide a telephone contact number for affected parties to ask questions or share any concerns. A construction mitigation coordinator for the Project will be required to maintain a call log, so that the City can track resolution and nature of any complaints. These complaints may range from noise, vibration, dust, traffic, etc. The call log shall contain the name and address (if available) of the person making the complaint, the date and time of the call, and any details regarding the nature of the complaint related to noise, vibration, dust, parking, traffic, etc. related to construction activities. The call log shall be provided to the Public Works Department (Public Affairs Office, LA Sanitation, LABOE) upon request. Residents shall be informed of the construction mitigation coordinator and on-site construction supervisor contact information by posting of the phone number on the construction site. Signage should be visible from Canal Court, the Esplanade, Via Dolce, and Hurricane Street.

d) Noise barriers - To the extent practicable, temporary noise barriers with a minimum height of 20 feet shall be employed around the Project Site. Openings in the barriers shall be kept to the minimum necessary for access of vehicles, equipment, and construction material. These barriers shall be constructed as follows.

- From commercially available acoustical panels lined with sound-absorbing material (the sound-absorptive faces of the panels shall face the construction equipment); or,
- From acoustical blankets hung over or from a supporting frame. The blankets shall provide a minimum sound transmission class rating of 28 and a minimum noise-reduction coefficient of 0.80 and shall be firmly secured to the framework with the sound-absorptive side of the blankets oriented toward the construction equipment. The blankets shall be overlapped by at least 6 inches at seams and taped so that no gaps exist. The largest blankets available shall be used in order to minimize the number of seams. The blankets shall be draped to the ground to eliminate any gaps at the base of the barrier.

e) For noise-generating equipment that cannot be shielded by site perimeter barriers, localized noise barriers or enclosures shall be employed wherever feasible. The height and location of these barriers/enclosures shall be designed to block the line of sight between the equipment and the surrounding homes.

f) Noise Monitoring Plan - LABOE/Contractor shall retain the services of an acoustical/noise consultant to prepare a Noise Monitoring Plan. The plan shall be site-specific for monitoring and reporting construction noise levels in the community to evaluate the Contractor's performance. Based on details of the Contractor's specific construction schedule, the plan shall develop construction noise goals, in terms of 1-hour Leq, that should be achieved for each phase of construction with the inclusion of feasible and practicable noise abatement measures. If noise monitoring indicates the applicable noise goals have been exceeded, steps shall be taken to promptly implement any additional effective abatement measures that are feasible and/or practicable.

g) Quiet construction equipment - To the fullest extent practicable, the quietest available type of construction equipment shall be used. Newer equipment is generally quieter than older equipment. The use of electric-powered equipment is typically quieter than diesel- or gasoline-powered equipment, and hydraulic-powered equipment is typically quieter than pneumatic-powered equipment.

h) Construction equipment noise compliance - All construction equipment used on the proposed Project that is regulated for noise output by a local, state, or federal agency shall comply with such regulation while in the course of Project activity and use on site.

i) Proper maintenance - All construction equipment shall be properly maintained, as poor maintenance of equipment may cause excessive noise levels.

j) Equipment mufflers, shrouds and shields - All construction equipment shall be equipped with properly operating and maintained mufflers, air-inlet silencers where appropriate, and any other shrouds, shields, or other noise-reducing features that meet or exceed original factory specifications.

k) No idling - All construction equipment shall be operated only when necessary, and shall be switched off when not in use. Idling inactive construction equipment for prolonged periods (i.e., more than 2 minutes) shall not be permitted.

l) Minimum use of audible safety warnings - The use of noise-producing signals, including horns, whistles, alarms, and bells, shall be for safety warning purposes only.

m) No Project-related public address or music system shall be audible at any adjacent residential receptor.

n) Construction work training - Construction employees shall be trained in the proper operation and use of the equipment. Careless or improper operation or inappropriate use of equipment can increase noise levels. Poor loading, unloading, excavation, and hauling techniques are examples of how a lack of adequate guidance and training may lead to increased noise levels.

o) Generator and compressor placement - Stationary noise sources such as generators and compressors shall be positioned as far as possible from noise sensitive areas.

p) Construction equipment storage – Construction equipment shall be stored on the Project Site or designated laydown areas while in use, to the extent feasible. This will eliminate noise associated with repeated transportation of the equipment to and from the site.

MM-NOI-2: Implement ground-borne vibration control measures to reduce construction-generated vibration. To reduce the significant construction vibration impacts, LABOE/Contractor shall implement the following vibration reduction measures during project construction:

- All piles, including sheeting, shall be installed and extracted using vibration- and percussive-free methods.
- LABOE and/or Contractor shall retain a qualified structural or geotechnical engineer to conduct pre-construction surveys of adjacent neighboring structures (including photographing and/or videotaping) to document existing building conditions for future comparison if any vibration-related damage is suspected or results from construction-related activities.
- If considered appropriate by the structural/geotechnical engineer, monitoring shall be conducted during construction to check for vibration-related damage from equipment during its use. Such monitoring may include vibration measurements obtained inside or outside of the buildings, or other tests and observations deemed necessary.

MM-NOI-3: Design project facilities to reduce noise from all mechanical and electrical equipment to levels that comply with applicable regulations. To reduce the significant operational noise impacts to less than significant, noise control features shall be included during the final architectural and engineering design phase of the project, to reduce overall operational noise levels from all project-related sources to within 5 dB CNEL of existing ambient noise levels in the surrounding community (53 to 57 dB CNEL, as described in Table 3.9-6), and to comply with Chapter XI of the City of Los Angeles Municipal Code (i.e., restrict noise level increases, relative to the existing 1-hour L_{eq}, to 5 dBA or less). The City shall retain an acoustical/noise consultant to evaluate the design and provide recommendations for specific noise-control features, as necessary, feasible, and practicable, based on the final equipment selections and specifications for the project. Such noise control features may include, but are not limited to, the following.

- Selecting equipment with lower sound power levels.
- Adjusting the location of equipment items within the Project Site to increase the distance from the closest sensitive receptors and/or increase acoustical shielding provided by intervening structures, where practicable and feasible.
- Shielding noise-generating equipment with screens, acoustical panels, enclosures, or block walls.
- Using sound-rated doors, windows, and access hatches at the electrical building and subterranean vault.
- Adding sound-absorptive materials to interior spaces to reduce buildup of reverberant noise levels.
- Designing ventilation systems with acoustical louvers, intake and exhaust silencers, and other features to control exterior noise propagation from interior sources.

In addition, the following Best Management Practices will be implemented:

BMP-NOI-1: Offsite work space: The City shall work with the construction contractor to identify potential offsite shared office space that could be made available to residents in the immediate vicinity that work at home during weekday construction hours. The space would

ideally have internet service and meeting room space.

5.13 Energy

5.13.1 Acquisition of a private parcel at 128 Hurricane Street

It is anticipated that total annual electricity consumption for the project during operations is approximately 630,000 kWh. The proposed project modifications outlined in Section 4.3will not create any new significant impacts related to energy resources, consistent with the impact analysis within the previously certified EIR. During the construction period, equipment and vehicles would be primarily powered by diesel fuel and would likely require minimal electricity. Table 3.11-1 shows the construction-period fuel use and equivalents in MMBTU, which would be 9,500 MMBTU over the entire period, or approximately 300 MMBTU when amortized over the anticipated 30-year life of the project.[1] Construction-period energy use includes energy that would be used in worker commute trips as well as haul trips and equipment use, which would result in the consumption of an estimated 66,000 gallons of fuel.

Although fuel would be consumed by construction vehicles and equipment, the fuel consumption would be temporary in nature and would represent a negligible increase in regional demand, and an insignificant amount relative to the more than 18 billion gallons of on-road fuels used in the state in 2013, an increase of approximately 0.000004 percent (California Energy Commission 2014). Given the extensive network of fueling stations throughout the project vicinity and the fact that the 2-year construction period would be short-term, no new or expanded sources of energy or infrastructure would be required to meet the energy demand associated with project construction. As such, construction impacts related to the extent to which the project would require new (off-site) energy supply facilities and distribution infrastructure, or capacity enhancing alterations to existing facilities would be **less than significant**, and no mitigation measures are required.

As such, implementation of the proposed modifications to the project are also considered to be a negligible increase in diesel fuel use and would not result in any new or substantially different energy impacts. There would be no significant impacts related to energy either during construction or operation of the Project. No mitigation measures were required in the certified EIR.

[1] Consistent with the methodology for GHG emissions, construction-period energy consumption is divided over the anticipated 30-year life of the proposed Project. Although construction would occur over a 2-year period, this method is intended to apportion the upfront energy consumption over the life of the proposed Project.

Section 6.0 Conclusion

As required by State CEQA Guidelines Sections 15162 and 15164, an Addendum to a previously certified EIR shall be prepared if some changes or additions to a project are necessary and that none of the conditions warranting the preparation of a subsequent EIR are present. As demonstrated in the analysis included in Section 5.0 above, the Addendum is the appropriate document for the following reasons:

- No substantial changes are proposed to the project which will require major revisions of the previously prepared and certified EIR;
- No substantial changes have occurred with respect to the circumstances under which the project is being undertaken; and
- No new information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the previous EIR was certified as complete shows any of the following:
  - The project will have one or more significant effects not discussed in the previous EIR or negative declaration;
  - Significant effects previously examined will be substantially more severe than shown in the previous EIR;
  - Mitigation measures or alternatives previously found not to be feasible would in fact be feasible, and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measure or alternative; or
  - Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative.