

Appendix J-6

Supplemental 2023 Leighton Report

November 3, 2023

Project No. 13226.005

Meridian Park West, LLC
1156 North Mountain Avenue
Upland, California 91786

Attention: Timothy Reeves / Adam Collier

Subject: **Supplemental Environmental Assessment Information
Meridian – West Campus Upper Plateau
Riverside, California 92508**

Upon your request and in connection with the comments received on the Draft Environmental Impact Report, Leighton Consulting, Inc. (Leighton) is presenting the following supplemental summary information regarding environmental assessments associated with the subject Site and nearby areas (see Site Location Map – **Figure 1**).

1.0 RADIOLOGICAL INVESTIGATIONS (1992 - 2006)

In 1992, the Environmental Protection Agency (EPA) performed an aerial photographic analysis of March Air Force Base (AFB), including the former ordnance storage facility, also termed the Weapons Storage Area (WSA). It is reported that no burial sites within the WSA were identified. (Cabrera, 2006).

In 1998, Earth Tech, Inc. completed a Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) Final Status Survey (FSS) of the March Air Force Base Weapons Storage Area (WSA) and concluded the buildings in the WSA meet State criteria for unrestricted release for usage of the WSA buildings (Earth Tech, Inc., 2000). In a memorandum dated August 24, 2000, the California Department of Health Services (CADHS) indicated they had performed a final confirmation survey of the buildings, and concurred with Earth Tech Inc.'s conclusion that the WSA buildings meet State criteria for unrestricted radiological release (CADHS, 2000).

In a Public Health Assessment dated July 28, 2000, the United States Department of Health and Human Services, Agency for Toxic Substances and Disease Registry (ATSDR) concluded based on the results of the MARSSIM / FSS that in regards to potential radioactive contamination in the WSA, "No Public Health Hazard" and "No Recommendations" were indicated (ATSDR, 2000).

Finally, in September 2006, Cabrera Services, Inc. completed a Preliminary Assessment and Site Inspection (PA/SI) of the WSA. The stated objectives of the PA/SI were to:

- Identify subsurface anomalies that could represent potential burial or disposal locations for weapons maintenance waste materials using non-invasive techniques.
- Prioritize identified subsurface anomalies and make recommendations for additional investigations to confirm the presence of potential burial and disposal locations.
- Identify surface areas with elevated levels of residual radioactivity that could represent buried wastes (Cabrera, 2006).

The assessment entailed a subsurface geophysical and radiological investigation for the presence of potentially buried radiologically-impacted weapons maintenance waste materials. The reported types of wastes of concern were: gloves, booties, wipes, paper, and depleted uranium (DU) residue from maintenance activities, purportedly disposed of in cardboard boxes or possibly metal containers (Cabrera, 2006).

Cabrera did not identify any radiologically-impacted materials or burial pits and concluded that no further action for surface soils or subsurface investigation of burial sites in the WSA is recommended based on historical information and the results of geophysical, radiological, and subsurface investigations (Cabrera, 2006).

The California Regional Water Quality Control Board, Santa Ana Region (SARWQCB) reviewed Cabrera's PA/SI (2006) and responded as follows via a November 27, 2006 letter:

The investigation reviewed existing information and attempted to confirm any potential buried or disposal locations primarily using noninvasive techniques. Radiological surveys were also conducted to scan for surface contamination. One anomalous area was investigated utilizing test pits. No further action for subsurface investigation of burial sites was recommended, based on historical information and the results of the investigation.

We concur with your finding of no release at the site, and the recommendation for no further action for the Weapons Storage Area (SARWQCB, 2006).

Based on the conclusions of the above-discussed reports, and relevant regulatory agencies, it is Leighton's understanding there is no potential radioactive contamination in the investigated areas of the WSA that poses an unacceptable public health hazard.

Section References

ATSDR (Department of Health & Human Services, Agency for Toxic Substances and Disease Registry, Division of Health Assessment and Consultation), 2000, March Air Force Base, Riverside County California: Public Health Assessment – Public Comment, dated July 28, 2000.

Cabrera (Cabrera Services, Inc.), 2006, Final Preliminary Assessment and Site Inspection Report for the Former Weapons Storage Area, March Air Force Base, Riverside, California; prepared for U.S. Air Force Institute for Operational Health, September 2006.

CADHS (California Department of Health Services, Waste Management Section), 2000, Review of Final Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) Final Status Survey Report for the Weapons Storage Area, March AFB, dated July 12, 2000.

Earth Tech, Inc., 2000, Final Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) Final Status Survey Report for the Weapons Storage Area, March AFB, California, October 2000.

SARWQCB (California Regional Water Quality Control Board, Santa Ana Region), 2006, Comments on Final Preliminary Assessment and Site Inspection Report for the Former Weapons Storage Area; letter to Regional Environmental Coordinator, AFRPA Western Region Execution Center, dated November 27, 2006.

2.0 BIOLOGICAL AND CHEMICAL MUNITIONS

2.1 Base-Wide Assessment

It is reported that in 1983 and 1984, CH2MHill was retained by the Strategic Air Command to identify and fully evaluate suspected problems associated with past hazardous materials disposal sites on Department of Defense (DoD) facilities, control the migration of hazardous contamination from such facilities, and control hazards to the health and welfare that may have resulted from these past operations. A four-phased Installation Restoration Program was directed. Phase I of this program consisted of completing detailed record searches. It is reported that the March AFB records search included a detailed review of pertinent installation records, 18 outside agency contacts for documents relevant to the records search effort, and an on-site base visit. The base visit is reported to have included interviews with 81 past and present base employees, ground and helicopter tours of the installation and past disposal areas, and a detailed search of the installation records. Prior to the base visit, the Public Affairs Office provided a press release announcing the study and requesting persons knowledgeable of past disposal practices at the installation to contact March AFB. The results of this study were reported in Installation Restoration Program Records Search for March Air Force Base, dated April 1984 (CH2MHILL, 1984).

Reported in Section IV.A.12 of CH2MHILL (1984) was information on “Other Activities”. This section states the following:

Review of available base records and information obtained during the base personnel interviews produced no evidence of the past or present storage, disposal, or handling of biological or chemical warfare agents at March AFB.

2.2. Specific Plan Site

Provided within Leightons prior report titled *Phase II Environmental Assessment Meridian – West Campus Upper Plateau*, dated January 17, 2022 (Leighton, 2022), is a report provided by Vista Environmental Services (Vista), a subcontracted hazardous materials testing company, which was assessing for potential asbestos and lead-based paint in structures at the Site. The Vista report is dated January 17, 2022, and is located in Appendix D of our January 17, 2022 report. This Vista report includes a reference to three bunkers (nos. 5033, 5035 and 5037) which might be configured for non-conventional munitions, based on unique, smaller interior vault-like configurations noted within these three bunkers. It is noted that in the prior 2006 radiological report by Cabrera (Cabrera, 2006), they called out these same numbered bunkers as having been used to store some radiological materials. While Vista may have noted that the interior vault-like

configurations could have been used for nuclear, biological and/or chemical munitions, Vista was not working for or with the Air Force, had no background knowledge of what type of munitions were stored in these bunkers, and is not a firm with capabilities to assess for non-conventional munitions.

Additionally, during Leighton's various assessments, we have found no evidence to indicate biological or chemical munitions were likely stored in these, or other buildings, on the former ordnance storage area, or that the Water Board has expressed concerns with such.

2.3 Adjoining Site 25

The following discussion is also provided regarding historical Site 25, which is located adjoining to the southeast of the Specific Plan Site.

A closure report for Site 25 (Air Force Real Property Agency 9 (AFRPA), 2009) notes the following:

- “A 1996 memorandum from the U.S. Army Corps of Engineers (USACE) indicated the Corps Omaha District Rapid Response Program was requested to perform a removal action at Site 25. Their involvement was as a result of references to chemical warfare agents disposed at Site 25 in the 1993 RI report. Due to the conflicting information obtained to date, the Omaha District requested re-interviews of select personnel be performed to validate the statements made (USACE, 1996).”
- “The combined IT/USACE investigation found the following:
 - Only one individual named in the RI as having knowledge of ordnance disposal at Site 25 had first-hand knowledge of ordnance residue disposal conducted at Site 25. The one individual stated that no chemical warfare munitions were buried at Site 25.
 - A search of Camp Haan records concluded that all significant live weapons training was conducted at other U.S. Army Installations in California. Only small arms and tear gas training was conducted at former Camp Haan or at March AFB.

Based on these findings, it was concluded that no chemical warfare material was disposed of at Site 25.”

These findings are consistent with the Final Comprehensive Site Evaluation Phase I Report was prepared for the Military Munitions Response Program in March 2013 (USAF, 2013). That report identified Area Number 2 as having Chemical Warfare Materiel (CWM) in the form of magazines and gas chamber. The report explains that the “CWM (Magazines and Gas Chamber) was located in buildings T1260, T1261, and T1262 just off the southeast corner of the runway and south of Iris Avenue.” It further indicates that “[h]istoric records reveal that CWM was stored and training was conducted at March AFB, including a Unit Gas Officers’ School. Based on a letter

from 1944, the CWM (magazine and Gas Chamber) buildings were used to store: M1 sample gas ID set, M1 detonating gas ID set, HC smoke pots, 2-chloro-1-phenylethanone (CN) capsules, M1 smoke pots, and titanium tetrachloride and chlorosulfonic acid drums.” That report noted that “[t]he CWM (Magazine and Gas Chamber) buildings are no longer present. The Gas Chamber and Magazines have been demolished and no evidence of their former location was found. The site has been reworked and is now an open field.” Area Number 2 is located more than 3 miles from the Project Site, across Interstate 215, and will not be disturbed or impacted by the Project.

Section References

Air Force Real Property Agency, 2009, Memorandum for Record, Closure of Military Munitions Response Program (MMRP) Site, WP025, Munitions Residue Burial Site at the Former March Air Force Base, California, AR File No. 2409, dated March 19, 2009.

Cabrera (Cabrera Services, Inc.), 2006, Final Preliminary Assessment and Site Inspection Report for the Former Weapons Storage Area, March Air Force Base, Riverside, California; prepared for U.S. Air Force Institute for Operational Health, September 2006.

CH2MHILL, 1984, Installation and Restoration Program Records Search for March Air Force Base, California.

Leighton, 2022, Phase II Environmental Site Assessment, Meridian – West Campus Upper Plateau, dated January 17, 2022.

USAF, 2013, Final Comprehensive Site Evaluation Phase I Report, March Air Reserve Base, California, Military Munitions Response Program, dated March 2013, Version 00.

3.0 PFAS INVESTIGATION

In May 2022, the Air Force prepared a Final Quality Program Plan (QPP) for the Remedial Investigation of Per- and Polyfluoroalkyl Substances (PFAS) at the Former March Air Force Base (AFB) and March Air Reserve Base (ARB) (the PFAS QPP) (AFCEC. 2022). PFAS are a group of manufactured chemicals that have been used in industry and consumer products since mid-1900s. There are thousands of different PFAS. According to the EPA, Perfluorooctanoic Acid (PFOA) and Perfluorooctane Sulfonate (PFOS) are two of the most widely used and studied chemicals in the PFAS group, but PFOA and PFOS have been replaced in the United States with other PFAS in recent years. People can be exposed to PFAS in a variety of ways, including through drinking water contaminated with PFAS, eating certain foods that may contain PFAS, using products made with PFAS or packaged in materials containing PFAS, swallowing contaminated soil or dust, breathing air contaminated with PFAS, and working in occupations such as firefighting or chemicals manufacturing and processing. PFAS substances are generally considered non-volatile.¹ USEPA cites the following health effects associated with PFAS exposure as indicated by current peer-reviewed scientific studies:

- Reproductive effects such as decreased fertility or increased high blood pressure in pregnant women.
- Developmental effects or delays in children, including low birth weight, accelerated puberty, bone variations, or behavioral changes.
- Increased risk of some cancers, including prostate, kidney, and testicular cancers.
- Reduced ability of the body's immune system to fight infections, including reduced vaccine response.
- Interference with the body's natural hormones.
- Increased cholesterol levels and/or risk of obesity.

Currently, there are no legally enforceable federal or State of California criteria for PFAS, although there has been guidance issued by several agencies including the EPA, DoD, and the State of California through the Regional Water Quality Control Board's Division of Drinking Water. In March 2023, EPA announced the proposed National Primary Drinking Water Regulation (NPDWR) for six PFAS including PFOA, PFOS, perfluorononanoic acid (PFNA),

¹ Fluorotelomer alcohols (FTOH) are the only PFAS substances considered volatile. FTOHs have been identified in consumer products like carpet, commercial carpet-care liquids, household carpet/fabric-care liquids, treated apparel, treated home textiles, treated non-woven medical garments, floor waxes, food-contact paper, membranes for apparel, and thread-sealant tapes. While FTOHs are considered volatile, there are no human toxicological values for FTOH and these compounds are not regulated in the environment by California or by the USEPA.

hexafluoropropylene oxide dimer acid (HFPO-DA, commonly known as GenX Chemicals), perfluorohexane sulfonic acid (PFHxS), and perfluorobutane sulfonic acid (PFBS). The proposed PFAS NPDWR does not require any actions until it is finalized, which EPA anticipates will occur by the end of 2023 (USEPA, 2023).

The PFAS QPP was conducted to “determine the nature and extent of PFAS (PFOS, PFOA, and PFBS) in soil and groundwater” at the March AFB. The PFAS QPP was reviewed and approved by the EPA, the SARWQCB, and the California Department of Toxic Substances Control (DTSC). In connection with the PFAS QPP, a preliminary assessment was conducted to determine the probable release locations of PFAS at the March ARB as a result of Air Force operations. The only location within the Specific Plan area reported to have been assessed by the PFAS QPP was the West March AFFF Area 3 - Landfill 5, which is located east of the project Specific Plan main area, near the proposed extension of Cactus Avenue. The results and analysis of the three samples collected in this nearby area are discussed below in Section 4. The PFAS QPP did not identify other locations within the Specific Plan area needing to be assessed for PFAS.

In March and May of 2022, additional sampling for PFAS was completed in West March AFFF Area 3 – Landfill 5, which is adjoining east of the main Specific Plan area, and only slightly overlaps with the proposed extension of Cactus Avenue (see **Attachment A**). The results of this sampling are further discussed below in Section 4.0.

Section References

AFCEC, 2022, Final Quality Program Plan (QPP) for Remedial Investigation of Per- and Polyfluoroalkyl Substances (PFAS) at the Former March Air Force Base (AFB) and March Air Reserve Base (ARB), California, memorandum dated May 10, 2022.

USEPA, 2023, Per- and Polyfluoroalkyl Substances (PFAS) Proposed PFAS National Primary Drinking Water Regulation, dated March 14, 2023.

4.0 CACTUS AVENUE, BROWN STREET, AND BARTON STREET EXTENSIONS

The proposed Barton Street extension was within the limits of the prior Phase I and Phase II Environmental Site Assessments (ESAs) completed by Leighton. No information was found in these assessments to indicate development along this proposed road extension alignment is likely to cause an unacceptable health risk to surrounding developments or future users of this roadway alignment (Leighton, 2021; Leighton, 2022).

Provided as **Attachment A** is a map showing the proposed development in the former ordnance storage area (aka WSA), as well as the proposed extensions of Cactus Avenue and Brown Street to the east of this area. Indicated on this map is the approximate extent and location of Area 3 - former Landfill No. 5. Only a small portion of the proposed Cactus Ave. extension may extend over Area 3 -former Landfill No. 5. Landfill 5 is not a current landfill, but a former landfill that was remediated in 1995 and 1996 by the removal of 223,200 cubic yards of landfilled materials and soil. Reports on confirmation sampling, conducted after the removal action, indicate it was cleaned up to levels protective of human health and the environment. This area was then reported to have been restored by backfilling with clean soil and revegetating the site. No restrictions on land use were required following these remediation efforts (Air Force Civil Engineering Center (AFCEC), 2004). In summary, because former Landfill 5 was removed, it cannot be disturbed by the proposed roadway extension activities.

Despite the prior removal of Landfill 5 (aka West March AFFF Area 3 - Landfill 5), it is noted that the Air Force subsequently collected a groundwater, sediment, and surface water sample in this area, in 2017, as a screening for potential residual PFAS compounds. Groundwater is estimated to be approximately 20-30 feet deep in West March AFF Area 3 - Landfill 5. The single groundwater sample collected was reported to contain 91.9 nanograms per liter (ng/L) of one PFAS compound (PFOA), exceeding the reported 40 ng/L project screening level for this compound. The single sediment and surface water samples were reported to contain no PFAS compounds exceeding their reported project screening levels (AFCEC, 2002).

In March and May of 2022, additional soil and groundwater sampling was completed in West March AFFF Area 3 - Landfill 5. The results were presented in meeting minutes for a USAF technical working group (AFCEC, 2023). The results of seven soil samples, collected in the upper seven feet of soil, indicated no PFAS compound concentrations exceeding the project soil screening criteria. No additional soil sampling was recommended for AFFF Area 3 - Landfill 5. In regards to groundwater, eight in-situ grab groundwater samples were collected and reported to contain between 2.3 and 117 ng/L of three PFAS compounds (PFOA, PFOS, PFBS), in many cases exceeding the project groundwater screening criteria. Additional groundwater sampling is recommended in this area (AFCEC, 2023). The SARWQCB responded to the data in AFCEC (2023) with an email indicating they concur with the meeting minutes (SARWQCB, 2023).

General background information on the nature and occurrence of PFAS compounds was discussed previously above in section 3.0. PFAS compounds are relatively mobile in groundwater, but not in soil, unless migrating downward with soil moisture. The most prominent routes of exposure to PFAS in soil are via direct contact with soil containing them, or via PFAS contaminated dust. Most PFAS compounds are considered non-volatile¹. The extension of Brown Street and Cactus Avenue are unlikely to disturb soils containing hazardous substances or PFAS in the area of former Landfill 5 (aka Site 3). Despite it being unlikely that PFAS or other hazardous substances will be encountered during construction of the proposed roadways, the dominant potential pathway of exposure to neighboring developments would be via dust. Dust suppression is planned during future construction activities to minimize this potential pathway.

The prominent route of exposure for PFAS in groundwater is via drinking water from wells installed in that groundwater. This is considered an incomplete pathway in the area of the Specific Plan, as there are no municipal supply wells within this area. The proposed construction activities are also not expected to intersect the groundwater table.

In summary, based on our prior Phase I and II ESAs (Leighton, 2021; Leighton, 2022), and the additional information discuss above, no significant evidence was found to indicate the proposed future roadway extensions (Cactus Ave, Brown Street, or Barton Way) will create an unacceptable health risk to surrounding developments or future users of these roadway alignments.

Section References

AFCEC, 2023, Final Technical Group Working Meeting, RI/FS of Per and Polyfluoroalkyl Substances (PFAS), Former March Air Force Base, and march Air Reserve Base, meeting notes dated February 13, 2023.

AFCEC, 2004, Final Former March Air Force Based, California, Operable Unit 2, Air Force Real Property Agency, Record of Decision, April 2004.

AFCEC, 2022, Final Quality Program Plan (QPP) for Remedial Investigation of Per- and Polyfluoroalkyl Substances (PFAS) at the Former March Air Force Base (AFB) and March Air Reserve Base (ARB), California, memorandum dated May 10, 2022.

Leighton, 2021, Phase I Environmental Site Assessment, Meridian - West Campus Upper Plateau, dated October 11, 2021.

Leighton, 2022, Phase II Environmental Site Assessment, Meridian - West Campus Upper Plateau, dated January 17, 2022.

SARWQCB, 2023, Former March AFB/March ARB PFAS RI -Technical Working Group Meeting – Draft Meeting Minutes; email dated April 3, 2023.

5.0 PHASE II SAMPLING DEPTH AND SOIL ANALYTICAL RESULTS – RESIDENTIAL AND CONSTRUCTION WORKER STANDARDS

5.1 Sampling Depths

We completed the environmental soil sampling in the locations, and to the depths, judged appropriate based on the potential concern for the former Ordnance Storage Facility / Weapons Storage Area activities to have caused a potential impact to shallow soils. Historical research indicates these former activities occurred at the existing site grade. There is no indication of former activities/features likely to have caused a release (of the chemicals of concern for which analyses were completed) that originated well below the existing ground surface (such as deeply buried tanks or pipelines, etc.). Leighton completed various environmental soil sampling trenches to five feet deep below ground surface (bgs), as well as environmental sampling borings to approximately 25 to 30 feet bgs. The reason the borings were drilled to 25-30 feet deep, was because they were slant borings drilled in an attempt to intersect soils beneath a building of potential concern (i.e., had to be drilled deeper to intersect soils beneath the building). The depths of an environmental investigation are not inherently based on future building design issues, geotechnical issues, or future grading considerations. Given the known site conditions, and future planned site usage, the depth of environmental investigations were appropriate.

5.2 Residential and Construction Worker Standards

As detailed in Leighton's Phase II ESA, all concentrations of potential compounds of concern analyzed for in soil samples, are below the relevant commercial/industrial screening levels (with the exception of arsenic, which is well below the more relevant applicable regional background concentration) (Leighton, 2022).

Further analysis of these soil data has been completed by comparing it also to USEPA and DTSC soil screening levels for a residential scenario, as well as construction worker environmental screening levels (ESLs) published by the San Francisco Regional Water Quality Control Board (SFRWQCB). The Santa Ana RWQCB does not publish construction worker screening levels. The SFRWQCB ESLs are considered conservative, and are used by other water boards and environmental regulatory agencies for guidance. Provided in **Attachment B** are the tabulated historical soil data (Table nos. 1 & 2) together with these additional soil screening levels (at bottom of tables), as well as a copy of the SFRWQB soil ESLs.

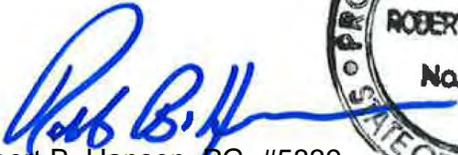
Table nos. 1 & 2 indicate all compounds are below all of the indicated soil screening levels (commercial/industrial, residential and construction worker). Given that all concentrations of analyzed compounds in the soil samples are well below the screening levels for hypothetical on-site construction workers or hypothetical on-site residential occupants, there is no indication of a likely unacceptable health risks to occupants of neighboring properties, related to these compounds and construction activities which are proposed.

Section References

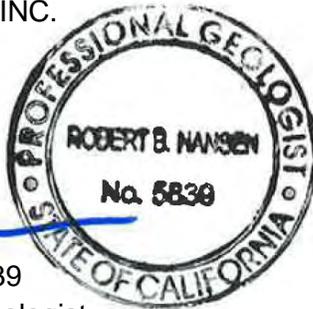
Leighton, 2022, Phase II Environmental Site Assessment, Meridian – West Campus Upper Plateau, dated January 17, 2022.

Should you have any questions regarding this supplemental report, please contact the undersigned at (909) 527-8782.

Respectfully submitted,
LEIGHTON CONSULTING, INC.

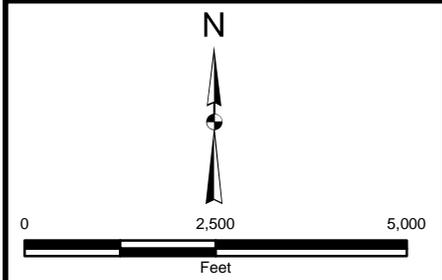
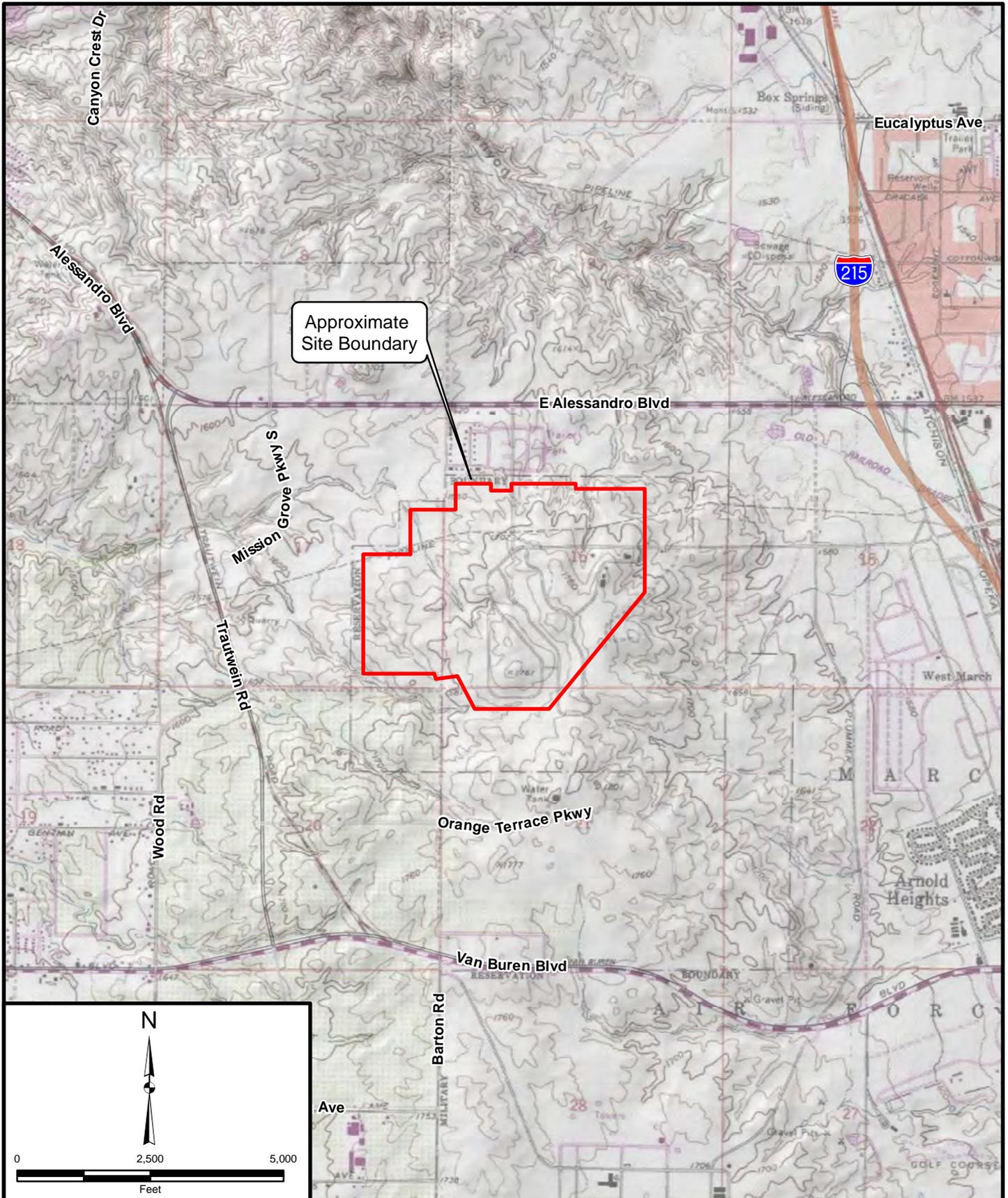


Robert B. Hansen, PG, #5839
Associate Environmental Geologist



Attachments: Figure 1 - Site Location Map
Attachment A - West Campus Upper Plateau - Site Plan
Attachment B - Historical Soil Data & San Francisco Bay RWQCB Soil ESLs

Distribution: Addressee



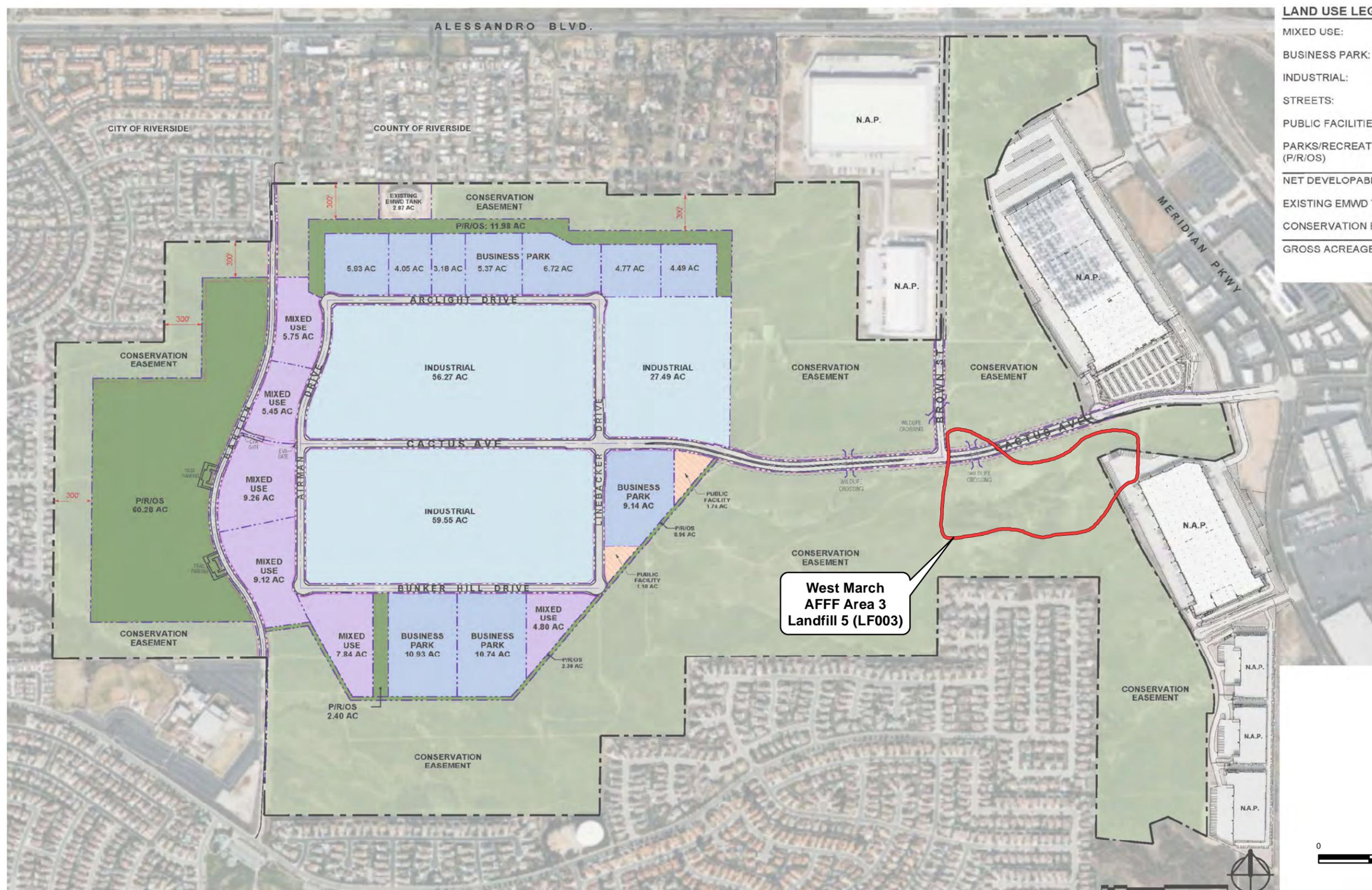
Project: 13226.003	Eng/Geol: RBH
Scale: 1" = 2,500'	Date: May 2022
Basemap: ESRI ArcGIS Online 2022	

SITE LOCATION MAP
 Meridian-West Campus, Upper Plateau
 Riverside, California

FIGURE 1

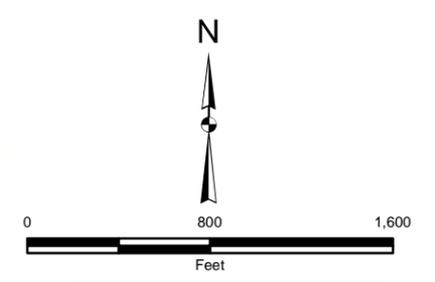


ATTACHMENT A
WEST CAMPUS UPPER PLATEAU – SITE PLAN



LAND USE LEGEND	
MIXED USE:	42.22 AC
BUSINESS PARK:	65.32 AC
INDUSTRIAL:	143.31 AC
STREETS:	37.91 AC
PUBLIC FACILITIES:	2.84 AC
PARKS/RECREATION/OPEN SPACE: (P/R/OS)	78.00 AC
NET DEVELOPABLE:	369.60 AC
EXISTING EMWD TANK	2.87 AC
CONSERVATION EASEMENT:	445.43 AC
GROSS ACREAGE:	817.90 AC

**West March
AFFF Area 3
Landfill 5 (LF003)**



Project: 13228.005	Eng/Geol: RBH
Scale: 1" = 800'	Date: June 2023
Base Map: Site Plan by Dudek.	
Author: Leighton Geomatics (mmurphy)	

SITE PLAN

FIGURE 1





ATTACHMENT B

HISTORICAL SOIL DATA & SAN FRANCISCO BAY RWQCB SOIL ESLS

TABLE 1: SOIL ANALYTICAL RESULTS - TPH (C6-C44), VOLATILE ORGANIC COMPOUNDS (VOCs), SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs), ORGANOCHLORINE PESTICIDES (OCPs), POLYCHLORINATED BIPHENYL (PCBs), CHLORINATED HERBICIDES, ASBESTOS

Sample Number	Sample Depth (feet-bgs)	Sample Date	TPH (C ₆ -C ₁₂) (gasoline)	TPH (C ₁₀ -C ₂₈) (diesel)	TPH (C ₁₇ -C ₄₄) (oil)	SVOCs										OCPs			PCBs		Chlorinated Herbicides	Asbestos	
						Acenaphthylene	Benzo (a) anthracene	Benzo (b) fluoranthene	Benzo (g,h,i) perylene	Butylbenzylphthalate	Chrysene	Fluoranthene	Fluorene	Phenanthrene	Pyrene	All Other SVOCs	4-4'-DDE	Endrin Aldehyde	Other OCPs	PCB-1254			All Other PCBs
All results in milligrams/kilogram (mg/kg)																							
Historical (1962-1989) Area of Unknown U-Shaped Feature																							
SP1-0.5	0-0.5	10/26/2021	ND>10	ND>10	ND>25	ND>0.028	ND>0.080	ND>0.104	ND>0.044	ND>0.031	ND>0.036	ND>0.022	ND>0.026	ND>0.036	ND>0.043	ALL ND>0.015-1.25	0.0007J	ND>0.0001	ND>0.0001-0.01	ND>0.005	ALL ND>0.0050	---	---
SP1-2.5	2-2.5	10/26/2021	ND>10	ND>10	ND>25	ND>0.028	ND>0.080	ND>0.104	ND>0.044	ND>0.031	ND>0.036	ND>0.022	ND>0.026	ND>0.036	ND>0.043	ALL ND>0.015-1.25	ND>0.0003	ND>0.0001	ND>0.0001-0.01	ND>0.005	ALL ND>0.0050	---	---
SP1-4	3.5-4	10/26/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP2-0.5	0-0.5	10/26/2021	ND>10	ND>10	ND>25	ND>0.028	ND>0.080	ND>0.104	ND>0.044	ND>0.031	ND>0.036	ND>0.022	ND>0.026	ND>0.036	ND>0.043	ALL ND>0.015-1.25	---	---	---	---	---	---	---
SP2-2.5	2-2.5	10/26/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP2-5	4.5-5	10/26/2021	ND>10	ND>10	ND>25	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP3-0.5	0-0.5	10/26/2021	ND>10	ND>10	ND>25	---	---	---	---	---	---	---	---	---	---	---	ND>0.0003	ND>0.0001	ND>0.0001-0.01	ND>0.005	ALL ND>0.0050	---	---
SP3-2.5	2-2.5	10/26/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND>0.0003	ND>0.0001	ND>0.0001-0.01	ND>0.005	ALL ND>0.0050	---	---
SP3-5	4.5-5	10/26/2021	ND>10	ND>10	ND>25	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP4-0.5	0-0.5	10/26/2021	ND>10	18.7	ND>25	ND>0.028	ND>0.080	ND>0.104	ND>0.044	ND>0.031	ND>0.036	ND>0.022	ND>0.026	ND>0.036	ND>0.043	ALL ND>0.015-1.25	---	---	---	---	---	---	---
SP4-2.5	2-2.5	10/26/2021	ND>10	ND>10	ND>25	ND>0.028	ND>0.080	ND>0.104	ND>0.044	ND>0.031	ND>0.036	ND>0.022	ND>0.026	ND>0.036	ND>0.043	ALL ND>0.015-1.25	---	---	---	---	---	---	---
SP4-3.5	3-3.5	10/26/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP5-0.5	0-0.5	10/26/2021	ND>10	ND>10	ND>25	---	---	---	---	---	---	---	---	---	---	---	0.0008J	ND>0.0001	ND>0.0001-0.01	ND>0.005	ALL ND>0.0050	---	---
SP5-2.5	2-2.5	10/26/2021	ND>10	ND>10	ND>25	---	---	---	---	---	---	---	---	---	---	---	ND>0.0003	0.0006J	ND>0.0001-0.01	ND>0.005	ALL ND>0.0050	---	---
SP5-5	4.5-5	10/26/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Historical (1953) Building/Storage Area 1																							
SP6-0.5	0-0.5	10/27/2021	ND>10	ND>10	ND>50	---	---	---	---	---	---	---	---	---	---	---	ND>0.0003	ND>0.0001	ND>0.0001-0.01	ND>0.005	ALL ND>0.0050	---	---
SP6-2.5	2-2.5	10/27/2021	ND>10	ND>10	ND>50	---	---	---	---	---	---	---	---	---	---	---	ND>0.0003	ND>0.0001	ND>0.0001-0.01	ND>0.005	ALL ND>0.0050	---	---
SP6-5	4.5-5	10/27/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP7-0.5	0-0.5	10/27/2021	ND>10	ND>10	ND>50	ND>0.028	ND>0.080	ND>0.104	ND>0.044	ND>0.031	ND>0.036	ND>0.022	ND>0.026	ND>0.036	ND>0.043	ALL ND>0.015-1.25	ND>0.0003	ND>0.0001	ND>0.0001-0.01	---	---	---	---
SP7-2.5	2-2.5	10/27/2021	ND>10	ND>10	ND>50	ND>0.028	ND>0.080	ND>0.104	ND>0.044	ND>0.031	ND>0.036	ND>0.022	ND>0.026	ND>0.036	ND>0.043	ALL ND>0.015-1.25	ND>0.0003	ND>0.0001	ND>0.0001-0.01	---	---	---	---
SP7-5	4.5-5	10/27/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP8-0.5	0-0.5	10/27/2021	ND>10	ND>10	ND>50	ND>0.028	ND>0.080	ND>0.104	ND>0.044	ND>0.031	ND>0.036	ND>0.022	ND>0.026	ND>0.036	ND>0.043	ALL ND>0.015-1.25	---	---	---	ND>0.005	ALL ND>0.0050	---	---
SP8-2.5	2-2.5	10/27/2021	ND>10	ND>10	ND>50	ND>0.028	ND>0.080	ND>0.104	ND>0.044	ND>0.031	ND>0.036	ND>0.022	ND>0.026	ND>0.036	ND>0.043	ALL ND>0.015-1.25	---	---	---	ND>0.005	ALL ND>0.0050	---	---
SP8-5.0	4.5-5	10/27/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Historical (1949) Cleared Area 1																							
SP9-0.5	0-0.5	10/26/2021	ND>10	ND>10	ND>25	---	---	---	---	---	---	---	---	---	---	---	ND>0.0003	ND>0.0001	ND>0.0001-0.01	ND>0.005	ALL ND>0.0050	---	---
SP9-2.5	2-2.5	10/26/2021	ND>10	ND>10	ND>25	---	---	---	---	---	---	---	---	---	---	---	ND>0.0003	ND>0.0001	ND>0.0001-0.01	ND>0.005	ALL ND>0.0050	---	---
SP9-5	4.5-5	10/26/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP10-0.5	0-0.5	10/26/2021	ND>10	ND>10	ND>25	ND>0.028	ND>0.080	ND>0.104	ND>0.044	ND>0.031	ND>0.036	ND>0.022	ND>0.026	ND>0.036	ND>0.043	ALL ND>0.015-1.25	---	---	---	---	---	---	---
SP10-2.5	2-2.5	10/26/2021	ND>10	ND>10	ND>25	ND>0.028	ND>0.080	ND>0.104	ND>0.044	ND>0.031	ND>0.036	ND>0.022	ND>0.026	ND>0.036	ND>0.043	ALL ND>0.015-1.25	---	---	---	---	---	---	---
SP10-5	4.5-5	10/26/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP11-0.5	0-0.5	10/26/2021	ND>10	ND>10	ND>25	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND>0.005	ALL ND>0.0050	---	---
SP11-2.5	2-2.5	10/26/2021	ND>10	ND>10	ND>25	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND>0.005	ALL ND>0.0050	---	---
SP11-5.0	4.5-5	10/26/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP12-0.5	0-0.5	10/26/2021	ND>10	ND>10	ND>25	ND>0.028	ND>0.080	ND>0.104	ND>0.044	ND>0.031	ND>0.036	ND>0.022	ND>0.026	ND>0.036	ND>0.043	ALL ND>0.015-1.25	ND>0.0003	ND>0.0001	ND>0.0001-0.01	---	---	---	---
SP12-2.5	2-2.5	10/26/2021	ND>10	ND>10	ND>25	ND>0.028	ND>0.080	ND>0.104	ND>0.044	ND>0.031	ND>0.036	ND>0.022	ND>0.026	ND>0.036	ND>0.043	ALL ND>0.015-1.25	ND>0.0003	ND>0.0001	ND>0.0001-0.01	---	---	---	---
SP12-5.0	4.5-5	10/26/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Historical (1949-1967) Cleared Area 2 & Building /Storage Area 2																							
SP13-0.5	0-0.5	10/27/2021	ND>10	ND>10	ND>50	ND>0.028	ND>0.080	ND>0.104	ND>0.044	ND>0.031	ND>0.036	ND>0.022	ND>0.026	ND>0.036	ND>0.043	ALL ND>0.015-1.25	ND>0.0003	ND>0.0001	ND>0.0001-0.01	---	---	---	---
SP13-2.5	2-2.5	10/27/2021	ND>10	ND>10	ND>50	ND>0.028	ND>0.080	ND>0.104	ND>0.044	ND>0.031	ND>0.036	ND>0.022	ND>0.026	ND>0.036	ND>0.043	ALL ND>0.015-1.25	ND>0.0003	ND>0.0001	ND>0.0001-0.01	---	---	---	---
SP13-5	4.5-5	10/27/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP14-0.5	0-0.5	10/27/2021	ND>10	ND>10	ND>50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP14-2.5	2-2.5	10/27/2021	ND>10	ND>10	ND>50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND>0.005	ALL ND>0.0050	---	---
SP14-4	3.5-4	10/27/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND>0.005	ALL ND>0.0050	---	---

TABLE 1: SOIL ANALYTICAL RESULTS - TPH (C6-C44), VOLATILE ORGANIC COMPOUNDS (VOCs), SEMI-VOLATILE ORGANIC COMPOUNDS (SVOCs), ORGANOCHLORINE PESTICIDES (OCPs), POLYCHLORINATED BIPHENYL (PCBs), CHLORINATED HERBICIDES, ASBESTOS

Sample Number	Sample Depth (feet- bgs)	Sample Date	TPH (C ₆ -C ₁₂) (gasoline)	TPH (C ₁₀ -C ₂₈) (diesel)	TPH (C ₁₇ -C ₄₄) (oil)	SVOCs										OCPs			PCBs		Chlorinated Herbicides	Asbestos		
						Acenaphthylene	Benzo (a) anthracene	Benzo (b) fluoranthene	Benzo (g,h,i) perylene	Butylbenzylphthalate	Chrysene	Fluoranthene	Fluorene	Phenanthrene	Pyrene	All Other SVOCs	4-4'-DDE	Endrin Aldehyde	Other OCPs	PCB-1254			All Other PCBs	
All results in milligrams/kilogram (mg/kg)																								
SP15-0.5	0-0.5	10/27/2021	ND>10	ND>10	ND>50	ND>0.028	ND>0.080	ND>0.104	ND>0.044	ND>0.031	ND>0.036	ND>0.022	ND>0.026	ND>0.036	ND>0.043	ALL ND>0.015-1.25	ND>0.0003	ND>0.0001	ND>0.0001-0.01	ND>0.005	ALL ND>0.0050	---	---	
SP15-2.5	2-2.5	10/27/2021	ND>10	ND>10	ND>50	ND>0.028	ND>0.080	ND>0.104	ND>0.044	ND>0.031	ND>0.036	ND>0.022	ND>0.026	ND>0.036	ND>0.043	ALL ND>0.015-1.25	ND>0.0003	ND>0.0001	ND>0.0001-0.01	ND>0.005	ALL ND>0.0050	---	---	
SP16-0.5	0-0.5	10/27/2021	ND>10	ND>10	ND>50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND>0.005	ALL ND>0.0050	---	---	
SP16-2.5	2-2.5	10/27/2021	ND>10	ND>10	ND>50	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND>0.005	ALL ND>0.0050	---	---	
SP16-5	4.5-5	10/27/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
SP17-0.5	0-0.5	10/27/2021	ND>10	ND>10	ND>50	ND>0.028	0.640	0.585	0.265J	0.261J	0.853	1.15	ND>0.026	1.06	1.42	ALL ND>0.015-1.25	ND>0.0003	ND>0.0001	ND>0.0001-0.01	---	---	---	---	
SP17-2.5	2-2.5	10/27/2021	ND>10	ND>10	ND>50	ND>0.028	ND>0.080	ND>0.104	ND>0.044	ND>0.031	ND>0.036	ND>0.022	ND>0.026	ND>0.036	ND>0.043	ALL ND>0.015-1.25	ND>0.0003	ND>0.0001	ND>0.0001-0.01	---	---	---	---	
Water Cooling Tower																								
CT1-0.5	0-0.5	10/27/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	None Detected	
CT1-2.5	2-2.5	10/27/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
CT1-3.5	3-3.5	10/27/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
CT2-0.5	0-0.5	10/27/2021	---	---	---	ND>0.028	0.320J	ND>0.104	ND>0.044	ND>0.031	0.581	0.643	ND>0.026	0.521	0.825	ALL ND>0.015-1.25	---	---	---	---	---	---	None Detected	
CT2-2	1.5-2	10/27/2021	---	---	---	ND>0.028	ND>0.080	ND>0.104	ND>0.044	ND>0.031	ND>0.036	ND>0.022	ND>0.026	ND>0.036	ND>0.043	ALL ND>0.015-1.25	---	---	---	---	---	---	---	
CT3-0.5	0-0.5	10/27/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	None Detected	
CT3-2.5	2-2.5	10/27/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
CT4-0.5	0-0.5	10/27/2021	---	---	---	0.260J	0.949	ND>0.104	ND>0.044	1.08	1.47	2.51	ND>0.026	2.37	2.78	ALL ND>0.015-1.25	---	---	---	---	---	---	None Detected	
CT4-2.5	2-2.5	10/27/2021	---	---	---	ND>0.028	ND>0.080	ND>0.104	ND>0.044	ND>0.031	ND>0.036	ND>0.022	ND>0.026	ND>0.036	ND>0.043	ALL ND>0.015-1.25	---	---	---	---	---	---	---	
CT4-3.5	3-3.5	10/27/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
CT5-0.5	0-0.5	10/27/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
CT5-2.5	2-2.5	10/27/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
CT5-3.5	3-3.5	10/27/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Building 2 Area Slant Borings																								
SB1-5	4.5-5	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
SB1-10	9.5-10	10/28/2021	ND>10	25.8	138	ND>0.028	ND>0.080	ND>0.104	ND>0.044	ND>0.031	ND>0.036	ND>0.022	ND>0.026	ND>0.036	ND>0.043	ALL ND>0.015-1.25	---	---	---	ND>0.005	ALL ND>0.005	ALL ND> 0.010-10.0	---	
SB1-15	14.5-15	10/28/2021	ND>10	8.24J	ND>25	ND>0.028	ND>0.080	ND>0.104	ND>0.044	ND>0.031	ND>0.036	ND>0.022	ND>0.026	ND>0.036	ND>0.043	ALL ND>0.015-1.25	---	---	---	ND>0.005	ALL ND>0.005	---	---	
SB1-20	19.5-20	10/28/2021	ND>10	14.7	53.3	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
SB1-25	24.5-25	10/28/2021	ND>10	8.92J	ND>25	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
SB1-30	29.5-30	10/28/2021	ND>10	ND>10	ND>25	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
SB2-10	9.5-10	10/28/2021	5.32J	15.1	61.9	ND>0.028	ND>0.080	ND>0.104	ND>0.044	ND>0.031	ND>0.036	ND>0.022	ND>0.026	ND>0.036	ND>0.043	ALL ND>0.015-1.25	---	---	---	ND>0.005	ALL ND>0.005	ALL ND> 0.010-10.0	---	
SB2-13	12.5-13	10/28/2021	ND>10	9.74J	ND>25	ND>0.028	ND>0.080	ND>0.104	ND>0.044	ND>0.031	ND>0.036	ND>0.022	ND>0.026	ND>0.036	ND>0.043	ALL ND>0.015-1.25	---	---	---	ND>0.005	ALL ND>0.005	---	---	
SB3-10	9.5-10	10/28/2021	10.2	12.1	ND>25	ND>0.028	ND>0.080	ND>0.104	ND>0.044	ND>0.031	ND>0.036	ND>0.022	ND>0.026	ND>0.036	ND>0.043	ALL ND>0.015-1.25	---	---	---	ND>0.005	ALL ND>0.005	ALL ND> 0.010-10.0	---	
SB3-15	14.5-15	10/28/2021	ND>10	19.2	26.5J	ND>0.028	ND>0.080	ND>0.104	ND>0.044	ND>0.031	ND>0.036	ND>0.022	ND>0.026	ND>0.036	ND>0.043	ALL ND>0.015-1.25	---	---	---	ND>0.005	ALL ND>0.005	---	---	
SB3-20	19.5-20	10/28/2021	ND>10	ND>10	ND>25	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
SB3-25	24.5-25	10/28/2021	ND>10	ND>10	ND>25	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
SB3-30	29.5-30	10/28/2021	ND>10	ND>10	ND>25	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
Electrical Substation Areas (Bldgs 2 and 4)																								
ES1-1-0.5	0-0.5	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND>0.005	ALL ND>0.005	---	---
ES1-1-2.5	2-2.5	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND>0.005	ALL ND>0.005	---	---
ES1-1-5.0	4.5-5.0	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
ES1-2-0.5	0-0.50	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND>0.005	ALL ND>0.005	---	---
ES1-2-2.5	2-2.5	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND>0.005	ALL ND>0.005	---	---
ES1-2-5.0	4.5-5.0	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
ES1-3-0.5	0-0.50	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND>0.005	ALL ND>0.005	---	---
ES1-3-2.5	2-2.5	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	0.009J	ALL ND>0.005	---	---
ES1-3-5.0	4.5-5.0	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	
ES2-1-0.5	0-0.50	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	ND>0.005	ALL ND>0.005	---	---

TABLE 2: SOIL ANALYTICAL RESULTS - TITLE 22 METALS

Sample Number	Sample Depth (ft bgs)	Sample Date	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Chromium VI (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)	Dilution Factor
Historical (1962-1989) Area of Unknown U-Shaped Feature																					
SP1-0.5	0-0.5	10/26/2021	ND>0.250	3.89	231	ND>0.180	ND>0.119	44.9	---	13.7	22.0	6.66	0.031	ND>0.274	10.2	ND>0.234	ND>0.414	7.17	59.9	127	1
SP1-2.5	2-2.5	10/26/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP1-4	3.5-4	10/26/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP2-0.5	0-0.5	10/26/2021	ND>0.250	0.800	280	ND>0.180	ND>0.119	34.7	---	12.2	16.0	0.699	0.018	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	43.6	43.8	1
SP2-2.5	2-2.5	10/26/2021	ND>0.250	0.591	271	ND>0.180	ND>0.119	31.3	---	10.50	10.7	ND>0.192	0.021	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	39.9	39.5	1
SP2-5	4.5-5	10/26/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP3-0.5	0-0.5	10/26/2021	ND>0.250	0.791	255	ND>0.180	ND>0.119	47.1	---	12.20	29.6	ND>0.192	0.022	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	59.4	48.0	1
SP3-2.5	2-2.5	10/26/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP3-5	4.5-5	10/26/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP4-0.5	0-0.5	10/26/2021	ND>0.250	1.86	181	ND>0.180	ND>0.119	32.9	---	10.1	12.3	2.76	0.013	ND>0.274	3.32	ND>0.234	ND>0.414	ND>0.432	41.7	38.6	1
SP4-2.5	2-2.5	10/26/2021	ND>0.250	1.89	185	ND>0.180	ND>0.119	35.0	---	11.80	11.9	2.52	0.02	ND>0.274	2.18J	ND>0.234	ND>0.414	ND>0.432	46.7	39.2	1
SP4-3.5	3-3.5	10/26/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP5-0.5	0-0.5	10/26/2021	ND>0.250	0.974	240	ND>0.180	ND>0.119	37.0	---	11.50	16.4	4.13	0.026	ND>0.274	ND>0.165	ND>0.234	ND>0.414	3.14	48.6	48.7	1
SP5-2.5	2-2.5	10/26/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP5-5	4.5-5	10/26/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Historical (1953) Building/Storage Area 1																					
SP6-0.5	0-0.5	10/27/2021	ND>0.250	1.55	152	ND>0.180	ND>0.119	28.4	---	8.71	30.4	1.1	0.31	ND>0.274	2.27J	ND>0.234	ND>0.414	1.67	37.0	28.3	1
SP6-2.5	2-2.5	10/27/2021	ND>0.250	1.63	210	ND>0.180	ND>0.119	34.5	---	10.2	34.8	0.789	0.023	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	43.0	36.6	1
SP6-5	4-4.5	10/27/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP7-0.5	0-0.5	10/27/2021	ND>0.250	1.44	247	ND>0.180	ND>0.119	37.4	---	12.9	12.4	1.75	0.020	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	50.5	49.5	1
SP7-2.5	2-2.5	10/27/2021	ND>0.250	0.512	239	ND>0.180	ND>0.119	34.3	---	10.7	7.61	ND>0.192	0.022	ND>0.274	ND>0.165	ND>0.234	ND>0.414	3.20	49.4	53.5	1
SP7-5	4.5-5	10/27/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP8-0.5	0-0.5	10/27/2021	ND>0.250	1.63	155	ND>0.180	ND>0.119	29.8	---	9.45	11.8	1.95	0.018	ND>0.274	3.03	ND>0.234	ND>0.414	4.79	39.1	35.6	1
SP8-2.5	2-2.5	10/27/2021	ND>0.250	1.22	200	ND>0.180	ND>0.119	31.5	---	8.70	12.9	0.813	0.025	ND>0.274	ND>0.165	ND>0.234	ND>0.414	3.49	40.9	35.1	1
SP8-5.0	4.5-5	10/27/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Historical (1949) Cleared Area 1																					
SP9-0.5	0-0.5	10/26/2021	ND>0.250	0.534	369	ND>0.180	ND>0.119	31.7	---	11.0	10.5	0.491J	0.015	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	44.7	41.1	1
SP9-2.5	2-2.5	10/26/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP9-5	4.5-5	10/26/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP10-0.5	0-0.5	10/26/2021	ND>0.250	0.831	315	ND>0.180	ND>0.119	35.7	---	13.0	10.4	ND>0.192	0.023	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	49.1	44.8	1
SP10-2.5	2-2.5	10/26/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP10-5	4.5-5	10/26/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP11-0.5	0-0.5	10/26/2021	ND>0.250	1.48	159	ND>0.180	ND>0.119	32.8	---	10.4	13.7	4.12	0.02	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	41.3	41.9	1
SP11-2.5	2-2.5	10/26/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP11-5.0	4.5-5	10/26/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP12-0.5	0-0.5	10/26/2021	ND>0.250	1.92	158	ND>0.180	ND>0.119	34.3	---	9.85	11.2	3.89	0.023	ND>0.274	2.68	ND>0.234	ND>0.414	ND>0.432	43.0	41.9	1
SP12-2.5	2-2.5	10/26/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP12-5.0	4.5-5	10/26/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Historical (1949-1967) Cleared Area 2 & Building /Storage Area 2																					
SP13-0.5	0-0.5	10/27/2021	ND>0.250	1.09	209	ND>0.180	ND>0.119	29.7	---	9.31	11.3	1.72	0.018	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	37.6	41.0	1
SP13-2.5	2-2.5	10/27/2021	ND>0.250	1.52	160	ND>0.180	ND>0.119	30.3	---	9.14	11.7	2.28	0.026	ND>0.274	2.95	ND>0.234	ND>0.414	4.33	38.6	40.1	1
SP13-5	4.5-5	10/27/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP14-0.5	0-0.5	10/27/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP14-2.5	2-2.5	10/27/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

TABLE 2: SOIL ANALYTICAL RESULTS - TITLE 22 METALS

Sample Number	Sample Depth (ft bgs)	Sample Date	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Chromium VI (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)	Dilution Factor
SP14-4	3.5-4	10/27/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP15-0.5	0-0.5	10/27/2021	ND>0.250	2.28	177	ND>0.180	ND>0.119	35.6	---	10.6	12.9	2.64	0.034	ND>0.274	4.46	ND>0.234	ND>0.414	4.3	46.7	41.8	1
SP15-2.5	2-2.5	10/27/2021	ND>0.250	1.98	192	ND>0.180	ND>0.119	35.5	---	9.76	12.5	2.36	0.032	ND>0.274	3.25	ND>0.234	ND>0.414	3.55	48.8	42.0	1
SP16-0.5	0-0.5	10/27/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP16-2.5	2-2.5	10/27/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP16-5	4.5-5	10/27/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SP17-0.5	0-0.5	10/27/2021	ND>0.250	1.43	143	ND>0.180	ND>0.119	27.2	---	9.54	10.9	2.39	0.028	ND>0.274	2.82	ND>0.234	ND>0.414	ND>0.432	35.2	36.7	1
SP17-2.5	2-2.5	10/27/2021	ND>0.250	1.16	246	ND>0.180	ND>0.119	34.7	---	8.49	14.0	1.1	0.028	ND>0.274	2.04J	ND>0.234	ND>0.414	ND>0.432	44.6	38.2	1
Water Cooling Tower																					
CT1-0.5	0-0.5	10/27/2021	ND>0.250	1.21	268	ND>0.180	ND>0.119	35.4	ND>0.0156	12.4	21.3	6.25	0.034	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	44.5	90.4	1
CT1-2.5	2-2.5	10/27/2021	ND>0.250	1.36	251	ND>0.180	ND>0.119	26.4	ND>0.0156	10.40	25.7	0.558	0.018	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	36.7	37.6	1
CT1-3.5	3-3.5	10/27/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CT2-0.5	0-0.5	10/27/2021	ND>0.250	1.53	247	ND>0.180	4.37	43.4	ND>0.0156	10.5	38.9	71.4	0.059	ND>0.274	3.15	ND>0.234	ND>0.414	3.55	41.3	538.0	1*
CT2-2-2.0	1.5-2	10/27/2021	ND>0.250	1.26	323	ND>0.180	ND>0.119	33.6	ND>0.0156	12.30	16.1	5.43	0.022	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	53.3	69.3	1
CT3-0.5	0-0.5	10/27/2021	ND>0.250	1.28	247	ND>0.180	ND>0.119	31.3	ND>0.0156	11.10	15.2	9.75	0.053	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	42.9	112.0	1
CT3-2.5	2-2.5	10/27/2021	ND>0.250	1.02	315	ND>0.180	ND>0.119	33.7	ND>0.0156	13.20	13.7	0.461J	0.031	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	47.4	45.5	1
CT4-0.5	0-0.5	10/27/2021	ND>0.250	1.32	236	ND>0.180	ND>0.119	27.7	ND>0.0156	9.99	14.3	2.04	0.022	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	39.2	49.2	1
CT4-2.5	2-2.5	10/27/2021	ND>0.250	1.03	270	ND>0.180	ND>0.119	31.1	ND>0.0156	11.00	12.4	ND>0.192	0.017	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	43.1	39.2	1
CT4-3.5	3-3.5	10/27/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CT5-0.5	0-0.5	10/27/2021	ND>0.250	1.18	267	ND>0.180	ND>0.119	30	ND>0.0156	11.1	14..8	1.52	0.015	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	42.6	48.8	1
CT5-2.5	2-2.5	10/27/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
CT5-3.5	3-3.5	10/27/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Building 2 Area Slant Borings																					
SB1-5	4.5-5.0	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	1
SB1-10	9.5-10.0	10/28/2021	ND>0.250	2.30	85.2	ND>0.180	ND>0.119	27.9	---	6.67	12.4	3.13	ND>0.0062	ND>0.274	3.67	ND>0.234	ND>0.414	ND>0.432	30.7	31.4	1
SB1-15	14.5-15.0	10/28/2021	ND>0.250	ND>0.248	356	ND>0.180	ND>0.119	29.1	---	10.4	13.6	0.520	ND>0.0062	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	44.2	37.6	1
SB1-20	19.50-20.0	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SB1-25	24.5-25.0	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SB1-30	29.5-30.0	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SB2-10	9.5-10.0	10/28/2021	ND>0.250	0.706	350	ND>0.180	ND>0.119	37.3	---	12.6	10.7	ND>0.192	0.015	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	50.3	46.0	1
SB2-13	12.5-13.0	10/28/2021	ND>0.250	ND>0.248	409	ND>0.180	ND>0.119	35.2	---	10.8	8.95	ND>0.192	ND>0.0062	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	47.8	39.5	1
SB3-10	9.5-10.0	10/28/2021	ND>0.250	ND>0.248	452	ND>0.180	ND>0.119	33.5	---	12.1	20.2	ND>0.192	0.025	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	53.0	45.1	1
SB3-15	14.5-15.0	10/28/2021	ND>0.250	ND>0.248	239	ND>0.180	ND>0.119	21.3	---	6.92	3.44	2.04	ND>0.0062	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	29.9	26.5	1
SB3-20	19.5-20.0	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SB3-25	24.5-25.0	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
SB3-30	29.5-30.0	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Electrical Substation Areas (Bldgs 2 and 4)																					
ES1-1-0.5	0-0.5	10/28/2021	ND>0.250	0.725	270	ND>0.180	ND>0.119	31.8	---	11.4	12.7	0.817	ND>0.0062	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	44.8	42.7	1
ES1-1-2.5	2-2.5	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
ES1-1-5.0	4.5-5.0	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
ES1-2-0.5	0-0.5	10/28/2021	ND>0.250	0.939	252	ND>0.180	ND>0.119	27.7	---	10.0	12.5	0.947	ND>0.0062	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	39.6	47.7	1
ES1-2-2.5	2-2.5	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
ES1-2-5.0	4.5-5.0	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
ES1-3-0.5	0-0.5	10/28/2021	ND>0.250	0.883	281	ND>0.180	ND>0.119	33.2	---	11.4	48.1	1.06	ND>0.0062	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	44.6	145	1
ES1-3-2.5	2-2.5	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
ES1-3-5.0	4.5-5.0	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---

TABLE 2: SOIL ANALYTICAL RESULTS - TITLE 22 METALS

Sample Number	Sample Depth (ft bgs)	Sample Date	Antimony (mg/kg)	Arsenic (mg/kg)	Barium (mg/kg)	Beryllium (mg/kg)	Cadmium (mg/kg)	Chromium (mg/kg)	Chromium VI (mg/kg)	Cobalt (mg/kg)	Copper (mg/kg)	Lead (mg/kg)	Mercury (mg/kg)	Molybdenum (mg/kg)	Nickel (mg/kg)	Selenium (mg/kg)	Silver (mg/kg)	Thallium (mg/kg)	Vanadium (mg/kg)	Zinc (mg/kg)	Dilution Factor
ES2-1-0.5	0-0.5	10/28/2021	ND>0.250	ND>0.248	344	ND>0.180	ND>0.119	34.5	---	11.8	12.1	3.30	ND>0.0062	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	50.0	115	1
ES2-1-2.5	2-2.5	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
ES2-1-5.0	4.5-5.0	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
ES2-2-0.5	0-0.5	10/28/2021	ND>0.250	ND>0.248	261	ND>0.180	ND>0.119	27.8	---	8.32	19.3	3.19	0.020	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	35.8	46.5	1
ES2-2-2.5	2-2.5	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
ES2-2-5.0	4.5-5.0	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Pad Mounted Electrical Transformers (Bldg. 5 & NW Ordnance Bunker Area)																					
PD1-1-0.5	0-0.5	10/28/2021	ND>0.250	ND>0.248	348	ND>0.180	ND>0.119	33.6	---	11.5	21.0	26.0	0.021	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	50.9	55.3	1
PD1-1-2.0	1.5-2.0	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
PD1-1-3.0	2.5-3.0	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
PD1-2-0.5	0-0.5	10/28/2021	ND>0.250	ND>0.248	333	ND>0.180	ND>0.119	34.0	---	12.1	16.6	3.08	0.028	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	51.5	136	1
PD1-2-2.0	1.5-2.0	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
PD2-1-0.5	0-0.5	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
PD2-1-2.5	2-2.5	10/28/2021	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---	---
Undocumented Stockpile (Western Portion of the Site)																					
DG1		10/27/2021	ND>0.250	ND>0.248	286	ND>0.180	ND>0.119	25.5	---	8.58	10.1	ND>0.192	0.019	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	34.5	36.5	1
DG2		10/27/2021	ND>0.250	ND>0.248	233	ND>0.180	ND>0.119	27.9	---	8.67	11.4	0.536	0.023	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	36.3	36.1	1
DG3		10/27/2021	ND>0.250	ND>0.248	335	ND>0.180	ND>0.119	34.3	---	11.6	11.5	ND>0.192	0.017	ND>0.274	ND>0.165	ND>0.234	ND>0.414	ND>0.432	45.4	49	1
Maximum Detected Concentration (mg/kg)			ND>0.250	3.89	452	ND>0.180	ND>0.119	47	ND>0.0156	13.70	48.1	71.4	0.3	ND>0.274	10.2	ND>0.234	ND>0.414	ND>0.432	59.9	538	-
USEPA Industrial RSLs (mg/kg)¹			470	3.0	220,000	2,300	100	1,800,000	6.3	350	47,000	800	46	5,800	22,000	5800	5800	12	5800	350,000	-
DTSC Modified Comm/Ind SLs (mg/kg)²			NL	0.36	NL	230	79	NL	6.2	NL	NL	500	4.4	NL	11,000	NL	NL	NL	NL	NL	-
USEPA Residential RSLs (mg/kg)¹			NL	0.68	15,000	160	7.1	120,000	0.3	23	3,100	400	11	390	1,500	390	390	0.78	390	23,000	-
DTSC Modified Residential SLs (mg/kg)²			31	0.11	NL	16	7.1	NL	0.3	NL	NL	80	1	NL	820	NL	NL	NL	NL	NL	-
SF Construction Worker ESLs (mg/kg)³			50	0.98	3,000	27	51	530,000	2.8	28	14,000	160	44	1,800	86	1,700	1,800	3.5	470	11,000	-
DTSC Background Arsenic Concentration (mg/kg)⁴			-	12	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Notes:

ft bgs = feet below ground surface

---- = Not analyzed for this compound/compound group

mg/kg = milligrams per kilogram

ND>0.274 = None detected greater than the laboratory method detection limit (in mg/kg)

J = a concentration detected between the Method Reporting Limit (MDL) and other reporting limit

NL = Screening level not listed

¹ United States Environmental Protection Agency Regional Screening Levels for soil in residential or commercial/industrial use scenarios (May 2023)

² Department of Toxic Substances Control Human Health Risk Assessment Note 3 Screening Levels for soil in residential or commercial/industrial use scenarios (revised May 2022)

³ San Francisco Regional Water Quality Control Board Environmental Screening Levels = Based on a generic conceptual site model designed for use at most sites for a construction worker / any land use scenario (2019)

⁴ DTSC Background As Concentration = Arsenic screening level from Determination of a Southern California Regional Arsenic Concentration in Soil, California Department of Toxic Substance Control (DTSC), March 2008.

⁵ Thallium screening levels reported for Thallium selenite and Thallium chloride

2019 (Rev. 2)		Summary of Soil ESLs (mg/kg)																
Chemicals	CAS No.	Direct Exposure Human Health Risk Levels (Table S-1)						Terrestrial Habitat Levels (Table S-2)			Leaching to Groundwater Levels (Table S-3)		Gross Contamination Levels (Table S-4)	Odor Nuisance Levels (Table S-5)			Soil Tier 1 ESL	Basis
		Residential: Shallow Soil Exposure		Commercial/Industrial: Shallow Soil Exposure		Construction Worker: Any Land Use/Any Depth Soil Exposure		Significantly Vegetated Area	Minimally Vegetated Area	Drinking Water	Non-drinking Water	Res: Shallow Soil Exposure		Com/Ind: Shallow Soil Exposure	Any Land Use: Any Soil Exposure (CW)			
		Cancer Risk	Non-cancer Hazard	Cancer Risk	Non-cancer Hazard	Cancer Risk	Non-cancer Hazard	Examples: Parkland or single family homes with yards	Examples: High density residential or commercial/industrial areas									
Acenaphthene [PAH]	83-32-9	--	3.6E+03	--	4.5E+04	--	1.0E+04	6.6E+03	4.6E+04	1.2E+01	1.2E+01	1.2E+02	1.0E+03	2.5E+03	2.5E+03	1.2E+01	Leaching	
Acenaphthylene [PAH]	208-96-8	--	--	--	--	--	--	--	--	6.4E+00	6.4E+00	5.9E+01	5.0E+02	1.0E+03	1.0E+03	6.4E+00	Leaching	
Acetone	67-64-1	--	6.1E+04	--	6.7E+05	--	2.7E+05	5.6E+01	5.6E+01	9.2E-01	9.2E-01	1.1E+05	5.0E+02	1.0E+03	1.0E+03	9.2E-01	Leaching	
Aldrin	309-00-2	3.5E-02	2.1E+00	1.5E-01	2.9E+01	1.0E+00	7.4E+00	2.4E-03	1.0E-01	8.4E+00	8.4E+00	8.4E+00	1.0E+03	2.5E+03	2.5E+03	2.4E-03	Terr Habitat	
Anthracene [PAH]	120-12-7	--	1.8E+04	--	2.3E+05	--	5.0E+04	3.1E+00	4.0E+01	1.9E+00	1.9E+00	4.1E+00	5.0E+02	1.0E+03	1.0E+03	1.9E+00	Leaching	
Antimony	7440-36-0	--	1.1E+01	--	1.6E+02	--	5.0E+01	2.5E+01	5.0E+01	--	--	--	--	--	--	1.1E+01	NC-Hazard	
Arsenic	7440-38-2	6.7E-02	2.6E-01	3.1E-01	3.6E+00	2.0E+00	9.8E-01	2.5E+01	5.0E+01	--	--	--	--	--	--	6.7E-02	Canc-Risk	
Barium	7440-39-3	--	1.5E+04	--	2.2E+05	--	3.0E+03	3.9E+02	6.7E+02	--	--	--	--	--	--	3.9E+02	Terr Habitat	
Benzene	71-43-2	3.3E-01	1.1E+01	1.4E+00	4.7E+01	3.3E+01	4.5E+01	6.0E+01	3.1E+02	2.5E-02	2.5E-02	1.9E+03	5.0E+02	1.0E+03	1.0E+03	2.5E-02	Leaching	
Benzo[a]anthracene [PAH]	56-55-3	1.1E+00	--	2.0E+01	--	1.1E+02	--	6.3E-01	1.3E+00	1.0E+01	1.0E+01	1.0E+01	5.0E+02	1.0E+03	1.0E+03	6.3E-01	Terr Habitat	
Benzo[a]pyrene [PAH]	50-32-8	1.1E-01	1.8E+01	2.1E+00	2.2E+02	1.1E+01	1.0E+01	2.5E+01	9.0E+01	5.7E+00	5.7E+00	5.7E+00	5.0E+02	1.0E+03	1.0E+03	1.1E-01	Canc-Risk	
Benzo[b]fluoranthene [PAH]	205-99-2	1.1E+00	--	2.1E+01	--	1.1E+02	--	--	--	5.4E+00	7.5E+01	5.4E+00	5.0E+02	1.0E+03	1.0E+03	1.1E+00	Canc-Risk	
Benzo[g,h,i]perylene [PAH]	191-24-2	--	--	--	--	--	--	8.3E+00	1.7E+01	2.7E+01	2.7E+01	2.5E+00	5.0E+02	1.0E+03	1.0E+03	2.5E+00	Gross Contam	
Benzo[k]fluoranthene [PAH]	207-08-9	1.1E+01	--	2.1E+02	--	9.1E+02	--	9.5E+00	1.9E+01	4.8E+00	3.9E+01	2.8E+00	5.0E+02	1.0E+03	1.0E+03	2.8E+00	Gross Contam	
Beryllium	7440-41-7	1.6E+03	1.6E+01	6.9E+03	2.3E+02	1.8E+02	2.7E+01	5.0E+00	1.0E+01	--	--	--	--	--	--	5.0E+00	Terr Habitat	
1,1-Biphenyl	92-52-4	6.8E+01	4.7E+01	2.9E+02	2.0E+02	1.7E+03	1.8E+02	--	--	4.2E-01	4.2E+00	2.3E+02	5.0E+02	1.0E+03	1.0E+03	4.2E-01	Leaching	
Bis(2-chloroethyl) ether	111-44-4	1.0E-01	--	4.7E-01	--	6.4E+00	--	--	--	3.4E-05	3.1E-02	5.0E+03	5.0E+02	1.0E+03	1.0E+03	3.4E-05	Leaching	
Bis(2-chloro-1-methylethyl) ether	108-60-1	5.0E+00	3.1E+03	2.3E+01	4.7E+04	2.7E+02	1.4E+04	--	--	5.1E-03	8.7E-01	1.0E+03	5.0E+02	1.0E+03	1.0E+03	5.1E-03	Leaching	
Bis(2-ethylhexyl) phthalate	117-81-7	3.9E+01	1.3E+03	1.6E+02	1.6E+04	9.5E+02	3.8E+03	8.0E-01	3.5E+01	1.9E+02	6.4E+02	1.9E+02	5.0E+02	1.0E+03	1.0E+03	8.0E-01	Terr Habitat	
Boron	7440-42-8	--	1.6E+04	--	2.3E+05	--	4.5E+04	1.2E+02	1.2E+02	--	--	--	--	--	--	1.2E+02	Terr Habitat	
Bromodichloromethane	75-27-4	2.9E-01	1.6E+03	1.3E+00	2.3E+04	2.8E+01	7.1E+03	--	--	1.6E-02	1.6E-02	9.3E+02	1.0E+03	2.5E+03	2.5E+03	1.6E-02	Leaching	
Bromoform (Tribromomethane)	75-25-2	1.8E+01	1.6E+03	8.0E+01	2.3E+04	1.2E+03	7.1E+03	--	--	6.9E-01	1.0E+00	9.2E+02	5.0E+02	1.0E+03	1.0E+03	6.9E-01	Leaching	
Bromomethane	74-83-9	--	6.9E+00	--	3.0E+01	--	2.9E+01	--	--	3.6E-01	8.3E-01	3.5E+03	5.0E+02	1.0E+03	1.0E+03	3.6E-01	Leaching	
Cadmium (soil)	7440-43-9	9.1E+02	7.8E+01	4.0E+03	1.1E+03	1.1E+02	5.1E+01	1.9E+00	1.9E+00	--	--	--	--	--	--	1.9E+00	Terr Habitat	
Cadmium (water)	7440-43-9	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	
Carbon tetrachloride	56-23-5	6.2E-01	5.3E+01	2.7E+00	2.5E+02	5.3E+01	2.2E+02	7.3E+00	1.5E+01	7.6E-02	7.6E-02	4.5E+02	5.0E+02	1.0E+03	1.0E+03	7.6E-02	Leaching	
Chlordane	12789-03-6	4.8E-01	3.6E+01	2.2E+00	5.0E+02	1.4E+01	1.3E+02	8.5E-03	8.5E-03	2.3E+01	2.3E+01	2.3E+01	1.0E+03	2.5E+03	2.5E+03	8.5E-03	Terr Habitat	
p-Chloroaniline	106-47-8	3.5E+00	3.1E+02	1.6E+01	4.7E+03	1.2E+02	1.4E+03	2.5E+01	5.0E+01	6.7E-03	9.1E-02	3.0E+03	5.0E+02	1.0E+03	1.0E+03	6.7E-03	Leaching	
Chlorobenzene	108-90-7	--	2.7E+02	--	1.3E+03	--	1.2E+03	7.5E+00	1.5E+01	1.4E+00	1.4E+00	7.5E+02	5.0E+02	1.0E+03	1.0E+03	1.4E+00	Leaching	
Chloroethane	75-00-3	--	1.4E+04	--	5.9E+04	--	5.9E+04	--	--	1.2E+00	1.2E+01	2.1E+03	5.0E+02	1.0E+03	1.0E+03	1.2E+00	Leaching	
Chloroform	67-66-3	3.2E-01	2.0E+02	1.4E+00	1.0E+03	3.4E+01	8.6E+02	4.3E+01	8.5E+01	2.3E-02	2.3E-02	2.6E+03	5.0E+02	1.0E+03	1.0E+03	2.3E-02	Leaching	
Chloromethane	74-87-3	--	1.1E+02	--	4.7E+02	--	4.7E+02	--	--	1.1E+01	1.5E+01	1.3E+03	1.0E+02	5.0E+02	5.0E+02	1.1E+01	Leaching	
2-Chlorophenol	95-57-8	--	3.9E+02	--	5.8E+03	--	1.8E+03	2.0E+00	3.9E+00	1.2E-02	1.2E-01	2.7E+04	1.0E+02	5.0E+02	5.0E+02	1.2E-02	Leaching	
Chromium (total)	7440-47-3	--	--	--	--	--	--	1.6E+02	1.6E+02	--	--	--	--	--	--	1.6E+02	Terr Habitat	
Chromium III	16065-83-1	--	1.2E+05	--	1.8E+06	--	5.3E+05	--	--	--	--	--	--	--	--	1.2E+05	NC-Hazard	
Chromium VI	18540-29-9	3.0E-01	2.3E+02	6.2E+00	3.5E+03	2.8E+00	4.0E+02	1.0E+01	1.0E+01	--	--	--	--	--	--	3.0E-01	Canc-Risk	
Chrysene [PAH]	218-01-9	1.1E+02	--	2.1E+03	--	9.1E+03	--	8.8E+00	1.8E+01	2.2E+00	1.0E+01	2.2E+00	5.0E+02	1.0E+03	1.0E+03	2.2E+00	Leaching	
Cobalt	7440-48-4	4.2E+02	2.3E+01	1.9E+03	3.5E+02	4.9E+01	2.8E+01	5.0E+01	1.0E+02	--	--	--	--	--	--	2.3E+01	NC-Hazard	
Copper	7440-50-8	--	3.1E+03	--	4.7E+04	--	1.4E+04	1.8E+02	3.0E+02	--	--	--	--	--	--	1.8E+02	Terr Habitat	
Cyanide	57-12-5	--	5.5E+00	--	2.5E+01	--	2.2E+01	1.1E-01	1.1E-01	3.4E-03	3.4E-03	1.9E+04	1.0E+02	5.0E+02	5.0E+02	3.4E-03	Leaching	
Dibenz[a,h]anthracene [PAH]	53-70-3	1.1E-01	--	2.1E+00	--	1.1E+01	--	--	--	2.9E+01	3.9E+02	2.9E+01	5.0E+02	1.0E+03	1.0E+03	1.1E-01	Canc-Risk	
Dibromochloromethane	124-48-1	8.3E+00	1.6E+03	3.9E+01	2.3E+04	2.9E+02	7.1E+03	--	--	3.5E-01	1.1E+01	8.0E+02	1.0E+02	5.0E+02	5.0E+02	3.5E-01	Leaching	
1,2-dibromo-3-chloropropane	96-12-8	4.4E-03	4.8E+00	5.9E-02	2.6E+01	1.1E+00	2.0E+01	--	--	5.9E-04	5.9E-04	9.9E+02	5.0E+02	1.0E+03	1.0E+03	5.9E-04	Leaching	
1,2-Dibromoethane	106-93-4	3.6E-02	7.2E+00	1.6E-01	3.0E+01	3.3E+00	3.0E+01	--	--	5.3E-04	1.9E-03	1.3E+03	5.0E+02	1.0E+03	1.0E+03	5.3E-04	Leaching	

2019 (Rev. 2)		Summary of Soil ESLs (mg/kg)																
Chemicals	CAS No.	Direct Exposure Human Health Risk Levels (Table S-1)						Terrestrial Habitat Levels (Table S-2)			Leaching to Groundwater Levels (Table S-3)		Gross Contamination Levels (Table S-4)	Odor Nuisance Levels (Table S-5)			Soil Tier 1 ESL	Basis
		Residential: Shallow Soil Exposure		Commercial/Industrial: Shallow Soil Exposure		Construction Worker: Any Land Use/Any Depth Soil Exposure		Significantly Vegetated Area	Minimally Vegetated Area	Drinking Water	Non-drinking Water	Res: Shallow Soil Exposure		Com/Ind: Shallow Soil Exposure	Any Land Use: Any Soil Exposure (CW)			
		Cancer Risk	Non-cancer Hazard	Cancer Risk	Non-cancer Hazard	Cancer Risk	Non-cancer Hazard	Examples: Parkland or single family homes with yards	Examples: High density residential or commercial/industrial areas									
1,2-Dichlorobenzene	95-50-1	--	1.8E+03	--	9.4E+03	--	7.8E+03	4.3E+00	8.5E+00	1.0E+00	1.0E+00	3.8E+02	1.0E+03	2.5E+03	2.5E+03	1.0E+00	Leaching	
1,3-Dichlorobenzene	541-73-1	--	--	--	--	--	--	6.0E+00	1.2E+01	7.4E+00	7.4E+00	6.1E+02	1.0E+02	5.0E+02	5.0E+02	6.0E+00	Terr Habitat	
1,4-Dichlorobenzene	106-46-7	2.6E+00	3.4E+03	1.2E+01	2.6E+04	2.8E+02	1.5E+04	4.5E+00	9.0E+00	2.0E-01	2.0E-01	1.9E+02	5.0E+02	1.0E+03	1.0E+03	2.0E-01	Leaching	
3,3-Dichlorobenzidine	91-94-1	5.8E-01	--	2.7E+00	--	2.0E+01	--	--	--	2.5E-02	1.3E+02	6.0E+01	5.0E+02	1.0E+03	1.0E+03	2.5E-02	Leaching	
DDD	72-54-8	2.7E+00	--	1.2E+01	--	8.1E+01	--	8.5E+00	1.7E+01	6.5E+01	6.5E+01	6.5E+01	5.0E+02	1.0E+03	1.0E+03	2.7E+00	Canc-Risk	
DDE	72-55-9	1.8E+00	--	8.3E+00	--	5.7E+01	--	3.3E-01	6.5E-01	2.9E+01	2.9E+01	2.9E+01	5.0E+02	1.0E+03	1.0E+03	3.3E-01	Terr Habitat	
DDT	50-29-3	1.9E+00	3.7E+01	8.5E+00	5.2E+02	5.7E+01	1.4E+02	1.1E-03	7.8E+00	5.6E+00	5.6E+00	5.6E+00	5.0E+02	1.0E+03	1.0E+03	1.1E-03	Terr Habitat	
1,1-Dichloroethane	75-34-3	3.6E+00	1.6E+04	1.6E+01	2.3E+05	3.7E+02	7.1E+04	1.1E+01	2.1E+01	2.0E-01	3.1E-01	1.7E+03	5.0E+02	1.0E+03	1.0E+03	2.0E-01	Leaching	
1,2-Dichloroethane	107-06-2	4.7E-01	3.2E+01	2.1E+00	1.4E+02	4.5E+01	1.3E+02	2.9E+01	2.9E+01	7.0E-03	3.1E-02	3.0E+03	1.0E+02	5.0E+02	5.0E+02	7.0E-03	Leaching	
1,1-Dichloroethene	75-35-4	--	8.3E+01	--	3.5E+02	--	3.5E+02	4.3E+01	1.3E+02	5.4E-01	4.2E+00	1.2E+03	5.0E+02	1.0E+03	1.0E+03	5.4E-01	Leaching	
cis-1,2-Dichloroethene	156-59-2	--	1.9E+01	--	8.5E+01	--	7.8E+01	8.4E+01	9.4E+02	1.9E-01	1.6E+00	2.4E+03	1.0E+02	5.0E+02	5.0E+02	1.9E-01	Leaching	
trans-1,2-Dichloroethene	156-60-5	--	1.3E+02	--	6.0E+02	--	5.7E+02	8.4E+01	9.4E+02	6.5E-01	1.4E+01	1.9E+03	5.0E+02	1.0E+03	1.0E+03	6.5E-01	Leaching	
2,4-Dichlorophenol	120-83-2	--	2.3E+02	--	3.5E+03	--	1.1E+03	2.1E+00	--	7.5E-03	7.5E-02	5.6E+03	5.0E+02	1.0E+03	1.0E+03	7.5E-03	Leaching	
1,2-Dichloropropane	78-87-5	1.0E+00	1.6E+01	4.4E+00	6.6E+01	9.9E+01	6.6E+01	3.1E+01	6.3E+01	6.5E-02	6.5E-02	1.4E+03	1.0E+02	5.0E+02	5.0E+02	6.5E-02	Leaching	
1,3-Dichloropropene	542-75-6	5.7E-01	7.2E+01	2.5E+00	3.1E+02	5.3E+01	3.0E+02	3.1E+01	6.3E+01	1.7E-02	4.0E-02	1.6E+03	5.0E+02	1.0E+03	1.0E+03	1.7E-02	Leaching	
Dieldrin	60-57-1	3.7E-02	3.5E+00	1.6E-01	4.8E+01	1.1E+00	1.2E+01	9.6E-04	1.1E-01	4.6E-04	6.3E-03	2.4E+01	5.0E+02	1.0E+03	1.0E+03	4.6E-04	Leaching	
Diethyl phthalate	84-66-2	--	5.1E+04	--	6.6E+05	--	1.5E+05	1.3E+01	2.7E+01	2.5E-02	2.5E-02	7.7E+02	5.0E+02	1.0E+03	1.0E+03	2.5E-02	Leaching	
Dimethyl phthalate	131-11-3	--	--	--	--	--	--	2.1E+01	4.2E+01	3.5E-02	3.5E-02	4.7E+03	5.0E+02	1.0E+03	1.0E+03	3.5E-02	Leaching	
2,4-Dimethylphenol	105-67-9	--	1.6E+03	--	2.3E+04	--	7.1E+03	--	--	8.1E+00	8.9E+00	2.4E+04	1.0E+02	5.0E+02	5.0E+02	8.1E+00	Leaching	
2,4-Dinitrophenol	51-28-5	--	1.6E+02	--	2.3E+03	--	7.1E+02	--	--	3.0E+00	5.7E+00	8.0E+03	5.0E+02	1.0E+03	1.0E+03	3.0E+00	Leaching	
2,4-Dinitrotoluene	121-14-2	2.2E+00	1.6E+02	1.1E+01	2.3E+03	7.9E+01	7.1E+02	--	--	2.3E-02	1.1E+01	7.2E+02	5.0E+02	1.0E+03	1.0E+03	2.3E-02	Leaching	
1,4-Dioxane	123-91-1	4.7E+00	8.1E+02	2.2E+01	4.5E+03	2.1E+02	3.4E+03	1.8E+00	1.8E+00	1.7E-04	8.4E-01	1.2E+05	5.0E+02	1.0E+03	1.0E+03	1.7E-04	Leaching	
Dioxin (2,3,7,8-TCDD)	1746-01-6	4.8E-06	5.1E-05	2.2E-05	7.2E-04	1.5E-04	2.0E-04	1.3E-05	9.9E-05	3.0E-01	3.0E-01	3.0E-01	5.0E+02	1.0E+03	1.0E+03	4.8E-06	Canc-Risk	
Endosulfan	115-29-7	--	4.2E+02	--	5.8E+03	--	1.5E+03	2.3E-02	3.8E-01	9.8E-03	9.8E-03	1.3E+01	5.0E+02	1.0E+03	1.0E+03	9.8E-03	Leaching	
Endrin	72-20-8	--	2.1E+01	--	2.9E+02	--	7.4E+01	1.1E-03	1.1E-03	7.6E-03	7.6E-03	3.0E+01	5.0E+02	1.0E+03	1.0E+03	1.1E-03	Terr Habitat	
Ethylbenzene	100-41-4	5.9E+00	3.4E+03	2.6E+01	2.1E+04	5.4E+02	1.5E+04	9.0E+01	4.3E+02	4.3E-01	4.3E-01	4.9E+02	5.0E+02	1.0E+03	1.0E+03	4.3E-01	Leaching	
Fluoranthene [PAH]	206-44-0	--	2.4E+03	--	3.0E+04	--	6.7E+03	6.9E-01	1.2E+05	8.6E+01	8.6E+01	8.6E+01	5.0E+02	1.0E+03	1.0E+03	6.9E-01	Terr Habitat	
Fluorene [PAH]	86-73-7	--	2.4E+03	--	3.0E+04	--	6.7E+03	--	--	6.0E+00	6.0E+00	9.4E+01	5.0E+02	1.0E+03	1.0E+03	6.0E+00	Leaching	
Heptachlor	76-44-8	1.2E-01	3.5E+01	5.3E-01	4.8E+02	3.7E+00	1.2E+02	2.5E-01	5.0E-01	4.4E+01	4.4E+01	4.4E+01	1.0E+03	2.5E+03	2.5E+03	1.2E-01	Canc-Risk	
Heptachlor epoxide	1024-57-3	6.2E-02	9.1E-01	2.8E-01	1.3E+01	1.9E+00	3.2E+00	--	--	1.8E-04	6.0E-03	1.2E+01	1.0E+03	2.5E+03	2.5E+03	1.8E-04	Leaching	
Hexachlorobenzene	118-74-1	1.8E-01	5.6E+01	7.8E-01	7.7E+02	7.7E+00	2.0E+02	1.3E+02	2.5E+02	8.0E-04	8.2E-02	2.3E-01	5.0E+02	1.0E+03	1.0E+03	8.0E-04	Leaching	
Hexachlorobutadiene	87-68-3	1.2E+00	7.8E+01	5.3E+00	1.2E+03	1.0E+02	3.5E+02	--	--	2.8E-02	6.2E-02	1.7E+01	5.0E+02	1.0E+03	1.0E+03	2.8E-02	Leaching	
g-Hexachlorocyclohexane (Lindane)	58-89-9	5.5E-01	2.1E+01	2.5E+00	2.9E+02	1.6E+01	7.4E+01	7.4E+00	1.5E+01	7.4E-03	7.4E-03	1.2E+02	5.0E+02	1.0E+03	1.0E+03	7.4E-03	Leaching	
Hexachloroethane	67-72-1	1.8E+00	3.8E+01	7.8E+00	3.7E+02	1.3E+02	1.2E+02	--	--	1.9E-02	9.2E-02	6.7E+01	5.0E+02	1.0E+03	1.0E+03	1.9E-02	Leaching	
Indeno[1,2,3-c]pyrene [PAH]	193-39-5	1.1E+00	--	2.1E+01	--	1.1E+02	--	4.8E-01	9.5E-01	1.6E+01	3.2E+01	2.3E+00	5.0E+02	1.0E+03	1.0E+03	4.8E-01	Terr Habitat	
Lead	7439-92-1	8.2E+01	8.0E+01	3.8E+02	3.2E+02	2.7E+03	1.6E+02	3.2E+01	3.2E+01	--	--	--	--	--	--	3.2E+01	Terr Habitat	
Mercury (elemental)	7439-97-6	--	1.3E+01	--	1.9E+02	--	4.4E+01	1.5E+01	2.0E+01	--	--	--	5.0E+02	1.0E+03	1.0E+03	1.3E+01	NC-Hazard	
Methoxychlor	72-43-5	--	3.5E+02	--	4.8E+03	--	1.2E+03	1.3E-01	4.1E+03	1.3E-02	1.3E-02	1.6E+01	5.0E+02	1.0E+03	1.0E+03	1.3E-02	Leaching	
Methylene chloride	75-09-2	1.9E+00	3.1E+02	2.5E+01	2.5E+03	4.9E+02	1.4E+03	9.8E-01	2.0E+00	1.2E-01	1.9E-01	3.3E+03	5.0E+02	1.0E+03	1.0E+03	1.2E-01	Leaching	
Methyl ethyl ketone	78-93-3	--	2.7E+04	--	2.0E+05	--	1.2E+05	4.4E+01	8.8E+01	6.1E+00	1.5E+01	2.8E+04	5.0E+02	1.0E+03	1.0E+03	6.1E+00	Leaching	
Methyl isobutyl ketone	108-10-1	--	3.4E+04	--	1.4E+05	--	1.4E+05	--	--	3.6E-01	5.1E-01	3.4E+03	1.0E+02	5.0E+02	5.0E+02	3.6E-01	Leaching	
Methyl mercury	22967-92-6	--	6.3E+00	--	8.2E+01	--	1.9E+01	3.4E-02	3.4E-02	--	--	--	1.0E+02	5.0E+02	5.0E+02	3.4E-02	Terr Habitat	
2-Methylnaphthalene	91-57-6	--	2.4E+02	--	3.0E+03	--	6.7E+02	--	--	8.8E-01	8.8E-01	3.8E+02	5.0E+02	1.0E+03	1.0E+03	8.8E-01	Leaching	
Methyl tertiary butyl ether (MTBE)	1634-04-4	4.7E+01	1.6E+04	2.1E+02	6.6E+04	4.1E+03	6.5E+04	3.1E+01	6.3E+01	2.8E-02	2.5E+00	9.0E+03	1.0E+02	5.0E+02	5.0E+02	2.8E-02	Leaching	

2019 (Rev. 2) Summary of Soil ESLs (mg/kg)

Chemicals	CAS No.	Direct Exposure Human Health Risk Levels (Table S-1)						Terrestrial Habitat Levels (Table S-2)		Leaching to Groundwater Levels (Table S-3)		Gross Contamination Levels (Table S-4)	Odor Nuisance Levels (Table S-5)			Soil Tier 1 ESL	Basis
		Residential: Shallow Soil Exposure		Commercial/Industrial: Shallow Soil Exposure		Construction Worker: Any Land Use/Any Depth Soil Exposure		Significantly Vegetated Area	Minimally Vegetated Area	Drinking Water	Non-drinking Water		Res: Shallow Soil Exposure	Com/Ind: Shallow Soil Exposure	Any Land Use: Any Soil Exposure (CW)		
		Cancer Risk	Non-cancer Hazard	Cancer Risk	Non-cancer Hazard	Cancer Risk	Non-cancer Hazard	Examples: Parkland or single family homes with yards	Examples: High density residential or commercial/ industrial areas								
Molybdenum	7439-98-7	--	3.9E+02	--	5.8E+03	--	1.8E+03	6.9E+00	4.0E+01	--	--	--	--	--	6.9E+00	Terr Habitat	
Naphthalene [PAH]	91-20-3	3.8E+00	1.3E+02	1.7E+01	5.8E+02	4.0E+02	5.0E+02	7.5E-01	2.8E+01	4.2E-02	1.2E+00	2.8E+02	5.0E+02	1.0E+03	1.0E+03	4.2E-02	Leaching
Nickel	7440-02-0	1.5E+04	8.2E+02	6.4E+04	1.1E+04	1.7E+03	8.6E+01	1.3E+02	3.4E+02	--	--	--	--	--	8.6E+01	NC-Hazard	
Pentachlorophenol	87-86-5	1.0E+00	2.5E+02	4.0E+00	2.8E+03	2.0E+01	5.6E+02	1.3E-02	3.9E+01	9.8E-02	7.7E-01	5.1E+01	5.0E+02	1.0E+03	1.0E+03	1.3E-02	Terr Habitat
Perchlorate	7790-98-9	--	5.5E+01	--	8.2E+02	--	2.5E+02	--	--	--	--	--	--	--	5.5E+01	NC-Hazard	
Petroleum - Gasoline	--	--	4.3E+02	--	2.0E+03	--	1.8E+03	1.2E+02	1.2E+02	1.1E+03	4.9E+03	1.0E+03	1.0E+02	5.0E+02	5.0E+02	1.0E+02	Odor/Nuis
Petroleum - Stoddard Solvent	--	--	2.6E+02	--	1.4E+03	--	1.1E+03	2.6E+02	2.6E+02	1.3E+03	8.0E+03	2.3E+03	1.0E+02	5.0E+02	5.0E+02	1.0E+02	Odor/Nuis
Petroleum - Jet Fuel	--	--	2.7E+02	--	1.4E+03	--	1.1E+03	2.6E+02	2.6E+02	1.3E+03	8.0E+03	2.3E+03	1.0E+02	5.0E+02	5.0E+02	1.0E+02	Odor/Nuis
Petroleum - Diesel	--	--	2.6E+02	--	1.2E+03	--	1.1E+03	2.6E+02	2.6E+02	1.1E+03	7.3E+03	2.3E+03	5.0E+02	1.0E+03	1.0E+03	2.6E+02	NC-Hazard
Petroleum - HOPs	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--	--
Petroleum - Motor Oil	--	--	1.2E+04	--	1.8E+05	--	5.4E+04	1.6E+03	1.6E+03	--	--	5.1E+03	--	--	--	1.6E+03	Terr Habitat
Phenanthrene [PAH]	85-01-8	--	--	--	--	--	--	7.8E+00	1.6E+01	1.1E+01	1.1E+01	6.9E+01	5.0E+02	1.0E+03	1.0E+03	7.8E+00	Terr Habitat
Phenol	108-95-2	--	2.3E+04	--	3.5E+05	--	9.8E+04	9.4E+00	9.4E+00	1.6E-01	1.8E+01	1.0E+05	5.0E+02	1.0E+03	1.0E+03	1.6E-01	Leaching
Polychlorinated biphenyls (PCBs)	1336-36-3	2.3E-01	--	9.4E-01	--	5.5E+00	--	1.1E+00	1.1E+00	3.3E+02	3.3E+02	3.3E+02	5.0E+02	1.0E+03	1.0E+03	2.3E-01	Canc-Risk
Pyrene [PAH]	129-00-0	--	1.8E+03	--	2.3E+04	--	5.0E+03	4.7E+03	9.9E+04	4.5E+01	4.5E+01	4.5E+01	5.0E+02	1.0E+03	1.0E+03	4.5E+01	Leaching
Selenium	7782-49-2	--	3.9E+02	--	5.8E+03	--	1.7E+03	2.4E+00	5.5E+00	--	--	--	--	--	2.4E+00	Terr Habitat	
Silver	7440-22-4	--	3.9E+02	--	5.8E+03	--	1.8E+03	2.5E+01	5.0E+01	--	--	--	--	--	2.5E+01	Terr Habitat	
Styrene	100-42-5	--	5.7E+03	--	3.3E+04	--	2.5E+04	2.2E+01	4.3E+01	9.2E-01	1.0E+01	8.7E+02	5.0E+02	1.0E+03	1.0E+03	9.2E-01	Leaching
tert-Butyl alcohol	75-65-0	--	--	--	--	--	--	--	--	7.5E-02	1.1E+02	3.2E+05	1.0E+02	5.0E+02	5.0E+02	7.5E-02	Leaching
1,1,1,2-Tetrachloroethane	630-20-6	2.0E+00	2.3E+03	8.9E+00	3.5E+04	1.9E+02	1.1E+04	--	--	1.7E-02	1.1E-01	7.0E+02	1.0E+02	5.0E+02	5.0E+02	1.7E-02	Leaching
1,1,2,2-Tetrachloroethane	79-34-5	6.1E-01	1.6E+03	2.7E+00	2.3E+04	4.9E+01	7.1E+03	--	--	1.8E-02	5.8E-02	1.9E+03	5.0E+02	1.0E+03	1.0E+03	1.8E-02	Leaching
Tetrachloroethene	127-18-4	5.9E-01	8.2E+01	2.7E+00	3.9E+02	3.3E+01	3.5E+02	4.5E+00	4.3E+01	8.0E-02	8.0E-02	1.7E+02	5.0E+02	1.0E+03	1.0E+03	8.0E-02	Leaching
Thallium	7440-28-0	--	7.8E-01	--	1.2E+01	--	3.5E+00	1.8E+00	4.5E+00	--	--	--	--	--	7.8E-01	NC-Hazard	
Toluene	108-88-3	--	1.1E+03	--	5.3E+03	--	4.7E+03	1.4E+02	6.6E+02	3.2E+00	1.0E+01	8.1E+02	5.0E+02	1.0E+03	1.0E+03	3.2E+00	Leaching
Toxaphene	8001-35-2	5.1E-01	--	2.2E+00	--	1.4E+01	--	--	--	2.5E+02	2.5E+02	2.5E+02	5.0E+02	1.0E+03	1.0E+03	5.1E-01	Canc-Risk
1,2,4-Trichlorobenzene	120-82-1	2.4E+01	5.9E+01	1.1E+02	2.6E+02	8.5E+02	2.4E+02	1.6E+01	3.0E+01	1.2E+00	6.0E+00	4.2E+02	5.0E+02	1.0E+03	1.0E+03	1.2E+00	Leaching
1,1,1-Trichloroethane	71-55-6	--	1.7E+03	--	7.3E+03	--	7.2E+03	2.2E+01	4.4E+01	7.0E+00	7.0E+00	6.5E+02	5.0E+02	1.0E+03	1.0E+03	7.0E+00	Leaching
1,1,2-Trichloroethane	79-00-5	1.2E+00	1.5E+00	5.1E+00	6.4E+00	1.1E+02	6.3E+00	1.0E+02	2.0E+02	7.6E-02	7.9E-02	2.2E+03	1.0E+02	5.0E+02	5.0E+02	7.6E-02	Leaching
Trichloroethene	79-01-6	9.5E-01	4.2E+00	6.1E+00	1.9E+01	1.3E+02	1.8E+01	8.1E+00	2.5E+02	8.5E-02	8.5E-02	7.0E+02	5.0E+02	1.0E+03	1.0E+03	8.5E-02	Leaching
2,4,5-Trichlorophenol	95-95-4	--	7.8E+03	--	1.2E+05	--	3.5E+04	5.5E+00	1.0E+01	2.9E+00	2.9E+00	1.2E+04	5.0E+02	1.0E+03	1.0E+03	2.9E+00	Leaching
2,4,6-Trichlorophenol	88-06-2	9.9E+00	7.8E+01	4.7E+01	1.2E+03	3.5E+02	3.5E+02	5.5E+00	1.0E+01	4.0E-02	3.1E+01	1.9E+03	1.0E+02	5.0E+02	5.0E+02	4.0E-02	Leaching
1,2,3-Trichloropropane	96-18-4	2.3E-02	4.9E+00	1.1E-01	2.1E+01	8.3E-01	2.0E+01	--	--	1.1E-04	1.3E-04	1.4E+03	1.0E+02	5.0E+02	5.0E+02	1.1E-04	Leaching
Vanadium	7440-62-2	--	3.9E+02	--	5.8E+03	--	4.7E+02	1.8E+01	1.8E+01	--	--	--	--	--	1.8E+01	Terr Habitat	
Vinyl chloride	75-01-4	8.3E-03	7.0E+01	1.5E-01	3.8E+02	3.4E+00	3.0E+02	4.3E+00	8.5E+00	1.5E-03	1.5E-03	3.9E+03	5.0E+02	1.0E+03	1.0E+03	1.5E-03	Leaching
Xylenes	1330-20-7	--	5.8E+02	--	2.5E+03	--	2.4E+03	5.5E+01	2.1E+02	2.1E+00	1.0E+01	2.7E+02	5.0E+02	1.0E+03	1.0E+03	2.1E+00	Leaching
Zinc	7440-66-6	--	2.3E+04	--	3.5E+05	--	1.1E+05	3.4E+02	3.4E+02	--	--	--	--	--	3.4E+02	Terr Habitat	

Notes:
 - Cadmium (Water): Groundwater levels do not apply to cadmium in soil so no soil level are listed.
 - Petroleum - HOPs: Soil ESLs have not been developed at this time.

Abbreviations:
 Canc - Cancer
 Com/Ind - Commercial/Industrial
 Contam - Contamination
 CW - Construction Worker
 DDD - Dichlorodiphenyldichloroethane

2019 (Rev. 2)	Summary of Soil ESLs (mg/kg)												
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Chemicals	CAS No.	Direct Exposure Human Health Risk Levels (Table S-1)						Terrestrial Habitat Levels (Table S-2)		Leaching to Groundwater Levels (Table S-3)		Gross Contamination Levels (Table S-4)	Odor Nuisance Levels (Table S-5)			Soil Tier 1 ESL	Basis
		Residential: Shallow Soil Exposure		Commerical/ Industrial: Shallow Soil Exposure		Construction Worker: Any Land Use/ Any Depth Soil Exposure		Significantly Vegetated Area	Minimally Vegetated Area	Drinking Water	Non-drinking Water		Res: Shallow Soil Exposure	Com/Ind: Shallow Soil Exposure	Any Land Use: Any Soil Exposure (CW)		
		Cancer Risk	Non-cancer Hazard	Cancer Risk	Non-cancer Hazard	Cancer Risk	Non-cancer Hazard	Cancer Risk	Non-cancer Hazard				Examples: Parkland or single family homes with yards	Examples: High density residential or commercial/ industrial areas	Res: Shallow Soil Exposure		

DDE - Dichlorodiphenyldichloroethene
 DDT - Dichlorodiphenyltrichloroethane
 Exp - Exposure
 HOPs - Hydrocarbon Oxidation Products (biodegradation metabolites and photo-oxidation products of petroleum hydrocarbons). See User's Guide Chapter 4 for further information.
 NC - Noncancer
 Odor/Nuis - Odor Nuisance
 PAH - Polycyclic aromatic hydrocarbon
 Res - Residential
 TCDD - Tetrachlorodibenzodioxin
 Terr - Terrestrial

November 3, 2023

Project No. 13226.005

Meridian Park West, LLC
1156 North Mountain Avenue
Upland, California 91786

Attention: Timothy Reeves / Adam Collier

Subject: **PCB Issues**
Meridian – West Campus Upper Plateau
Riverside, California 92508

Upon your request and in connection with the comments received on the Draft Environmental Impact Report, Leighton Consulting, Inc. (Leighton) is presenting the following supplemental summary information regarding environmental assessments associated with the subject Site and nearby areas (see Site Location Map – **Figure 1**).

Polychlorinated Biphenyls (PCB) Issues

Further clarifications on PCB sampling issues have been provided by Vista Environmental Consulting (Vista), a subconsultant which completed such work on the Specific Plan site. This additional information is provided in a letter from Vista found in **Attachment A**.

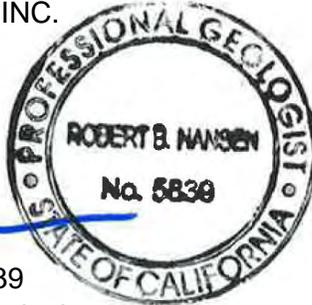
References

Leighton (Leighton Consulting, Inc.), 2022, Hazardous Material (PCB/ Treated Wood Waste) Investigation Report, Meridian – West Campus Upper Plateau, Riverside, CA 92508, dated May 5, 2022 (report contains Hazardous Materials Investigation Results Report, dated April 26, 2022 by Vista Environmental Consulting).

OSHA, 2023, OSHA Salt Lake Technical Center, Guideline for Developing Sampling and Analytical Methods with Validation Requirements, Version 1.0, dated April 28th, 2023.

Should you have any questions regarding this supplemental report, please contact the undersigned at (909) 527-8782.

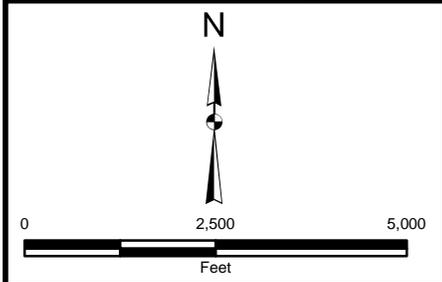
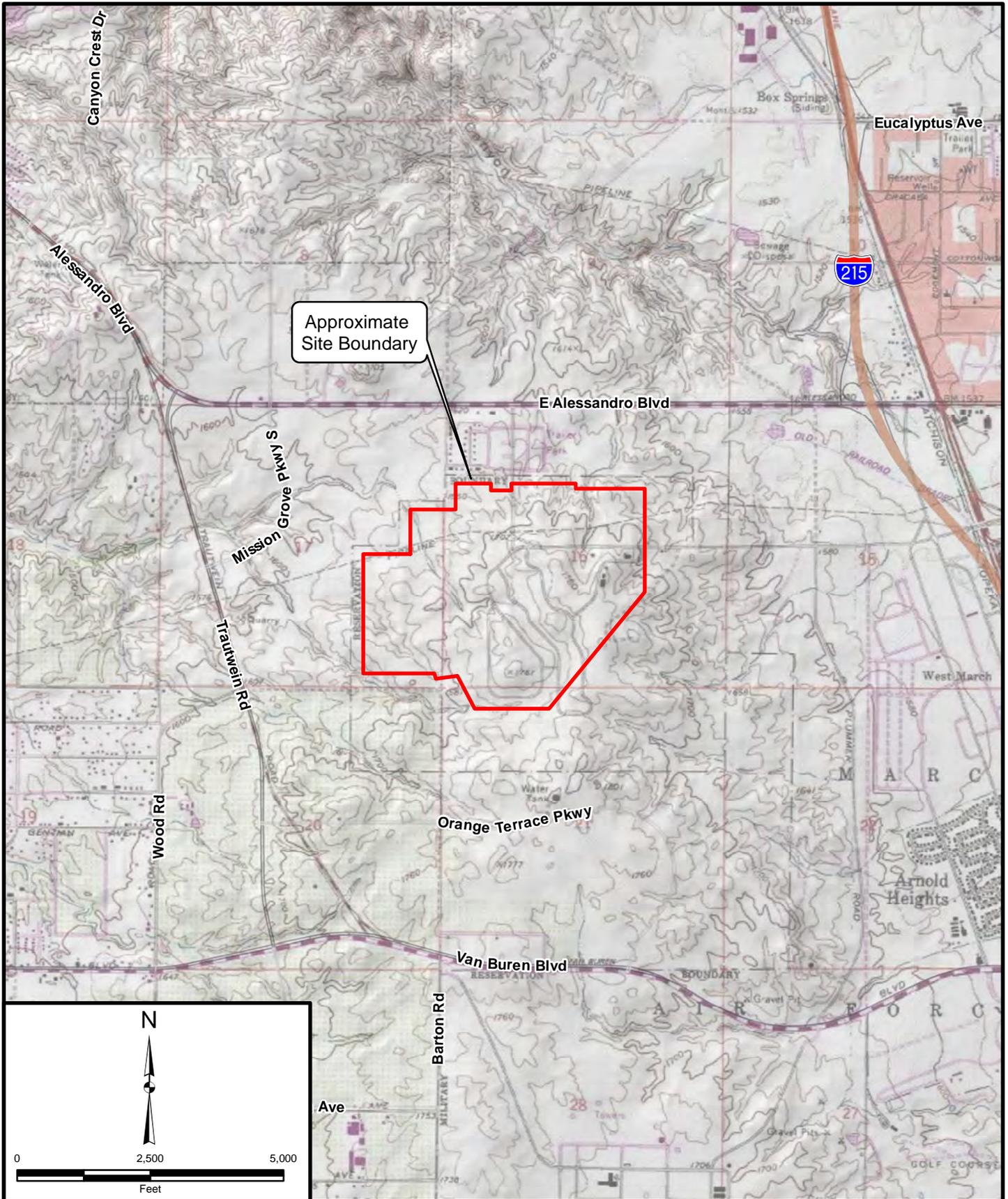
Respectfully submitted,
LEIGHTON CONSULTING, INC.



Robert B. Hansen, PG, #5839
Associate Environmental Geologist

Attachments: Figure 1 - Site Location Map
Attachment A - Vista Environmental Consulting Letter

Distribution: Addressee



Project: 13226.003	Eng/Geol: RBH
Scale: 1" = 2,500'	Date: May 2022
Basemap: ESRI ArcGIS Online 2022	

SITE LOCATION MAP

Meridian-West Campus, Upper Plateau
Riverside, California

FIGURE 1



ATTACHMENT A
VISTA ENVIRONMENTAL CONSULTING LETTER

August 28, 2023

Robert Hansen
Associate Environmental Geologist
Leighton Consulting, Inc.
10532 Acacia Street, Suite B-6
Rancho Cucamonga, CA 91730

**Subject: PCB Sampling – Response to Public Comments
March Air Force Base, Former Ordnance Storage Area / Weapons Storage
Area, Riverside, CA.**

Per your request, the following further clarification is provided in response to your email inquiry regarding Polychlorinated Biphenyl (PCB) Sampling.

Vista has previously provided the following response to a public comments on PCB sampling:

While Mr. Zhao's comments concerning the collection of concrete samples and even soil samples beneath the concrete would be correct, if there were PCBs identified at the site, the standard he is referring to addresses situations where it is known or expected that PCBs were present, such as when you are assessing the leakage of oil from a transformer that had been previously tested and determined to contain PCBs. In fact, while it is true that some fraction of PCBs would leach into the concrete, PCBs are very large molecules, and a significant fraction of any PCBs would remain on the surface, with the visible staining. Wipe sampling is an accurate method for determining if PCBs are present. Had any detectable levels of PCBs been identified in any of the wipe samples that were collected, Vista would have recommended follow-on delineation sampling of the concrete or other substrate, but the complete absence of PCBs in the wipe samples collected indicated that this step was unnecessary.

As a supplement to our above comments, the following is further provided:

The OSHA Guidelines for Developing Sampling and Analytical Methods outlines the types of sampling recommended for determining the potential for exposure to chemical hazards. Bulk sampling isn't even recommended, but rather air sampling and surface (wipe) sampling are the two recommended methods. Bulk sampling usually isn't recommended until there is a known or suspected exposure, and bulk sampling is the recommended follow-up testing (OSHA, 2023 – page 5). Industry-wide, the sole usual exception to this guideline is asbestos.

The public comments, as well as the guidelines for PCB testing that were submitted as concerns in the public comments, are for instances where there is a reason to anticipate that PCBs have been released, such as visible indications or the known release of suspect PCB-containing dielectric fluid known to or suspected of containing PCBs at 50 mg/kg or greater. There was no such issue at the site. In fact, we collected a total of 6 wipe samples, 3 transformer oil samples, three electrical wrap samples and three capacitor samples, and

of all those samples, one transformer had a hit for Aroclors at 1.5 mg/kg, and all of the other 14 samples of various types indicated no PCBs at all (Leighton, 2022)

Simply put, there was no reason to collect bulk samples of concrete pads. In the event that there had been ANY PCBs in the various materials that we wipe sampled, there would have been at least some indication in the wipe samples collected from the subject surface, and even the OSHA guideline would have recommended not performing follow-on sampling, based on the lack of PCBs in the various testings performed. The testing requirements set forth in 40 CFR 761 would not apply, based on the fact that there was not even one sample indicating PCBs at a concentration of 50 mg/kg or greater.

The below public comment was also provided:

Unlike releases of motor oils that are relatively easy to identify in soils based on visual staining and odors, PCB-containing oils from transformers are typically clear to yellow in color and odorless. In other words, a release of transformer oil cannot always easily be identified based on inspection of the surrounding soils, particularly if the release occurred years ago.

Our response to the above comment is as follows:

Regarding the color of PCBs, dielectric fluids are almost never clear. Rather, 95%+ of PCB-containing dielectric fluids are either yellow (Monsanto products) or Amber (Pyranol products). If/when released due to transformer or capacitor failure, the fluids tend to be darker, ranging from brown to black, due to thermal effects of overheating, the most common failure that causes uncontrolled releases. As with the issue of wipe sampling versus bulk sampling when dealing with concrete surfaces, the question/comment presupposes that there is a PCB Product present that contains/contained PCBs at concentrations of 50 mg/kg or greater. Sampling was performed of transformers, capacitors and other potential PCB-containing products and surfaces, and as noted above, other than one sample of transformer oil that indicated the presence of an Aroclor at 1.5 mg/kg, every other one of 14 samples collected for PCB content determination indicated that there was no PCBs present at all.

References

Leighton (Leighton Consulting, Inc.), 2022, Hazardous Material (PCB/ Treated Wood Waste) Investigation Report, Meridian – West Campus Upper Plateau, Riverside, CA 92508, dated May 5, 2022. (report contains Hazardous Materials Investigation Results Report, dated April 26, 2022 by Vista Environmental Consulting)

OSHA, 2023, OSHA Salt Lake Technical Center, Guideline for Developing Sampling and Analytical Methods with Validation Requirements, Version 1.0, dated April 28th, 2023.

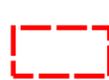
If you should have any questions regarding this matter, or if I can be of further assistance, please feel free to contact me on my mobile at 714.746.7644.

Respectfully submitted,
Vista Environmental Consulting

A handwritten signature in black ink, appearing to read "Yvan A. Schmidt". The signature is fluid and cursive, with a long horizontal stroke at the end.

Yvan A. Schmidt
Senior Project Manager

Legend

 Estimated approximate location of former area of investigation by USAF.

1. Weapons Storage Area

- a. Area 22
- b. Ordnance Storage Area

2. Landfill No. 5

- a. Area 3
- b. IRP Site 3
- c. West March AFFF Area 3

3. Suspected TNT Rinsate Ponds

- a. Area 23
- b. Small subset area near Landfill No. 5/
- c. IRP Site 3 - see MMRP figure

4. Munitions Residual Burial Sites

- a. Area 20
- b. IRP Site 25

5. Demolition Area

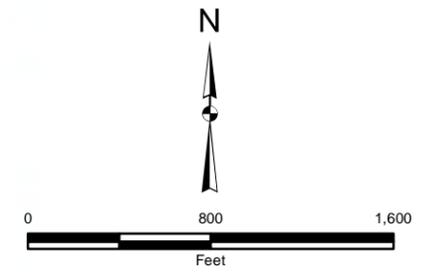
- a. Area 21

6. Construction Rubble Burial Site

- a. Site 30

LAND USE LEGEND

MIXED USE:	42.22 AC
BUSINESS PARK:	65.32 AC
INDUSTRIAL:	143.31 AC
STREETS:	37.91 AC
PUBLIC FACILITIES:	2.84 AC
PARKS/RECREATION/OPEN SPACE: (P/R/OS)	78.00 AC
NET DEVELOPABLE:	369.60 AC
EXISTING EMWD TANK	2.87 AC
CONSERVATION EASEMENT:	445.43 AC
GROSS ACREAGE:	817.90 AC



Scale: 1" = 800' Date: November 2023

Base Map: Site Plan by Dudek.

SITE PLAN

FIGURE 1

Robert B. Hansen, PG

Associate Environmental Geologist

Education

- BS, Geological Sciences, University of Southern California, Los Angeles, CA

Registrations/Certifications

- CA Professional Geologist – 5839
- Certified Hazardous Materials Manager, UCI Extension
- CFR 1910.120 OSHA 40-Hour Training
- CFR 1910.120 OSHA 8-Hour Refresher Training

Mr. Robert Hansen brings over 30 years of experience managing hundreds of Phase I environmental site assessments and Phase II site investigations. From consulting on potential environmental liabilities to providing litigation support, Mr. Hansen has represented both public- and private-sector clients before regional water quality control boards, DTSC, and other local environmental regulatory agencies. His expertise includes subsurface soil, soil gas, and groundwater investigations and remediation. He has overseen numerous site investigations involving the release of petroleum hydrocarbons, chlorinated solvents, volatile organic compounds, heavy metals, pesticides, and other emerging chemicals of concern.

City, County, & Public Works

Regional Soccer Park, Colton, CA. Project Manager responsible for the Phase I and Phase II environmental site assessment in support of a CEQA IS/MND developed for a proposed 37-acre regional soccer park. The assessment included an approximately 10-acre area over a former waste site (landfill). As part of his project management responsibilities, Mr. Hansen developed the environmental site assessment scopes of work, including excavation of eight trenches to identify potential buried waste refuse and debris; performed senior technical review, and interfaced with project stakeholders, including the San Bernardino County Department of Environmental Health, the acting Local Enforcement Agency (LEA) for CalRecycle, for approval of the Phase II work plan.

Magic Johnson Regional Park (Former Athens Tank Farm Technical Advisor), Willowbrook, CA. MJRP was formerly owned by another party and utilized as a petroleum product storage and distribution facility from the 1920s to mid-1960s. The former 122-acre facility consisted of two large crude oil reservoirs, 22 above ground storage tanks (ASTs), absorption plants and pipelines. Contaminants of potential concern have been identified. They include crude oil, diesel, gasoline, benzene, toluene, xylene, methane and other petroleum constituents.

Proposed Warehouse Development, Renaissance Planning Area 19, Rialto, CA. The 9.16-acres site was proposed for future commercial use. The site had remained vacant, undeveloped land, with varied trails and roads transecting the site throughout its history. Evidence of dumping was observed during the site reconnaissance and subsequent soil sampling for Total Petroleum Hydrocarbons (TPH), Title 22 Metals, Polychlorinated Biphenyl's (PCBs), and Organochlorine Pesticides (OCPs) was performed. The soil data collected during this investigation indicated the sampled stockpiles were acceptable for future commercial/industrial use.

Electronic Retailer, Hawthorne, CA. Senior Project Geologist completing Phase I, Phase II, and Phase III mitigation of former oil field property prior to its redevelopment as electronics retailer. Included re-abandonment of former oil and gas well, creation of emergency well venting system, and mitigation of petroleum impacted soil related to former crude oil distribution systems.

Proposed Parklin Extension - Tract 20249, PA-8 and PA-9, Chino, CA. The 5.3-acres site was proposed for future residential development. The site had historical uses for agriculture, rural residences, cattle and calf corrals, and maintenance structures overlapping the eastern adjoining property. By the time of the site reconnaissance all structures had been demolished and the site was mass graded into a super pad. Phase II activities included shallow soil sampling for selected areas of concern for OCPs, PCBs, TPH, Title 22 Metals, Volatile Organic Compounds (VOCs), Chlorinated Herbicides (CHs), and asbestos. Field observations and soil sample analytical results indicated the shallow soil was acceptable for future residential use.

Renaissance Development Area, Rialto, CA. The 38-acres site was proposed for future residential land use. The site had multiple historical uses including agriculture, part of a larger airport, portions used for fire fighter training activities, and as a staging area of aggregate stockpiles, soil stockpiles, and earth moving equipment. Former usage of the site for agriculture and the potential use of PFAS containing foams within the fire fighter training area were considered recognized environmental conditions (RECs).

Proposed Hampton Tedder Headquarters, Montclair, CA. Project Manager for the proposed Hampton Tedder Headquarters. The 5.6-acres site was proposed for a commercial/warehouse. The site had early historical uses for agriculture and then later commercial usage. The most recent uses of the property were for a steel welding and fabrication facility, storage areas, and office space. Features observed during the site reconnaissance such as equipment storage areas with stained soils and hazardous waste collection and storage were identified as RECs. Additionally, former Underground Storage Tanks (USTs) associated with the site, and the lack of information regarding previous Phase I & II ESA investigations performed at the site were considered RECs.

Former Defense Manufacturer / New IKEA Retail, Burbank, CA. Senior Project Geologist responsible for oversight and review of assessment and mitigation work completed by responsible party related to hexavalent chromium, chlorinated VOCs, and other heavy metal impacts in both soil and multiple groundwater zones at a former defense manufacturing facility and surrounding properties. Properties were eventually re-developed with newest IKEA facility, in conjunction with the on-going mitigation efforts.

Woodcrest-Reinhart Acres Drainage Plan, Woodcrest, CA. Project Manager responsible for the Phase I environmental site assessment in support of CEQA Initial Study for proposed underground storm drains, inlet structures and street improvements for the Riverside County Flood Control and Water Conservation District. As part of his project management responsibilities, Mr. Hansen developed the environmental site assessment scopes of work, prepared the technical report, and interfaced with the client.

Multi-Site Leaking Underground Storage Tank Investigations, San Bernardino, CA. Senior Project Manager for the investigations and mitigations of multiple retail gasoline stations sites with leaking USTs operated by a local developer and petroleum retailing business.

Domestic Well Site, Southeast San Diego County, CA. Senior staff geologist investigating threatened water supply well in small San Diego County border town with sole-source aquifer supply. Mitigation of threats with dual phase extraction and NAPL recovery. Interfacing with San Diego County Site Assessment and Mitigation unit, San Diego Regional Water Quality Control Board, and San Diego APCD re. assessment and mitigation efforts.