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APPENDIX F

Phase I ESA Report

PHASE I ENVIRONMENTAL SITE ASSESSMENT

3049, 3095, and 3163 E Vernon Avenue
Vernon, California

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EXECUTIVE SUMMARY

Langan CA, Inc. (Langan) completed a Phase I Environmental Site Assessment (ESA) for the property located at 3049, 3095, and 3163 East (E) Vernon Avenue in the City of Vernon, California (the "subject property") under the written authorization of GIC Vernon, LLC. (GIC, "Client" and the "user").

The Phase I ESA was completed following the guidelines of ASTM International Standard Practice E1527-21 (ASTM E1527-21) and the United States Environmental Protection Agency's (US EPA) All Appropriate Inquiries (AAI) Rule. The user requested this ESA for administrative purposes.

Subject Property Layout

The subject property is approximately 23 acres and currently vacant.

Subject Property Current Use

The subject property is currently vacant.

Subject Property History

According to the available topographic maps, in 1894 the subject property was developed with a structure of unknown use along the western property line. In 1920, a meat processing facility occupied the subject property along the intersection of South Soto Street and East Vernon Avenue. By 1949, Clougherty Packing Company (Clougherty) had acquired the previous facility. The remainder of the subject property was also occupied with meat packing plants and a dwelling with an attached auto repair facility. A fiberboard manufacturer operated on the northern portion of the site from 1928 to at least 1956. Between 1956 and 1964, Clougherty acquired the property. The previous structure was demolished, and a warehouse was constructed on the portion of the subject property which housed the Wiener Building.

From the 1960s, Clougherty, or its successors, expanded operations from the original footprint to the entirety of the subject property t. In 1953, Clougherty introduced the Farmer John brand and by 2004, Hormel Food Corporation (Hormel) acquired Clougherty. In 2017, Smithfield acquired Hormel.

By 2023, GIC acquired the property and by June 2024, all buildings, flooring, and basements on the property were demolished.

Adjoining Properties and Surrounding Area

The adjoining properties and surrounding area were developed with sporadic structures according to the 1890s topographic maps. The northern and western properties were developed with commercial and industrial uses by the 1920s. The northern adjoining property included various commercial and manufacturing uses from the 1940s until 2002 when the present commercial buildings were constructed.

The western adjoining property was identified General Petroleum Corporation of California, a gas station, and two packaging companies on the 1940s Sanborn map. According to aerial photographs, the property remained relatively unchanged until the late 1980s when grading began on the southern portion of the property. By the early 1990s, the property was in its general present configuration of warehouses.

By the 1930s, the eastern adjoining property was developed with industrial buildings that were identified in the 1949 Sanborn map as Coast Packaging which remains to present day.

The southern adjoining property consisted of a residential dwelling and vacant land according to the 1920 Sanborn map and 1923 aerial photograph. The property was developed with a gas station (approximately 1948 to 1952) and a paving company (approximately 1933 to 1967). Commercial buildings occupied the southeast corner of the subject property until they were demolished in 2018. In 2024, the property was demolished and has remained a vacant dirt lot.

On the surrounding properties, industrial development was noted in the 1920s. An oil tank farm is noted to the south of the subject property from the early 1920s to the late 1930s. Additionally, a tank farm is visible to the northeast of the subject property from the early 1920s and remains to present-day.

Conclusions

Langan completed a Phase I ESA of the subject property using the scope guidelines and inherent limitations of ASTM E1527-21. Table ES-1 presents the conclusions of the Phase I ESA.

Table ES-1 Conclusions, Findings and Opinions

ASTM E1527-21 Scope Items
Recognized Environmental Conditions (RECs)
REC – 1: Historical Industrial Activity: There has been approximately 100 years of industrial activity on the subject property. Operations included meat packing and fiberboard manufacturing. Associated infrastructure included rail spurs, electrical substations, vehicle maintenance and repair areas, hydraulic lifts, and hazardous materials storage areas. The Sanborn maps for the subject property indicated the presence of auto repair and maintenance areas from the early 1920s to late 1960s. Historically, auto repair and maintenance facilities were known to use solvents, such as tetrachloroethylene (PCE) and trichloroethylene (TCE) as degreasers, as well petroleum products. During the Phase II ESA, PCE detections above applicable screening levels were measured (between 110 ug/m3 and 270 ug/m3) in two northern soil gas sample locations and one central soil gas sample location on the subject property. The presence of PCE and potential presence of PCE in other locations on the subject property are considered a REC. The meat packing operation included the use of hydraulic oil and other petroleum products as part of typical operations. Additionally, operations included washing down surfaces within the facility into floor drains ubiquitous inside of the buildings. During the 2023 Phase I ESA site recon, floor drains were observed in engine rooms and hazardous waste storage areas, where staining was observed during site reconnaissance. Corroded piping and floor drains within the Main Building were also observed during site reconnaissance. Petroleum products released into floor drain systems may have potentially impacted site soil and soil vapor. During the Phase II ESA investigations, observations during soil borings included volatile organic compound (VOC) screening via photoionization detector (PID) and total petroleum hydrocarbon (TPH) screening with Hanby® test kits. The screenings confirmed the potential for petroleum impacts. These observations, in addition to the presence of VOCs; including benzene, toluene, ethyl benzene, and xylenes, in soil vapor confirm that petroleum releases have occurred on the subject property. During Soil Management Plan (SMP) implementation, TPH was noted in some areas above applicable screening levels. The soil in these areas was left in place and will be managed during the site redevelopment. The presence of TPH in the soil is considered a REC.

ASTM E1527-21 Scope Items
REC – 2: Heavy Metal Detections on the Subject Property: The Former Exide Facility (Exide) historically operated as a lead-acid battery recycling and lead smelting facility from 1922 to 2015 and was located 1.27-miles east of the subject property. In addition, there were historical industrial activities in the vicinity of the subject property with heavy metal manufacturing and/or usage. During the demolition activities on the subject property in December 2023, limited areas of red soil were encountered in the northern portion of the subject property. Samples were collected from the red soil between January and February 2024 and analyzed for heavy metals, TPH, and VOCs. No TPH or VOCs were detected at levels exceeding applicable screening levels. Nine metals were detected above applicable screening levels. Antimony was detected between 284 milligrams per kilogram (mg/kg) and 1,100 mg/kg; arsenic was detected between 21.9 mg/kg and 84 mg/kg; barium was detected between 3,000 mg/kg and 3,800 mg/kg; lead was detected between 2,400 mg/kg and 54,000 mg/kg; nickel was detected between 86 mg/kg and 190 mg/kg; and mercury was detected between 44 mg/kg and 65.3 mg/kg. GIC is currently working with the City of Vernon to collect additional data relative to the delineation of the red soil and to evaluate potential remedial options. The elevated levels of lead and other heavy metals measured in the soil in limited areas at the subject property are considered a REC.
REC – 3: Industrial Activity in the Surrounding Area: There has been approximately 100 years of industrial activity on the adjacent properties and in the surrounding area of the subject property. Operations included a battery smelting and recycling facility, oil and gas production, meat packing, and auto repair facilities. The north adjacent property and east adjoining property are the locations of historical Leaking Underground Storage Tank (LUST) cases. The west adjacent properties historically included gas stations, auto repair facilities, and the use of USTs for industrial purposes. An oil tank farm was present approximately 350-feet south of the subject property and visible on aerial photographs from 1923 to 1938. In 1948, remnant tank scars are visible and by 1952, the area was constructed with warehouses. According to topographic maps and aerial photographs, an oil and gas terminal, located northwest of the subject property, has been in operation since the early 1920s. Due to the current and historical operations in the vicinity of the subject property, the potential offsite sources of hazardous substances are considered a REC.
Controlled Recognized Environmental Conditions (CRECs)
Langan did not identify CRECs.
Historical Recognized Environmental Conditions (HRECs)
Langan did not identify HRECs.
De Minimis Conditions
Langan did not identify de minimis conditions.
Significant Data Gaps
Database listings indicate the presence of 24 USTs on the subject property. Five were reportedly removed and one was abandoned in place. Information regarding the remaining USTs was not available for review from the City of Vernon. During demolition activities, USTs or indicators of USTs (fill lines, UST vents, or UST dispensers) were not identified or encountered. Due to the removal of the previous surface

ASTM E1527-21 Scope Items
structures, concrete flooring, and basements, it is considered unlikely that there are historical USTs remaining at the subject property.

1. INTRODUCTION

Langan CA, Inc. (Langan) completed a Phase I Environmental Site Assessment (ESA) of the property located at 3049, 3095, and 3163 East (E) Vernon Avenue (the "subject property") under the written authorization of GIC Vernon, LLC (GIC, the "Client" and the "user"). A Subject Property Location Map is provided in Appendix A (Figure 1).

The Phase I ESA was completed following the guidelines of ASTM International Standard Practice E1527-21 (ASTM E1527-21) and the United States Environmental Protection Agency's (US EPA) All Appropriate Inquiries (AAI) Rule, and industry standard practice.

1.1 Purpose

The purpose of this Phase I ESA is to identify recognized environmental conditions (REC) associated with the subject property. This purpose also includes identifying controlled recognized environmental conditions (CREC), historical recognized environmental conditions (HREC), de minimis conditions, and significant data gaps. The definitions of REC, CREC, HREC, de minimis condition and other select ASTM terms used in this report are in Section 8.

1.2 Scope of Services

Langan's scope of services consisted of the completion of a Phase I ESA following the guidelines of ASTM E1527-21. Langan's scope of services as it pertains to the elements of a Phase I ESA as specified in ASTM E1527-21 is described below.

On 8 July 2024, the US EPA final rule designating two per- and polyfluoroalkyl substances (PFAS) – perfluorooctanoic acid (PFOA) and perfluorooctanesulfonic acid (PFOS) including their salts and structural isomers – as hazardous substances under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) became effective. Because of the complex and varied historical use of PFAS in various industries; limited prior disclosures of PFAS content on product specification sheets, Material Safety Data Sheets (MSDS), and Safety Data Sheets (SDS); the complex chemistry and chemical transformations associated with some PFAS; and the ever-growing and varied list of state regulations, it is not feasible to evaluate PFOA and PFOS without also considering other PFAS. As such, absent analytical data, Langan incorporated a review of PFAS as a general class into this Phase I ESA.

PFAS and other CERCLA hazardous substances and petroleum products have been detected in background environmental samples across the globe, including in areas removed from specific recognized sources. This Phase I ESA was not intended to evaluate background concentrations of CERCLA hazardous substances or petroleum products, regardless of whether the source is naturally occurring or anthropogenic. The objective of Langan's scope of services was to identify the presence, likely presence, and/or material threat of a release of CERCLA hazardous substances and petroleum products related to specific property uses that are generally recognized as known or potential sources of such substances and products.

1.2.1 Records Review and Local Government Interviews

Langan contracted a third-party provider to search environmental regulatory databases and provide historical records. The database search included select federal, state, local and tribal standard source environmental databases within the approximate search radii specified by ASTM E1527-21.

Langan submitted Freedom of Information Act (FOIA) requests to supplement environmental database listing information for the current and historical addresses found for the subject property and relevant adjoining properties. The FOIA requests were submitted to the Department of Toxic Substance Control (DTSC) Chatsworth Office, Regional Water Control Board (RWQCB) Los Angeles Region, South Coast Air Quality Management District (SCAQMD), Los Angeles County (LAC) Certified Unified Program Agency (CUPA), LAC Department of Public Works (DPW), LAC Department of Public Health (DPH), LAC Sanitation District, City of Vernon, and US EPA databases. Agency FOIA-requested information, where received, is discussed in relevant sections of this report and referenced in Section 7. Pertinent documents are provided in Appendix B.

Langan supplemented the third-party-provided historical records with review of online historical record sources including Google Earth Pro and NETR Online.

1.2.2 Site Reconnaissance and Owner/Operator/Occupant Interviews

Langan completed the site reconnaissance on 4 December 2024. Vincent Martino (Goodman Construction Project Manager; the "key site manager") accompanied Katherine Thomas of Langan during the site reconnaissance. Vincent Martino has been associated with the subject property since GIC acquired the property in 2023.

According to interviews with Mr. Martino, underground storage tanks (USTs) were not discovered during demolition activities. Due to the removal of the previous surface structures, subsurface structures, concrete flooring, and utilities, it is considered unlikely that there are historical USTs remaining at the subject property.

Langan walked the periphery of the subject property, observed the subject property from adjoining public thoroughfares, and walked the accessible interiors of structures at the subject property. Langan also observed the adjoining properties and the surrounding area from the periphery of the subject property and from public thoroughfares adjoining to or traveled on to access the subject property. The weather at the time of the site reconnaissance was approximately 60ºF and sunny. Photographs from the site reconnaissance are provided in Appendix C.

1.2.3 Evaluation, Report and Parts Used in Concert

Langan evaluated the information obtained from the records reviews, site reconnaissance and interviews described above, and from the user as described in Section 1.3 in concert with each other. Langan's findings, opinions, and conclusions are discussed throughout this report. Significant assumptions, or deletions, deviations or exceptions to ASTM E1527-21 are noted in Section 1.4.

1.2.4 Non-ASTM Scope Services

The scope of services for the Phase I ESA did not include non-scope ASTM considerations.

1.3 User Responsibilities

Langan requested that the user provide the results of tasks the user is responsible for completing to satisfy the requirements of AAI. The tasks include: searching for known environmental liens and activity and use limitations (AULs) filed or recorded against the subject property, and provision of information related to specialized knowledge or experience of the user or the degree of obviousness relative to conditions indicative of releases or threatened releases; actual knowledge of the user regarding environmental liens or AULs related to the subject property; specialized knowledge or experience of the user; reasons for significantly lower purchase prices, and commonly known or reasonably ascertainable information within the local community about the subject property. Langan also requested that the user state the reason the Phase I ESA was requested. A summary of the user's responses is provided in Appendix D and relevant information provided by the user is discussed in applicable sections of this report.

Unless specifically included in the scope of services, Langan did not complete a title search or a search for environmental liens or AULs, as that is the responsibility of the user. If the user requested that Langan complete such searches on the user's behalf, the information was supplied to Langan by a vendor, and to the vendor by government sources; therefore, neither Langan nor the vendor can verify the completeness or accuracy of the title search, or AUL searches.

1.4 Limiting Conditions/Deviations

Langan identified one significant data gap related to historical USTs, which is summarized in Section 5 and below.

- Database listings indicate the presence of 24 USTs on the subject property. Five were reportedly removed and one was reportedly abandoned in place. The statuses of the remaining USTs are unknown, and the City of Vernon did not possess documentation for the remaining tanks.

Data gaps that are not considered significant data gap are discussed below.

- Historical information was not readily available to characterize the subject property to its initial developed use or 1940. The 1894 topographic map indicates the subject property was developed with structures and earlier historical resources identifying the use of the subject property were not available. Based on knowledge of the area, it is likely the subject property was developed with either dwellings in 1894 or industrial structures.

Langan did not delete or deviate from the ASTM E1527-21 guidelines during this Phase I ESA.

1.5 Data Gaps

Data gaps, if encountered, are discussed throughout the report. Significant data gaps are summarized in Section 5.0.

2. SUBJECT PROPERTY DESCRIPTION AND CURRENT USE

The following sections describe the subject property location, ownership, physical setting, and current layout and operations.

2.1 Location, Legal Description, and Ownership

The approximately 23-acre subject property is located on the northeast corner of S Soto Street and E Vernon Avenue. A legal description of the subject property was not reasonably ascertainable. According to the Los Angeles County Assessor's Office, the subject property has the following Assessor Parcel Numbers (APNs):

- 6303-005-034
- 6303-005-035
- 6303-005-036

Additional addresses for the subject property were found on historical Sanborn maps and the Los Angeles Assessor's map. Supplemental FOIA requests were submitted for the following addresses:

- 2730, 2740, 2750, and 3010 East 37th Street
- 13, 3720, 3800, 3804, and 3890 South Soto Street
- 3040 and 3207 East Vernon Avenue

A Subject Property Location Map (Figure 1) is included in Appendix A of this report.

2.2 Physical Setting

The physical setting that includes the geologic, hydrogeologic, hydrologic, and topographic characteristics of the subject property and surrounding area is discussed below.

2.2.1 Topography

The 2022 United States Geological Survey (USGS) 7.5-minute quadrangle topographic map for Los Angeles depicts the subject property at an elevation of approximately 200 feet above mean sea level (amsl) with a gentle slope toward the northeast. The regional topography slopes downward toward the Los Angeles River, which is located contiguous to the northeast subject property line.

2.2.2 Geology

According to the U.S. Department of Agriculture's (USDA) Natural Resources Conservation Service (NRCS) Soil Survey Geographic (SSURGO) data for Los Angeles County, soils at the subject property are comprised primarily well-drained sands and loams with high infiltration rates.

According to California Geologic Energy Management Division (CalGEM) information, the subject property is located in Pleistocene to Holocene age marine and continental sedimentary rocks. This area is characterized by unconsolidated and semi-consolidated alluvium, lake, playa, and terrace deposits.

2.2.3 Hydrogeology

Surface water bodies are not present within the boundary of the subject property. The nearest surface water body is the Los Angeles River, which is located along the northeastern subject

property line. Information regarding subject property-specific groundwater flow direction is unavailable. Groundwater flow can be influenced by a number of factors such as surface water bodies, wetlands, hydrogeologic and anthropogenic variables. However, based on topographic gradient and proximity to the Los Angeles River, it is expected that groundwater generally flows to the north-northeast.

A review of the Los Angeles Department of Public Works (DPW) identified a groundwater well approximately 0.4-miles east of the subject property. In 2019, groundwater was measured at 242 feet below grade surface (bgs).

A review of the State Water Resources Control Board's GeoTracker website identified a Cleanup Program Site located approximately 400-feet northwest of the subject property. In 2017, groundwater was measured at approximately 190-feet bgs and the groundwater flow was determined to be approximately north-northwest.

2.3 Subject Property Description

The subject property is currently vacant.

A Subject Property Layout Map is provided in Figure 2 of Appendix A. Photographs of the subject property and a checklist documenting Langan's observations relative to the features, activities, uses and conditions outlined in Section 9.4 of ASTM E1527-21 are in Appendix C.

2.4 Current Subject Property Use

The subject property is currently vacant.

The following table summarizes subject property utility providers.

Table 2-1 Utility Providers

Utility	Providers
Electricity	The City of Vernon
Natural gas	Southern California Gas Company
Water	The City of Vernon
Sewer	The City of Vernon

2.5 Hazardous Substances and Petroleum Products

Langan did not observe hazardous substance and petroleum product use at the subject property.

2.5.1 Underground Storage Tanks (USTs)

The EDR database report identified 24 USTs installed on the subject property between 1929 and 1981. Langan reviewed supporting information for six USTs from City of Vernon records; the record review is summarized below:

- 1980: Two 12,000-gallon USTs with dispenser islands were installed along South Soto Street under the Wiener Building. The UST closest to South Soto Street contained diesel and the other UST contained gasoline.
- 1986: One 8,000-gallon UST containing leaded gasoline and one 1,950-gallon containing unleaded gasoline were removed from the western exterior of the previous hog pens.

According to reports, soil samples were not collected. During removal activities, visual inspection of the soil was made and air monitoring was conducted. The pit was backfilled with reportedly clean soil removed during excavation activities and topped with concrete.

- 1989: During repair of the turbine pump discharge for the 12,000-gallon gasoline tank, located along South Soto Street, faulty leak detection wiring was observed and repaired. The leak detection alarm went off and tank integrity testing was conducted on both USTs. Six borings were extended between 25 and 28 ft bgs around the USTs. During drilling activities, a clay layer was encountered between 27 and 28 ft bgs. Total petroleum hydrocarbons (TPH) and benzene, ethylbenzene, toluene, and xylene (BTEX) impacts were measured in the northern portion of the UST area (B-4, B-5, and B-6).
- 1994: The two 12,000-gallon USTs and associated infrastructure were removed. One 550-gallon UST (containing gasoline, installed in 1929) approximately located within the Kill Floor was also removed. The removal reports indicate that the tanks potentially leaked and the affected soil was removed and tested for BTEX and TPH as gasoline (total petroleum hydrocarbons in the gasoline range) using EPA Methods 5030, 8020, Modified 8015 and California DHS LUFT. Confirmation samples were collected from the excavation area of the 12,000-gallon tanks and tested for BTEX and TPH. Results indicated that residual TPH impacts were left in place. Closure reports were submitted to the City of Vernon, but Langan was unable to review a response from the City confirming the site was closed.
- 2005: One 10,000-gallon UST containing boiler fuel oil was abandoned in place in the former south engine room. During abandonment activities, the tank was partially excavated to reveal the ends of the tank. Air monitoring was performed during excavation activities and no volatile organic compounds (VOCs) were detected. Soil sampling was not performed. The tank contained residual oil and 1,900-gallons of oil was pumped out and transported to a facility for recycling as non-RCRA hazardous waste. The tank was cleaned and approximately 800-gallons of oil, sludge, and rinsate was removed and transported as non-hazardous waste for recycling. The tank was filled with a concrete slurry mix and soil excavated from the tank pit. A covenant was granted by the City of Vernon to the subject property for the abandoned-in-place of the UST. The covenant states that the UST is to remain abandoned-in-place until the building is demolished or remodeled in such a way that the UST can be accessed for further work, if required by the City of Vernon.

According to interviews of Vincent Martino on 4 December 2024, USTs or UST systems (piping/dispensers) were not encountered during demolition activities. Due to the removal of all buildings, flooring, and basements potential exposing UST systems, it is unlikely that the remaining USTs are present at the subject property and were likely removed at an earlier time.

2.5.2 Aboveground Storage Tanks (ASTs)

Langan did not observe ASTs at the subject property.

2.5.3 Drums, Totes, and Intermediate Bulk Containers

Langan did not observe drums, totes, or intermediate bulk containers.

2.5.4 Other Chemical Storage, Containers, or Equipment

Langan did not observe chemical storage, containers, or equipment.

2.6 Air Emissions

Langan did not observe evidence of air emission at the subject property.

The subject property is listed in the environmental database for emission violations pertaining to ammonia releases and is discussed in further detail in Section 3.2. Documents from the City of Vernon indicate ammonia releases in 1983, 1997, 2008, 2010, 2011, 2016, 2017, and 2019, as well as a chlorine gas release in 2016. The ammonia and chlorine were unrecovered and released into the atmosphere. The EPA cited formal action against Clougherty and settled civil enforcement penalties in 2022 for violations of the Clean Air Act. Additionally, there are SCAQMD violations for excessive releases.

Langan does not consider the air emissions an environmental concern for the subject property.

2.7 Waste Management

The following sections describe current hazardous and non-hazardous waste streams, and observations of fill areas or other solid waste throughout the subject property.

2.7.1 Non-Hazardous Waste

Langan did not observe non-hazardous waste on the subject property. Historical non-hazardous waste generation is discussed further in Section 3.2.

2.7.2 Hazardous Waste

Langan did not observe hazardous waste on the subject property. Historical hazardous waste generation is discussed further in Section 3.2.

2.7.3 Fill Areas or Solid Waste

Langan did not observe areas that were apparently filled or graded by non-natural causes (or filled with material of unknown origin) that suggest the presence of garbage, construction debris, demolition debris, or other solid waste disposal, or mounds or depressions suggesting solid waste disposal.

Langan did observe gravel stockpiles staged in the center of the subject property. The material will reportedly be used onsite during redevelopment.

2.8 Wastewater

Langan did not observe or identify evidence of septic systems or cesspools at the subject property. Historical wastewater information is summarized in the subsequent paragraphs below.

Records obtained from the Los Angeles County Sanitation District (LACSD) noted violations, mostly pertaining to high volumes of effluent discharge from as early as 1972.

In 2000, the LACSD noted immediate corrective action for deficient self-monitoring reports and violations pertaining to excess effluent of oil and grease and low pH of discharged water. Subsequent testing measured effluent flow meter calibrations outside the accuracy limits

required by the LACSD. In 2003, effluent flow meters were calibrated in accordance with regulatory guidelines by a third-party vendor.

In 2019, the LACSD noted violations regarding ammonia laden wastewater and off-property ammonia odors. The LACSD cited permit violations and warned of corrective action. Follow-up inspections noted sample points within normal range and violation was lifted.

Langan does not consider the historical wastewater violations an environmental concern.

2.9 Stormwater

According to interviews, stormwater does not leave the subject property. All historical drains have been capped and stormwater at the site infiltrates through the soil.

3. SUBJECT PROPERTY HISTORY AND RECORDS REVIEW

The following sections provide summaries of the historical uses of the subject property, and available information regarding documented environmental conditions associated with the historical uses.

3.1 Historical Summary

Langan compiled the following summary of the subject property history based on a review of readily available and reasonably ascertainable sources and interviews. Historical resources are provided in Appendix E.

Table 3-1 Subject Property History

Time Period	Historical Discussion
1890 – 1900	Structures are depicted along the western subject property line.
1920s – 1930s	According to the 1920 Sanborn Map, the subject property was developed with Los Angeles Packing Company along the northeastern corner of East Vernon Avenue and South Boyle Street (presently South Soto Street). A gasoline pumping station is noted along the western property line, north of the intersection of East Vernon Avenue and South Boyle Street. The remainder of the property is used for dwellings and hog pens. The subject property appears relatively unchanged between the 1923 and 1928 aerial photographs. By the 1938 aerial photograph, commercial development is visible along the northern property long and eastern property line.
1940s – Present	A railroad siding extending onto the subject property from the east is visible in the 1948 aerial photograph and remained until it was removed in 2024. Between 1928 and 1956, an L-shaped warehouse occupied the subject property along the northern boundary. The property was identified as Fibreboard Products, Inc. in the 1949 – 1956 Sanborn maps. Upon further research of this facility, Langan discovered that Fibreboard Products, Inc. manufactured asbestos-containing insulation and materials. The western portion of the subject property was developed with Clougherty Bros which includes buildings pertaining to meat processing operations. Gas and oil storage is noted in the yard, north of the buildings, a 10,000-gallon steel aboveground storage tank is noted east of the buildings. An auto repair shop is located in the center of the subject property that remains until 1956. In 2003, the buildings along the eastern portion of the subject property were demolished and a distribution center was constructed. By June 2024, all buildings and concrete surfaces were demolished and removed from the property. The subject property is currently a vacant lot.

Environmental concerns related to historical operations are discussed further in Section 3.3.

3.2 Regulatory Database Review

The subject property is identified on the Hazardous Waste Tracking System (HWTS), Facility and Manifest (HAZNET), Aboveground Storage Tank (AST), California Integrate Water Quality System (CIWQS), Risk Management Plan (RMP), Facility Index System (FINDS), Enforcement and Compliance History Online (ECHO), California Environmental Reporting System (CERS), CERS Hazardous Waste (HAZ WASTE), CERS TANKS, California Hazardous Materials Incident Report System (CHMIRS), Emissions Inventory Data (EMI), Resource Conservation and Recovery Act (RCRA) Non-generator / No Longer Regulated (NonGen / NLR), Potentially Responsible Party (PRP), Statewide Environmental Evaluation and Planning System (SWEEPS) Underground Storage Tank (UST), Historical UST (HIST UST), Emergency Response Notification System (ERNS), National Pollutant Discharge Elimination System (NPDES), Integrated Compliance Information System (ICIS), Toxic Release Inventory System (TRIS), and EDR Historical Cleaner (HIST CLEANER).

HAZNET, HWTS, CERS HAZ WASTE, and RCRA listings: The subject property is listed in the HWTS and HAZNET databases for the historical generation of hazardous wastes from 1996 to 2021. Documentation on the type and amounts of wastes generated are included in Appendix F. Upon reviewing the manifests, the majority of wastes generated were less than one ton. In 2021, the subject property generated 0.045-tons of hydrocarbon solvents, 0.04-tons in 2013, 0.35-tons in 2011, 0.15-tons in 2010, and 0.125-tons in 2003.

Specific wastes are listed as:

- Non-RCRA hazardous waste
- Other inorganic solid wastes
- Liquids with a pH, less than or equal to (<=) 2
- Laboratory wastes
- Waste oil and mixed oil
- Unspecified organic liquid mixture
- Other organic solids
- Alkaline solution with metals, pH greater than or equal to (>=) 12.5
- Off-specification, aged or surplus organics
- Unspecified oil containing waste
- Unspecified solvent mixture
- Unspecified aqueous solution

In 2021, 2011, and 2005, the subject property was listed in the RCRA NonGen / NLR database as a verified non-generator of hazardous materials and no violations or evaluations were found within this database. In 2000, the subject property was listed as a small quantity generator of ignitable and corrosive waste. There are no reported violations or evaluations within this database.

Current hazardous waste generation information is discussed in Section 2.7.1.

CERS: There are multiple CERS violations pertaining to OSHA related matters and administrative matters. These violations are not of environmental concern in relation to this Phase I ESA.

FINDS, ECHO: The subject property is identified as an animal (except poultry) slaughterhouse. The subject property is listed as environmental interest type hazardous waste activities, air emissions, and OSHA violations. The hazardous wastes were not indicated but were categorized as "other". The ECHO database lists the subject property as a major source for air emissions and toxic releases for ammonia between 1997 and 2021 (1997 was the first reported year within the ECHO database). The United States Environmental Protection Agency (US EPA) cited formal enforcement actions under the Clean Air Act which caused Smithfield to incur compliance action costs for the failure to document compliance of an outdoor system with design codes and standards, failure to document compliance of process equipment with design codes and standards, and failure to promptly determine and document responses to compliance audit findings. The EPA also cited violations under the Clean Water Act for the failure to submit required report. Smithfield is also listed as an alleged party for increased ammonia levels in the Los Angeles River.

PRP: The subject property is listed as a potentially responsible party for a National Priority List for the Superfund site, "Operating Industries, Inc., Landfill Monterey Park, CA" under identifier, CAT080012024. The Superfund site is located approximately 8-miles east of the subject property. Due to the distance of the site from the subject property, this listing is not an environmental concern in connection to the subject property.

RMP, TRIS, EMI, ICIS, CHMIRS, ERNS, US AIRS: The subject property is listed in these databases for the storage of anhydrous ammonia and atmospheric releases. Air emissions are discussed in Section 2.6.

AST: The AST information is discussed in Section 2.5.2.

CIWQS, NPDES, TRIS: Current and historical industrial wastewater information is discussed in Section 2.8.

CERS TANKS, SWEEPS, HIST UST, and UST: Current and historical UST information is discussed in Section 2.5.1. The database listings indicate the presence of 24 USTs which were installed between 1929 and 1981, and are summarized in the table:

Year Installed	Capacity (gallons)	Product	Tank ID	Construction	Type of Listing
Unknown (UK)	6,000 (4 tanks)	Diesel	19-039-001650-001651	UK	SWEEPS
UK	6,000	Diesel	19-039-001650-001652	UK	SWEEPS
UK	7,500	Leaded gasoline	19-039-001650-001653	UK	SWEEPS
UK	7,500	Diesel	19-039-001650-001654	UK	SWEEPS
UK	8,000 (5 tanks)	Leaded gasoline	19-039-003630-000003	UK	SWEEPS
UK	1,950	Unleaded gasoline	19-039-003630-000004	UK	SWEEPS
UK	550	Unknown	19-039-003630-000005	UK	SWEEPS
UK	12,000	Unleaded gasoline	19-039-003630-003631	UK	SWEEPS
UK	12,000	Diesel	19-039-003630-003632	UK	SWEEPS
1970	6,000	Diesel	5472001	Single-walled, carbon steel	HIST UST
1970	6,000	Diesel	5472002	Single-walled, carbon steel	HIST UST
1970	7,500	Regular, leaded gasoline	5472003	Single-walled, carbon steel	HIST UST
1975	7,500	Diesel	5472004	Single-walled, carbon steel	HIST UST
1981	10,000	Regular gasoline	41696001	Single-walled, carbon steel	HIST UST
1981	10,000	Diesel	41696002	Single-walled, carbon steel	HIST UST
1945	8,000	Premium, leaded gasoline	41696003	Single-walled, carbon steel	HIST UST
1945	1,950	Unknown	41696004	Single-walled, carbon steel	HIST UST & SWEEPS

3.3 Prior Report Review

Langan reviewed or prepared the following prior reports for the subject property. The reports are referenced in Section 7 and summarized below.

Phase I Environmental Site Report, Farmer John Site, 3049, 3095, & 3163 Vernon Avenue, conducted by EBI Consulting (EBI)

EBI performed a Phase I ESA on behalf of Smithfield in January 2023. They identified two RECs, including:

- The subject property has been occupied by livestock slaughtering operations since 1918. This included petroleum product storage and use as well as the generation of RCRA hazardous waste including TCE and PCE.
- The subject property is a "Registered Storage Tank Site" with 11 USTs historically registered at the subject property.

EBI noted the first use of the subject property as a slaughterhouse in 1918, though Langan was unable to corroborate that date and documented a first use in 1920. The subject property is listed as a historic RCRA generator of hazardous materials and EBI noted chlorinated solvents as an identified waste.

During the site reconnaissance, EBI noted significant staining in the vicinity of the hydraulic oil reservoirs and significant oil staining within the vicinity of waste oil containers, consistent with Langan's findings during the site recon in 2023. EBI noted the staining and reported historical oil and gas activities on the subject property as a REC.

EBI noted a second REC pertaining to the unknown status of 11 USTs and based on the absence of closure documentation or subsurface investigations, the USTs were considered a REC.

Phase I Environmental Site Assessment, Smithfield Packaged Meats Corporation, 3049, 3094, 3095, 3163, and 3200 Vernon Avenue, conducted by Langan Engineering & Environmental Services, Inc. (Langan)

Langan conducted a Phase I ESA on behalf of GIC in May 2023. The Phase I ESA included the property south of E Vernon Avenue, which is not included in this assessment.

At the time of Langan's site reconnaissance, the subject property was improved with three production buildings totaling approximately 326,087 square feet (sq.ft.), an 86,472 sq.ft. freezer dock, a 4,422 sq.ft. north engine room, a 334,583 sq.ft. main building, a 10,603 sq.ft. garage/distribution center, and a 117,429 sq.ft. distribution center. A parking lot was located on the south side of E Vernon Avenue. The main building/sausage building was situated along the intersection of E Vernon Avenue and South (S) Soto Street.

Wastewater wells and sumps were observed throughout the entirety of the subject property. According to the report, industrial wastewater is collected through a series of trenches and floor drains and flows through a network of underground piping into various sumps and wastewater wells throughout the subject property. Industrial wastewater activities included cleaning and sanitizing floors and equipment, boiler blowdown, cooling-tower bleed, water-softener regeneration, and freezer condensate. During the site reconnaissance, oil staining was observed throughout the interior and exterior of the warehouses. Floor drain inlets and above floor piping in the oldest building at the subject property (the Main Building) were corroded. Records of violations pertaining to wastewater were consistent with the findings detailed in Section 2.8.

Langan observed two 1,500-gallon hydraulic oil tanks and five hydraulic elevator oil reservoirs ranging between 90-gallons and 220-gallons. Staining was observed around all hydraulic oil containers. Two 300-gallon waste oil tanks were observed in the main building with staining around the tanks. The hydraulic oil and waste oil staining was observed on top of cracked concrete and near floor drains. According to information obtained from Sanborn maps and City records, at least two of the hydraulic elevator oil reservoirs were installed pre-1980 and have a potential to have historically contained polychlorinated biphenyls (PCBs). Additionally, various sizes of ASTs containing animal byproducts and ammonia refrigerant were also observed.

Three abandoned-in-place rail spurs were noted along the northeast property line, which were historically used for livestock and meat products transport.

Three RECs were identified during the assessment which are summarized below:

- REC -1: Historical Industrial Activity: There has been approximately 100-years of industrial activity on the subject property with associated infrastructure including rail spurs, electrical substations, vehicle maintenance and repair areas, hydraulic lifts, and hazardous materials storage. Potential constituents of concern associated with this REC include petroleum constituents, chlorinated solvents, polychlorinated biphenyls (PCBs), creosote, metals, and asbestos in the soil.
- REC-2: Petroleum Underground Storage Tanks (USTs): The EDR database report includes listings for 24 USTs of single-wall steel construction potentially installed on the subject property between 1929 and 1981. Langan reviewed supporting information for six USTs, but the statuses of the other 18 are unknown. The unknown statuses of the USTs, and age of the USTs indicated by available records indicate a potential for soil and soil vapor impacts at the subject property.
- REC-3 Industrial Activity in the Surrounding Area: There has been approximately 100 years of industrial activity on the adjacent properties and in the surrounding area of the subject property. Operations included a battery smelting and recycling facility, oil and gas production, meat packing and auto repair facilities. The current and historical operations in the vicinity of the subject property and the potential off-site sources of hazardous substances may have impacted the media on the subject property.

Langan recommended a Phase II ESA subsurface investigation to evaluate potential impacts identified in REC-1, REC-2, and REC-3 to soil and soil vapor.

Information regarding soil and soil vapor sampling activities are described below. Since this assessment, all previous surface and subsurface structures have been demolished. Materials containing asbestos were removed and disposed offsite by GIC and American Wrecking, Inc. (the contractor). During demolition activities, the contractor did not identify any USTs, or indicators of USTs (fill lines, UST vents, or UST dispensers) on the subject property.

Phase II Environmental Site Assessment, Smithfield Packaged Meat Corporation, 3049, 3094, 3095, 3163, and 3200 Vernon Avenue, conducted by Langan Engineering & Environmental Services, Inc. (Langan)

Langan conducted a Phase II ESA on behalf of GIC in May 2023 to investigate the RECs listed above. Activities included the installation and sampling of 13 soil boring locations and 20 temporary soil vapor points.

The results of the soil analyses were compared to San Francisco Bay Regional Water Quality Control Board (RWQCB) Commercial/Industrial and Construction Worker Shallow Soil Exposure Environmental Screening Levels (ESLs), 2019 Rev. 2. Metal exceedances were detected for arsenic, lead, and nickel. Concentrations of arsenic above the Southern California background levels (12 milligrams per kilogram [mg/kg]) was detected in one sample (B-11-10) at a concentration of 34.4 mg/kg. Lead was detected above the commercial/industrial and construction worker ESL in one sample (B-11-10) at a concentration of 1,100 mg/kg. Nickel was detected above the construction worker ESL with a concentration of 136 mg/kg in one sample (B-11-10). Soil exceedances are shown on Figure 2.1.

Results of the soil vapor analyses were compared to the RWQCB Commercial/Industrial Subslab/Soil Gas Vapor Intrusion ESLs, 2019 Rev. 2. Chloroform was detected in eight of the soil borings above the ESL (18 micrograms per cubic meter [ug/m3]) ranging from 25 ug/m3 (B4-SG-30) to 390 ug/m3 (B12-SG-10). Tetrachloroethylene (PCE) was detected above the ESL (67 ug/m3) in six soil vapor samples ranging from 110 ug/m3 (B3-SG-30) to 590 ug/m3 (B2-SG-10). VOCs were detected in all soil vapor samples below respective commercial/industrial ESLs, with the exception of chloroform and PCE, as described above. Soil vapor exceedances are shown on Figure 2.2.

Concrete samples were non-detect for PCBs in the select locations where potentially PCB-containing equipment may have been stored.

Potential locations of historical USTs were not identified during the assessment activities. Observations during soil boring, including VOC screening via PID and TPH screening with Hanby® test kits included confirmation of petroleum impacts, but were not conclusively indicative of impacts to soil caused by a UST release. These observations, in addition to the presence of VOCs; including benzene, toluene, ethyl benzene, and xylenes; in soil vapor confirm that petroleum releases have occurred on the subject property.

Geotechnical Investigation Report, Proposed Industrial Building Development, 3163 Vernon Avenue, conducted by Langan Engineering & Environmental Services, Inc. (Langan)

As a part of initial geotechnical exploration performed on the subject property and the southern adjoining property in May of 2023, ten geotechnical borings (B-1 through B-10) were advanced using a hollow-stem auger to a maximum of 37 feet below the existing ground surface (bgs). Six additional borings were also installed for the purpose of field percolation testing (FP-1 through FP-6) to approximately 50 to 65 feet bgs. The geotechnical borings are shown on Figure 2.1 and 2.2.

The majority of the geotechnical borings encountered limited surficial fill soils (approximately one to four feet bgs) underlain by native alluvial soils. Groundwater was not encountered in the exploratory geotechnical borings. A distinct clay layer, ranging in depths from approximately 28 to 50 feet bgs, was encountered in the majority of the borings on the subject property.

Soil Management Plan, GIC Vernon, 3049, 3094, 3095, 3163, and 3200, East Vernon Avenue, conducted by Langan Engineering & Environmental Services, Inc.

Based on the analytical results from the Phase II ESA, Langan prepared a Soil Management Plan (SMP), dated 13 October 2023, for the subject property and southern adjoining property. Per the SMP, Langan began conducting site visits on the subject property on 27 December 2023 to

collect samples of the red fill soil encountered by American Wrecking, Inc. (the contractor) while excavating and removing the former footings below the former bacon processing facility in the northern portion of the subject property. From December 2023 to June 2024, Langan conducted field observation and testing services on a weekly basis in support of the demolition at the subject property.

Red Fill Soils Observation & Testing Letter Report, 3049 E Vernon Ae, Vernon CA 90058

Langan submitted a letter report to GIC on 10 May 2024 to summarize the red fill soil discovered at the subject property during the site demolition activities. Samples were collected and analyzed for metals, VOCs, and TPH and compared to the RWQCB Commercial/Industrial and Construction Worker Soil ESLs. No TPH or VOCs were detected above applicable screening levels. The following metals exceeded one or more applicable screening levels:

- Antimony was detected above the RWQCB Commercial/Industrial ESL and the RWQCB Construction Worker ESL of 160 milligrams per kilogram (mg/kg) and 50 mg/kg respectively, between 284 mg/kg and 1,100 mg/kg.
- Arsenic was detected above the Southern California background concentration of 12 mg/kg between 21.9 mg/kg and 84 mg/kg.
- Barium was detected above the RWQCB Construction Worker ESL of 3,000 mg/kg at 3,800 mg/kg in RS-2-6.
- Lead was detected above the RWQCB Commercial/Industrial ESL and the RWQCB Construction Worker ESL 320 mg/kg and 160 mg/kg respectively, between 2,400 mg/kg and 54,000 mg/kg.
- Nickel was detected above the RWQCB Construction Worker ESL of 86 mg/kg at 190 mg/kg in RS-2-6 and RS-3-2.
- Mercury was detected above the RWQCB Construction Worker ESL 44 mg/kg at 65.3 mg/kg in RS-1.

Red soil exceedances are shown on Figure 2.4. Langan concluded that the red fill soils were likely used as fill during the construction of the foundation and building slabs in these locations at the subject property. Based on interviews conducted during this Phase I ESA, the red soil will remain covered and undisturbed during construction activities. GIC is currently working with the City of Vernon to delineate red soil and take appropriate remedial actions.

The heavy metal detections above applicable screening level are considered a REC and were used in our determination of REC-2.

Soil Management Plan Progress Report, December 2023 to June 2024, 3049, 3095, and 3163 E Vernon Avenue, conducted by Langan CA, Inc.

Between December 2023 and June 2024, Langan conducted field visits, documented the onsite activities, and performed testing services one per week during the demolition at the subject property. The following list summarizes the activities documented and the results of the environmental analytical testing conducted.

- Red Fill Soils: Red fill soils were identified by the contractor while excavating and removing the footings below the former bacon processing facility. Sample information can be found in the previous summarized report.
- Black Soil Near Retaining Wall: An area containing discolored, black soil was identified by the contractor while conducting demolition activities near a retaining wall in the northwest portion of the subject property. Langan collected a sample of the material, BS-1, and the sample was analyzed for TPH, VOCs, and metals. TPH and VOCs were not detected above applicable screening levels. lead was detected at 562 milligrams per kilogram (mg/kg), exceeding the Commercial/Industrial ESL (320 mg/kg), Construction Worker ESL (160 mg/kg), and the STLC and TCLP hazardous trigger values (50 and 100 mg/kg). The material was left in place and will be characterized and handled along with the red fill soils, based on the guidelines of the SMP.
- Liquid Smoke Stockpile: While conducting demolition activities at the bacon processing facility, the contractor identified stained material under two large ovens. The approximately 70 cubic feet of material was stockpiled for characterization and sampled. The sample was analyzed for metals, TPH, and VOCs. Metals, TPH, and VOCs were not detected above applicable screening levels. The material was hauled offsite and disposed at a landfill.
- Stained Soil Near Possible Elevator Shaft (east): The contractor identified a possible elevator shaft area with stained soil in the northwestern portion of the subject property. Langan collected four samples of the stained soil. The samples were analyzed for metals, TPH, VOCs, and PCBs. TPH, VOCs, and PCBs were not detected above applicable screening levels. Of the metals, chromium was detected at 53 mg/kg, exceeding the STLC hazardous trigger value (50 mg/kg). Additionally, lead was detected at 200 milligrams per kilogram (mg/kg), exceeding the Construction Worker ESL (160 mg/kg) and the STLC and TCLP hazardous trigger values (50 and 100 mg/kg).
- Stained Soil and Orange-Brown Soil Near Possible Elevator Shaft (west): The contractor identified a second possible elevator shaft area (west of the first identified) with stained soil and orange-brown soil in the northwest portion of the subject property. Langan collected five samples of the stained soil and two samples of the orange-brown soil. Two samples (ES2-6' and OBS-1-2') were analyzed for metals, TPH, and VOCs. ES2-6' was also analyzed for PCBs. Metals and VOCs were not detected above applicable screening levels in either sample. PCBs were not detected above applicable screening levels for ES2-6'. TPH was not detected above applicable screening levels in OBS-1-2'. In ES2-6', TPH diesel range organics (DRO) was detected at 1,600 mg/kg, exceeding the Commercial/Industrial ESL (1,200 mg/kg) and the Construction Worker ESL (1,100 mg/kg). The material is located in the northwest corner of the subject property and will be characterized and handled along with the red fill soil, based on the guidelines of the SMP. Based on the preliminary sampling, the orange-brown soil was able to be used as fill on the subject property.
- Yellow Soil Near Basement: Yellow soil was identified by the contractor will conducting demolition activities near the basement in the southwest portion of the subject property. Langan collected four samples and the samples were analyzed for metals, TPH, and VOCs. Metals, TPH, and VOCs were not detected above applicable screening levels. Based on the analytical results, the soil was able to be used as fill on the subject property.
- Soil Mixed with Brick and Debris Near Basement: Soil mixed with brick and debris was identified by the contractor while conducting demolition activities near the basement in

the southwest portion of the subject property. Langan collected two samples. One sample was kept on hold pending analytical results and the other was analyzed for metals. Chromium was detected at 53 mg/kg, exceeding the STLC hazardous trigger value (50 mg/kg). At the Client's request, the sample was also analyzed for STLC chromium. The STLC chromium result was 0.18 milligrams per liter (mg/L), below the STLC limit of 5 mg/L. The contractor identified asbestos-containing materials within the soil and approximately 920 cubic yards was disposed of offsite.

- Dark Soil Near Basement: Dark soil mixed with brick was identified by the contractor while conducting demolition activities near the basement in the southwest portion of the property. Langan collected two samples. One sample was placed on hold pending results. The other sample was analyzed for metals, TPH, and VOCs. Lead was detected at 130 mg/kg, exceeding the STLC and TCLP hazardous trigger values (50 and 100 mg/kg) and zinc was detected at 3,400 mg/kg, exceeding the STLC hazardous trigger value (2,500 mg/kg). At the Client's request, the sample was also analyzed for STLC and TCLP lead and STLC and TCLP Zinc. The STLC and TCLP lead results were 0.16 mg/L and non-detect, respectively. The STLC lead result was below the STLC limit of 5 mg/L. The STLC and TCLP zinc results were 29 mg/L and 1.3 mg/L, respectively. The STLC zinc result was below the STLC limit of 250 mg/L. There is no TCLP limit for zinc. Based on the preliminary sample results, it was determined that the soil could be reused as fill on the subject property.

Soil exceedances are shown on Figure 2.3. The metal and TPH exceedances left in place, as described above, are considered an environmental concern and used in our determination of REC-1.

4. ADJOINING PROPERTIES AND SURROUNDING AREA

The following sections describe current and historical uses of and database listings for adjoining properties and the surrounding area.

4.1 Current Use of Adjoining Properties and Surrounding Area

The current use of adjoining and surrounding properties is summarized in Table 4-1.

Table 4-1 Current Use of Adjoining Properties and Surrounding Area

Direction	Adjoining Properties	Surrounding Area
North	Bandini Boulevard followed by restaurants and a trucking school (3612 through 3698 S Soto Street).	Los Angeles River
East	Coast Packing (3275 E Vernon Avenue), a meat processing facility.	Distribution warehouses and pet food manufacturing facility.
South	E Vernon Avenue followed by a vacant lot (3094 E Vernon Avenue)	Railroad followed by pet food manufacturer (2809 E 44th Street) and distribution warehouse (2851 E 44th Street).
West	S Soto Street followed by restaurants, medical urgent care, retail stores, a gas station, and distribution warehouse (3733 through 3843 S Soto Street and 3030 through 3031 E Vernon Avenue).	Warehouses.

Langan observed a gas station to the west, topographically up-gradient from the subject property, and multiple ASTs on the east adjoining property with significant staining on the concrete below. These observations have a potential to be of environmental concern to the subject property.

4.2 Adjoining Properties and Surrounding Area History

Langan compiled the following summaries of the adjoining properties and surrounding area history based on a review of historical resources and interviews. Historical resources are provided in Appendix E.

Table 4-2 Historical Use of Adjoining Properties

Direction	Adjoining Properties
North	The northern adjoining property is depicted as undeveloped land and the Los Angeles River along the northeastern property line in the earliest topographic maps (1894 to 1899) and aerial photograph (1923). A railroad is visible along the northeastern property line in 1923 that partially remains to present-day. By 1928, the northern property contained warehouse structures and apparent ASTs along the southwest corner that are no longer visible by 1938 (aerial photographs). The Los Angeles River appears to be undergoing construction to pave the river in 1938 and was completed by 1948. The 1949 Sanborn Map identifies the property as Los Angeles Paving Co. which includes a meat market, auto shops, and dog food manufacturer. The property remained relatively unchanged until 1956, when the dog food manufacturer was no longer listed and an asphalt mixing area and sand and gravel mills are noted along the northeast property line. In 1963, a paint manufacturing building is indicated along the southwest property line (Sanborn Maps). By 1970, the southern portion of the property was demolished and Bandini Boulevard was constructed. In 2002, the remaining buildings on the northern portion were demolished and commercial buildings

Direction	Adjoining Properties
	were constructed, which remain to present-day. Database listings associated with the northern adjoining property are discussed in Section 4.3.
East	The eastern adjoining property is depicted as undeveloped on topographic maps in the 1890s. According to 1920s Sanborn maps and aerial photographs, the property was used for residential purposes. By 1938, the property was developed with industrial buildings (aerial photographs). In the 1949 Sanborn map, the property is noted as Coast Packaging Co., a meat processing facility, which has remained to present-day. The property has gone through various stages of development and auto repair shops and maintenance shops are indicated on the Sanborn maps. The warehouses have remained to present-day. Database listings associated with the east adjoining property are discussed in Section 4.3. Langan considered the historical use of the eastern adjacent property as an environmental concern to the subject property. Historical auto repair and maintenance facilities are known to have used PCE and TCE as an industrial degreaser. Due to the proximity to the subject property and potential presence of PCE and TCE in soil and soil vapor, the historical operations were used in our determination of REC-3.
South	The southern adjacent property was developed with a structure according to the 1890s topographic map. According to the 1920 Sanborn map, the property is occupied by dwellings. According to the 1948 and 1952 aerial photographs and 1949 Sanborn map, a gas station is located along the northwestern corner of the property. By 1970, this portion of the property was occupied by semi-truck trailers until 1983. By 1989, the western portion of the property was used as a parking lot and a structure in the central portion. The eastern portion of the property was occupied by dwellings between the 1928 and 1948 aerial photographs. Commercial activity was visible between the 1952 and 1994. By 2002, the eastern portion appears to be a maintenance yard. By 2005, the commercial structures along East Vernon Avenue are no longer visible. By 2020, all former structures in the eastern portion are no longer visible and the property appears to be a parking lot. According to Google Earth Imagery from August 2024, the previous parking lot and buildings were demolished and the property is in its present-day configuration of a vacant lot.
West	The western adjacent property was developed with a structure according to 1890s topographic maps. In the early 1920s, the property contained dwellings and commercial structures. By the late 1920s, the property was developed with industrial and commercial structures. The 1949 Sanborn map the property is noted as General Petroleum Corporation of California, a gas station, Cornelius Packing Co., a commercial property and Union Packing Company. The use of the property remains relatively unchanged by 1967 (Sanborn maps). The gas station is visible on aerial photographs until 1989 when a large portion of the property was graded. By 2002, the property was in its present-day configuration of warehouse, commercial properties, and parking lots. Langan considers the oil and gas operations and the potential presence of the historical gas station USTs to be an environmental concern to the subject property. Due to the proximity to the subject property and topographically up-gradient location, the historical use of the west adjacent properties was used in our determination of REC-3.

Direction	Adjoining Properties
	Database listings associated with the west adjoining properties are discussed in Section 4.3.

The surrounding area was depicted as sparsely developed in the 1890s topographic maps. Commercial and industrial development and vacant land is visible in the 1920s to the 1940s aerial photographs. By the 1950s, the surrounding area was predominantly developed with commercial and industrial buildings.

Since the early 1920s, aboveground oil tanks have been visible to the northwest of the subject property that remain to present day. Due to the historical oil and gas operations and up-gradient location, this facility is an environmental concern and is discussed in further detail in Section 4.3 and was used in our determination of REC-3.

4.3 Regulatory Database Review

Langan reviewed the environmental database report to evaluate if adjoining or surrounding area properties identified in the database report are suspected to represent an environmental concern for the subject property. If further information was deemed necessary to evaluate a potential REC for the subject property, Langan contacted an applicable regulatory agency to obtain additional records. Database and agency record information associated with adjoining properties are discussed in Section 4.3.1 and database and agency record information for surrounding properties of potential environmental concern for the subject property (see Section 8.2) are discussed in Section 4.3.2.

4.3.1 Adjoining Properties

Database listings for adjoining properties are summarized as follows.

Metro Wash & Laundry Inc – 3040 E Vernon Avenue, approximately 55-feet from the subject property (south adjoining, topographically down-gradient)

Metro Wash and Laundry Inc. is listed as a historical cleaner between 1999 and 2000. Given the known use of the subject property as a meat processing facility, this listing appears to be erroneous. Additionally, the address for Metro Wash and Laundry, Inc. is listed as 3040 East Vernon Avenue which is across South Soto Avenue, located approximately 70-feet west of the subject property (inferred cross-gradient). Historically, the property was a meat packing facility prior to the construction of a warehouse in approximately 1989. Due to the erroneous listing, this is not of environmental concern in connection with the subject property.

Pi 37th Street, LLC – 3655 S Soto Street, approximately 90-feet from the subject property (western adjoining, topographically up-gradient)

Pi is listed in the RCRA NonGen / NLR database. The facility is listed under the NAICS description: parking lots and garages. The facility is listed as a verified non-generator of hazardous material and Langan was unable to locate documentation pertaining to environmental spills or releases. Due to the lack of environmental spill documentation, this listing is not an environmental concern in connection with the subject property.

FJ Foodservice, LLC – 3883 S Soto Street, approximately 80-feet from the subject property (western adjoining, topographically up-gradient)

FJ Foodservice LLC is listed in the RCRA NonGen / NLR and AST databases. The facility is a verified non-generator of hazardous materials and there are no violations or evaluations for the site. Neither the size nor the contents of the AST are listed in the database and Langan was unable to review documents pertaining to spills or releases. Due to the lack of release documentation and non-generator status, this facility is not of environmental concern in connection with the subject property.

Smithfield Packaged Meats Corporation – 3883 S Soto Street, approximately 80-feet west of the subject property (western adjoining, topographically up-gradient)

This facility is located west of the subject property and is owned by Smithfield. Smithfield is identified in the HWTS, CERS HAZ WASTE, EMI, HAZNET, and CERS databases. The facility is listed as a hazardous waste generator and upon reviewing the waste records, the types and amounts of wastes do not appear to be of environmental concern. The facility has CERS violations pertaining to administrative matters. Smithfield is listed in the EMI database for air emissions. Due to the types and amounts of waste generated and types of violations, this facility does not appear to be of environmental concern in connection with the subject property.

Torrance Logistics Company – 3651 S Soto Street, approximately 98-feet northwest of the subject property (northwest adjoining, topographically up-gradient)

Torrance Logistics Company is listed in the RCRA NonGen / NLR database. The facility is a verified non-generator of hazardous materials and there are no violations or evaluations listed in the database. Due to the non-generator status, this facility is not an environmental concern in connection with the subject property.

Coast Packing Company – 3275 E Vernon Avenue, contiguous east adjacent property (inferred cross-gradient)

Coast Packaging Company is listed in the SWEEPS UST, Waste Discharge System (WDS), LUST, CORTESE, HIST UST, Enforcement Action (ENF), HIST CORTESE, NPDES, CIWQS, HWTS, CERS HAZ WASTE, HAZNET, CERS, and RCRA VSQG. Coast Packaging had a leaking UST in 1985 that according to EDR report and GeoTracker website, the leak stopped in 1996. A No Further Action letter was granted to Coast Packaging and additional documentation was requested from the RWQCB, who responded that additional records could not be found. Well permits for four USTs were found: two 10,000-gallon diesel tanks, one 10,000-gallon leaded gas tank, and one 1,000-gallon unleaded gas tank. From the available documents, it is unclear which tanks were leaking and if any have been removed. Coast Packaging has RWQCB violations for effluent discharges resulting in a settlement action in from 2007 to 2012.

Due to the known releases and potential for historical USTs to be present and leaking, this site is considered an environmental concern in connection with the subject property and was used in determining REC-3.

Taylor Bus Service – 3811 S Soto Street, approximately 89-feet west of the subject property (west adjoining property, topographically up-gradient):

Taylor Bus Service is listed in the RCRA-SQG, SWEEPS UST, HIST UST, FINDS, and ECHO databases. According to historical research, there was a gas station and auto repair facility in the vicinity of the listed address. The property is listed as a school bus yard according to a 1988 Los Angeles County State Water Resources Control Board (SWRCB) tank list. The list contains six containers: two 10,000-gallon diesel tanks, one 550-gallon waste oil sump, one 7,500-gallon

regular gas, and one 10,000-gallon regular gas tank. According to the SWEEPS database, the property contains 16 10,000-gallon diesel tanks, one 10,000-gallon regular gas tank, one 7,500-gallon leaded gas, 550-gallon waste oil tanks, and two 1,000-gallon motor oil tanks. Langan was unable to view documentation pertaining to environmental releases, closure reports, or removal reports. Due to the unknown status of these tanks and proximity to the subject property, this site is an environmental concern and is used in determining REC-3.

Max's Vernon Truck Center / Max Horowitz – 3745 S Soto Street, approximately 89-feet west of the subject property (west adjacent property, topographically up-gradient):

Max's Vernon Truck Center (Max's) is listed in the EDR Historical Auto (HIST AUTO) and HIST UST databases. Max's is listed as a gasoline service station from 1971 to 1983. According to the SWRCB, there are six USTs at this facility: one 1,000-gallon premium gas tank (installed 1939), one 10,000-gallon regular gasoline tank, one 8,000-gallon premium gas tank (installed in 1967), one 4,000-gallon unknown product tank (installed in 1950), one 6,000-gallon unleaded gasoline (installed in 1971), and a 280-gallon waste oil tank (installed in 1984). Langan was unable to review documentation pertaining to environmental spills or releases or documents relating to the status of the USTs. Due to the unknown status of these tanks and proximity to the subject property, this facility is an environmental concern and is used in determining REC-3.

US Healthworks Medical Group PC – 3851 S Soto Street, approximately 89-feet west of the subject property (west adjacent property, topographically up-gradient):

US Healthworks Medical Group PC is listed in the RCRA NonGen / NLR database. The facility is a verified non-generator of hazardous materials and there are no violations or evaluations within this database. Due to the non-generator status, this facility is not of environmental concern in connection with the subject property.

Vernon Soto Inc / Zohraj LLC DBA J&J Oil / Barents Inc. / Arco – 3031 E Vernon Avenue, approximately, approximately 89-feet west of the subject property (west adjacent property, topographically up-gradient):

This facility is listed in the RCRA NonGen / NLR, UST, CERS TANKS, RCRA-SQG, FINDS, ECHO, CERS HAZ WASTE, CERS TANKS, and SWEEPS UST databases. The facility has CERS violations pertaining to administrative matters and one relating the UST overfill prevention that was returned to compliance approximately two years after the initial violation notice. There are four listed 10,000-gallon USTs containing regular unleaded gasoline. Langan was unable to review records pertaining to spills or releases. Due to the violation relating to lack of overfill prevention that was unresolved for approximately 2-years and proximity to the subject property, this site is considered an environmental concern and is used in determining REC-3.

Chevron Station / Wallace Frank / 9411 – 3600 S Soto Street, approximately 100-feet north of the subject property (north adjacent property, topographically up-gradient):

This facility is listed in the SWEEPS UST, HIST UST, EDR HIST AUTO, RCRA-SQG, LUST FINDS, ECHO, CORTESE, HIST CORTESE, and CERS databases. This facility is listed as a gasoline station from 1978 to 1995.According to the SWEEPS and HIST UST databases, there are five USTs at this facility: three 10,000-gallon unleaded gasoline tanks (installed in 1984), one 10,000-gallon diesel tank (installed in 1992), and one 1,000-gallon waste oil tank (installed in 1984). The facility is listed in GeoTracker for a LUST and additional information was requested from the RWQCB and they responded that no records were found for the facility. Langan was unable to review documentation pertaining to the LUST case. The facility has been listed as a gasoline

station since 1978 but the earliest records of USTs was in 1984 and it is unknown if there were USTs on the property prior to 1984. Due to the LUST case unknown status of the USTs, and proximity to the subject property, this property is considered a REC and is used in determining REC-3.

Great American Packaging LLC– 4361 S Soto Street, approximately 89-feet southwest of the subject property (southwest adjoining property, topographically down-gradient):

This facility is listed in the CERS HAZ WASTE, NPDES, CIWQS, CERS, and RCR-SQG databases.

Great American Packaging is listed as a plastic, foil, and coated plastic bag manufacturer and there are listed CERS violations pertaining to administrative matters. The facility is listed in the NPDES and CIWQS databases for having an industrial wastewater permit. Langan was unable to review environmental spill or release documentation. Due to the types of violations, lack of release documentation, and down-gradient location from the subject property, this facility appears to have a low potential for environmental concern in connection to the subject property.

Magidow Aaron – 4361 S Soto Street, approximately 89-feet southwest of the subject property (southwest adjoining property, topographically down-gradient):

Magidow Aaron is listed in the EDR HIST AUTO database as a gasoline service station in 1967 and 1970; however, according to the 1967 Sanborn map, the property was occupied by Hi-Pro Meat Packing Co. and the property appears to be in the same configuration in the 1970 aerial photograph. Therefore, this listing appears to be erroneous.

Lineage Logistics / Los Angeles Cold Storage / US Growers Cold Storage – 2851 E 44th Street, approximately 50-seet south of the subject property (south adjacent property, topographically down-gradient):

These facilities are listed in the RCRA NonGen / NLR databases. They are verified non-generators of hazardous materials and there are no violations or evaluations found within the database. Due to the non-generator status and down-gradient location, these facilities do not appear to be of environmental concern in connection with the subject property.

Lineage Logistics Vernon 7-8 / LA Cold Storage – 2825 E 44th Street, approximately 50-feet south of the subject property (south adjacent property, topographically down-gradient):

These facilities are listed in the CERS HAZ WASTE, CERS, and RCRA NonGen / NLR databases. CERS identified violations pertaining to administrative matters and Lineage Logistics is listed as a hazardous waste generator and chemical storage facility. Langan was unable to review records pertaining to an environmental spill or release. Due to the type of violations and down-gradient location, these facilities do not appear to be of environmental concern in connection with the subject property.

4.3.2 Surrounding Area

Langan evaluated each of the database listings for surrounding area properties. Those warranting further discussion in the context of potential to represent an environmental concern for the subject property are discussed below.

Former Exide Facility – 2700 S Indiana Street, approximately 1.27-miles east of the subject property (topographically down-gradient)

According to the EDR database report, the subject property is located within the Former Exide Facility Area of Concern (AOC). The Former Exide Facility (Exide) historically operated as a lead-acid battery recycling and smelting facility since 1922. Exide provided a Notice of Intent to permanently close the facility in 2015 and due to the historical operations, a closure plan was developed in consultation with the DTSC. As part of the closure activities, the DTSC directed Exide to conduct soil sampling in residential areas that had the greatest potential for lead impacts, known as the Initial Assessment Areas. The results concluded that soil lead concentrations exceeding DTSC's screening levels for lead and were identified in nearly all the residential properties in the Initial Assessment Areas. The assessment area was expanded between 2014 and 2016 and cleanup efforts for 50 residential properties was completed in June 2016. The AOC was found to be a 1.7-mile radius of the Exide site.

The Former Exide Facility (Exide) historically operated as a lead-acid battery recycling and smelting facility from 1922 to 2015. Dust samples were collected by DTSC during a November 2019 sampling event on the facility and showed high concentrations of lead and other heavy metals onsite that pose an immediate or imminent risk to onsite personnel, nearby residents, and the environment. A property located approximately 0.5-miles east of the subject property was tested for aerially deposited lead and contained a soil lead concentration of 200 parts per million (ppm) and has been designated as a priority clean-up site. The subject property is located within the AOC for aerially deposited lead. The potential that lead may have been released to site soil or accumulated into stormwater systems at the subject property constitutes a REC.

Exxon Mobil Corporation / Mobil Oil Corporations / Vernon Terminal – 2709 E 37th Street, located approximately 650-feet west of the subject property (topographically up-gradient):

The facility is listed in the AST, EDR HIST AUTO, UST, RCR-large quantity generator (LQG), FUELS PROGRAM, HIST UST, CHNIRS, EMI, NPDES, WDS, CERS, CPS-SLIC, CIWQS, HWTS, CERS HAZ WASTE, HAZNET, CERS TANKS, and CERS databases. According to topographic maps and aerial photographs, the facility has operated as an oil and gas terminal since the early 1920s. The facility has ASTs with a total capacity of 12,309,000-gallons of gasoline and diesel. Historical SWRCB records indicate seven USTs at the facility: one 550-gallon waste oil tank, one 550-gallon motor oil tank, two 5,000-gallon diesel tanks, one 5,000-gallon unleaded gasoline tank, one 2,000-gallon regular gasoline tank, and one 20,000-gallon regular gas tank. The records do not indicate the installation date of the tanks and Langan was unable to review tank removal documentation. Due to the current and historical operations of the facility, unknown status of the USTs, and up-gradient location from the subject property, this facility is considered an environmental concern and used in determining REC-3.

5. CONCLUSIONS, FINDINGS AND OPINIONS

Langan completed a Phase I ESA consistent with the scope and limitations of ASTM E1527-21 for the property at 3049, 3095, and 3163 East (E) Vernon Avenue in the City of Vernon, California. Exceptions to, or deletions from, ASTM E1527-21 are described in Section 8 of this report.

This assessment has revealed the following RECs and significant data gap in connection with the subject property as presented in Table 5-1.

Table 5-1 Conclusions, Findings and Opinions

ASTM E1527-21 Scope Items
Recognized Environmental Conditions (RECs)
REC – 1: Historical Industrial Activity: There has been approximately 100 years of industrial activity on the subject property. Operations included meat packing and fiberboard manufacturing. Associated infrastructure included rail spurs, electrical substations, vehicle maintenance and repair areas, hydraulic lifts, and hazardous materials storage areas. The Sanborn maps for the subject property indicated the presence of auto repair and maintenance areas from the early 1920s to late 1960s. Historically, auto repair and maintenance facilities were known to use solvents, such as tetrachloroethylene (PCE) and trichloroethylene (TCE) as degreasers, as well petroleum products. During the Phase II ESA, PCE detections above applicable screening levels were measured (between 110 ug/m3 and 270 ug/m3) in two northern soil gas sample locations and one central soil gas sample location on the subject property. The presence of PCE and potential presence of PCE in other locations on the subject property are considered a REC. The meat packing operation included the use of hydraulic oil and other petroleum products as part of typical operations. Additionally, operations included washing down surfaces within the facility into floor drains ubiquitous inside of the buildings. During the 2023 Phase I ESA site recon, floor drains were observed in engine rooms and hazardous waste storage areas, where staining was observed during site reconnaissance. Corroded piping and floor drains within the Main Building were also observed during site reconnaissance. Petroleum products released into floor drain systems may have potentially impacted site soil and soil vapor. During the Phase II ESA investigations, observations during soil borings included volatile organic compound (VOC) screening via photoionization detector (PID) and total petroleum hydrocarbon (TPH) screening with Hanby® test kits. The screenings confirmed the potential for petroleum impacts. These observations, in addition to the presence of VOCs; including benzene, toluene, ethyl benzene, and xylenes, in soil vapor confirm that petroleum releases have occurred on the subject property. During Soil Management Plan (SMP) implementation, TPH was noted in some areas above applicable screening levels. The soil in these areas was left in place and will be managed during the site redevelopment. The presence of TPH in the soil is considered a REC.
REC – 2: Heavy Metal Detections on the Subject Property: The Former Exide Facility (Exide) historically operated as a lead-acid battery recycling and lead smelting facility from 1922 to 2015 and was located 1.27-miles east of the subject property. In addition, there were historical industrial activities in the vicinity of the subject property with heavy metal manufacturing and/or usage. During the demolition activities on the subject property in December 2023, limited areas of red soil were encountered in the northern portion of the subject property. Samples were collected from the red soil between January and February 2024 and analyzed for heavy metals, TPH, and VOCs. No TPH or VOCs were detected at levels exceeding applicable screening levels. Nine metals were detected above

ASTM E1527-21 Scope Items
applicable screening levels. Antimony was detected between 284 milligrams per kilogram (mg/kg) and 1,100 mg/kg; arsenic was detected between 21.9 mg/kg and 84 mg/kg; barium was detected between 3,000 mg/kg and 3,800 mg/kg; lead was detected between 2,400 mg/kg and 54,000 mg/kg; nickel was detected between 86 mg/kg and 190 mg/kg; and mercury was detected between 44 mg/kg and 65.3 mg/kg. GIC is currently working with the City of Vernon to collect additional data relative to the delineation of the red soil and to evaluate potential remedial options. The elevated levels of lead and other heavy metals measured in the soil in limited areas at the subject property are considered a REC.
REC – 3: Industrial Activity in the Surrounding Area: There has been approximately 100 years of industrial activity on the adjacent properties and in the surrounding area of the subject property. Operations included a battery smelting and recycling facility, oil and gas production, meat packing, and auto repair facilities. The north adjacent property and east adjoining property are the locations of historical Leaking Underground Storage Tank (LUST) cases. The west adjacent properties historically included gas stations, auto repair facilities, and the use of USTs for industrial purposes. An oil tank farm was present approximately 350-feet south of the subject property and visible on aerial photographs from 1923 to 1938. In 1948, remnant tank scars are visible and by 1952, the area was constructed with warehouses. According to topographic maps and aerial photographs, an oil and gas terminal, located northwest of the subject property, has been in operation since the early 1920s. Due to the current and historical operations in the vicinity of the subject property, the potential offsite sources of hazardous substances are considered a REC.
Controlled Recognized Environmental Conditions (CRECs)
Langan did not identify CRECs.
Historical Recognized Environmental Conditions (HRECs)
Langan did not identify HRECs.
De Minimis Conditions
Langan did not identify de minimis conditions.
Significant Data Gaps
Database listings indicate the presence of 24 USTs on the subject property. Five were reportedly removed and one was abandoned in place. Information regarding the remaining USTs was not available for review from the City of Vernon. During demolition activities, USTs or indicators of USTs (fill lines, UST vents, or UST dispensers) were not identified or encountered. Due to the removal of the previous surface structures, concrete flooring, and basements, it is considered unlikely that there are historical USTs remaining at the subject property.

6. ENVIRONMENTAL PROFESSIONAL STATEMENT

I declare that to the best of my professional knowledge and belief, I meet the definition of Environmental Professional as defined in Section 312.10 of 40 CFR Part 312 and I have the specific qualifications based on my education, training, and experience to assess a property of the nature, history, and setting of the subject property. I have developed and performed all appropriate inquiries in conformance with the standards and practices set forth in 40 CFR Part 312.



Robert S. (Rory) Johnston, PE, RCE 42332
Managing Principal (Environmental Professional)

Resumes outlining the qualifications of the project team and the Environmental Professional are included in Appendix G.

7. REFERENCES

Langan used the following sources to complete this Phase I ESA.

- ASTM E1527-21, Standard Practice for Environmental Property Assessments: Phase I Environmental Property Assessment Process, published 16 November 2021
- City of Vernon, Building Department and Fire Department, 12 December 2024
- Department of Toxic Substances Control, EnviroStor website, https://www.envirostor.dtsc.ca.gov/public/
- EBI Consulting, Phase I Environmental Site Assessment Report, 05 January 2023 US EPA
- EDR, Inc., Radius Map Report with GeoCheck, 27 November 2024
- EDR, Inc., City Directory Image Report, 27 November 2024
- EDR, Inc., Aerial Photographs, 27 November 2024
- EDR, Inc., Historical Topographic Map Report, 26 November 2024
- EDR, Inc., Sanborn Map Report, 2 December 2024
- Environmental Consulting, Inc. (ECI), Phase I Environmental Site Assessment, 725 Aspen Road, Summit County, Colorado, 20 October 2015
- Interstate Technology and Regulatory Council, Per and Polyfluoroalkyl Substances Technical and Regulatory Guidance, July 2023
- Langan CA, Inc., Red Fill Soils Observation & Testing Letter Report, 10 May 2024
- Langan CA, Inc., Soil Management Plan Progress Report, 31 July 2024
- Langan Engineering and Environmental Services, Inc., Phase I Environmental Site Assessment, 4 May 2023
- Langan Engineering and Environmental Services, Inc., Phase II Environmental Site Assessment, 30 May 2023
- Langan Engineering and Environmental Services, Inc, Soil Management Plan, 9 October 2023
- Los Angeles County Department of Public Works database, https://pw.lacounty.gov/epd/OpenFileReview/Default.aspx
- Los Angeles County Department of Public Works Groundwater Wells, https://dpw.lacounty.gov/general/wells/
- Los Angeles County Sanitation District reports, December 2023
- PFAS Exchange GIS Webviewer, https://experience.arcgis.com/experience/12412ab41b3141598e0bb48523a7c940/
- Regional Water Quality Control Board, GeoTracker website, https://geotracker.waterboards.ca.gov/
- Southern California Air Quality Management District reports, December 2024

- United States Census Bureau, North American Industry Classification System, https://www.census.gov/naics/
- US EPA 40 CFR Part 302 (EPA-HQ-OLEM-2019-0341; FRL-7204-03-OLEM), RIN 2050-AH09, Designation of Perfluorooctanoic Acid (PFOA) and Perfluorooctanesulfonic Acid (PFOS) as CERCLA Hazardous Substances, Final Rule, 8 May 2024
- US EPA ECHO database: http://echo.epa.gov/facilities searched 26 November 2024
- US EPA ECHO: PFAS Analytic Tools - https://echo.epa.gov/trends/pfas-tools
- US EPA ENVIROFACTS database: https://www3.epa.gov/enviro/ searched 27 November 2024
- US EPA MyProperty database: https://www3.epa.gov/enviro/facts/myproperty/ searched 27 November 2024

Table 7-1 Dates of Assessment Components

COMPONENT	DATE
Interviews	4 December 2024
Review of government records	December 2024
Site reconnaissance	4 December 2024
Declaration by Environmental Professional	DRAFT

8. LIMITATIONS AND DEFINITIONS

This Phase I ESA report was prepared for Client and is intended to be used in its entirety. Excerpts taken from this report are not necessarily representative of the assessment findings. The Client is the sole intended beneficiary of the report. The user requested no special terms or conditions regarding this Phase I ESA.

Langan's scope of services, which is described in Section 1.2 and in the contract executed between Langan and the Client, was limited to that agreed to with the Client/user and no other services beyond those explicitly stated are implied. To the extent possible, the services performed and agreed upon for this Phase I ESA are consistent with the guidelines of ASTM E1527-21.

This report is not intended to be an exhaustive assessment of the subject property. The purpose of the Phase I ESA is to reduce uncertainty about unknown conditions at the subject property. No environmental site assessment can wholly eliminate uncertainty regarding the potential for RECs in connection with a subject property. Therefore, Langan cannot "verify", "insure", "certify", or "guarantee" that the subject property is free of environmental concerns.

No expressed or implied representation or warranty is included or intended in this report, except that our services were completed using the care and skill ordinarily followed by professionals providing similar services under similar circumstances in similar locations at the same point in time.

The conclusions provided in this report are based solely on information obtained through completing the standard activities required by ASTM E1527-21 and are intended exclusively for the purpose stated herein, at the specified subject property, as it existed at the point in time the assessment was completed. The conclusions provided in this report do not apply to conditions and features of which Langan was not made aware of through good faith efforts to complete the activities required by ASTM E1527-21 and did not have the opportunity to evaluate.

8.1 ASTM Definitions

The following definitions are provided in ASTM E1527-21 and presented below for reference. This section is not a comprehensive list of definitions provided in ASTM E1527-21 and is intended to summarize those pertinent to this Phase I ESA report.

Activity and use limitations (AULs): legal or physical restrictions or limitations on the use of, or access to, a site or facility: (1) to reduce or eliminate potential exposure to hazardous substances or petroleum products in the soil, soil vapor, groundwater, and/or surface water on the property, or (2) to prevent activities that could interfere with the effective-ness of a response action, in order to ensure maintenance of a condition of no significant risk to public health or the environment. These legal or physical restrictions, which may include institutional and/or engineering controls, are intended to prevent adverse impacts to individuals or populations that may be exposed to hazardous substances and petroleum products in the soil, soil vapor, groundwater, and/or surface water on a property.

Adjoining properties: any real property or properties the border of which is contiguous or partially contiguous with that of the subject property, or that would be contiguous or partially contiguous with that of the subject property but for a street, road, or other public thoroughfare separating them.

All Appropriate Inquiries: that inquiry constituting all appropriate inquiries into the previous ownership and uses of the subject property consistent with good commercial and customary practice as defined in CERCLA, 42 U.S.C.§ 9601(35)(B) and 40 C.F.R. Part 312, that will qualify a party to a commercial real estate transaction for one of the threshold criteria for satisfying the LLPs to CERCLA liability (42U.S.C. §§ 9601(35)(A) & (B), § 9607(b)(3), § 9607(q), and§ 9607(r)), assuming compliance with other elements of the defense.

Approximate minimum search distance: the area for which records must be obtained and reviewed pursuant to ASTM E1527-21 Section 8 subject to the limitations provided in that section. This may include areas outside the subject property and shall be measured from the nearest subject property boundary. This term is used in lieu of radius to include irregularly shaped properties.

Business environmental risk (BER): a risk which can have a material environmental or environmentally-driven impact on the business associated with the current or planned use of commercial real estate, not necessarily related to those environmental issues required to be investigated in this practice. Consideration of BER issues may involve addressing one or more non-scope considerations.

Controlled recognized environmental condition (CREC): recognized environmental condition affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities with hazardous substances or petroleum products allowed to remain in place subject to implementation of required controls (for example, activity and use limitations or other property use limitations).

Data gap: a lack of or inability to obtain information required by this practice despite good faith efforts by the environmental professional to gather such information. Data gaps may result from incompleteness in any of the activities required by this practice, including, but not limited to, site reconnaissance (for example, an inability to conduct the site visit), and interviews (for example, an inability to interview the key site manager, regulatory officials, etc.).

De minimis condition: a condition related to a release that generally does not present a threat to human health or the environment and that generally would not be the subject of an enforcement action if brought to the attention of appropriate governmental agencies. A condition determined to be a de minimis condition is not a recognized environmental condition nor a controlled recognized environmental condition.

Engineering controls: physical modifications to a site or facility (for example, capping, slurry walls, or point of use water treatment) to reduce or eliminate the potential for exposure to hazardous substances or petroleum products in the soil or groundwater on a property. Engineering controls are a type of activity and use limitation (AUL).

Environment: environment shall have the same meaning as the definition of environment in CERCLA 42 U.S.C. § 9601(8).

Historical recognized environmental condition (HREC): previous release of hazardous substances or petroleum products affecting the subject property that has been addressed to the satisfaction of the applicable regulatory authority or authorities and meeting unrestricted use criteria established by the applicable regulatory authority or authorities without subjecting the subject property to any controls (for example, activity and use limitations or other property use limitations). A historical recognized environmental condition is not a recognized environmental condition.

Institutional controls (IC): a legal or administrative mechanism (for example, "deed restrictions," restrictive covenants, easements, or zoning) on the use of, or access to, a site or facility to (1) reduce or eliminate potential exposure to hazardous substances or petroleum products in the soil or groundwater on the property, or (2) to prevent activities that could interfere with the effectiveness of a response action, in order to ensure maintenance of a condition of no significant risk to public health or the environment. An institutional control is a type of activity and use limitation (AUL).

Key site manager: the person identified by the owner or operator of a subject property as having good knowledge of the uses and physical characteristics of the subject property.

Material threat: obvious threat which is likely to lead to a release and that, in the opinion of the environmental professional, would likely result in impact to public health or the environment.

Obvious: that which is plain or evident; a condition or fact that could not be ignored or overlooked by a reasonable observer.

Property use limitation: limitation or restriction on current or future use of a property in connection with a response to a release, in accordance with the applicable regulatory authority or authorities that allows hazardous sub-stances or petroleum products to remain in place at concentrations exceeding unrestricted use criteria.

Reasonably ascertainable: information that is (1) publicly available, (2) obtainable from its source within reasonable time and cost constraints, and (3) practically reviewable.

Recognized environmental conditions: (1) the presence of hazardous substances or petroleum products in, on, or at the subject property due to a release to the environment; (2) the likely presence of hazardous substances or petroleum products in, on, or at the subject property due to a release or likely release to the environment; or (3) the presence of hazardous substances or petroleum products in, on, or at the subject property under conditions that pose a material threat of a future release to the environment. For the purposes of this definition, "likely" is that which is neither certain nor proved, but can be expected or believed by a reasonable observer based on the logic and/or experience of the environmental professional, and/or available evidence, as stated in the report to support the opinions given therein.

Release: a release of any hazardous substance or petroleum product shall have the same meaning as the definition of "release" in CERCLA 42 U.S.C. § 9601(22). There are a number of statutory exclusions from the definition of release that may impact the environmental professional's opinions and conclusions, such as the normal application of fertilizer.

Significant data gap: a data gap that affects the ability of the environmental professional to identify a recognized environmental condition.

Site reconnaissance: that part that is contained in Section 9 of ASTM E1527-21 and addresses what should be done in connection with the site visit. The site reconnaissance includes, but is not limited to, the site visit done in connection with such a Phase I Environmental Site Assessment.

Site visit: the visit of the subject property during which observations are made constituting the site reconnaissance section of this practice.

Subject property: the property that is the subject of the environmental site assessment described in this practice.

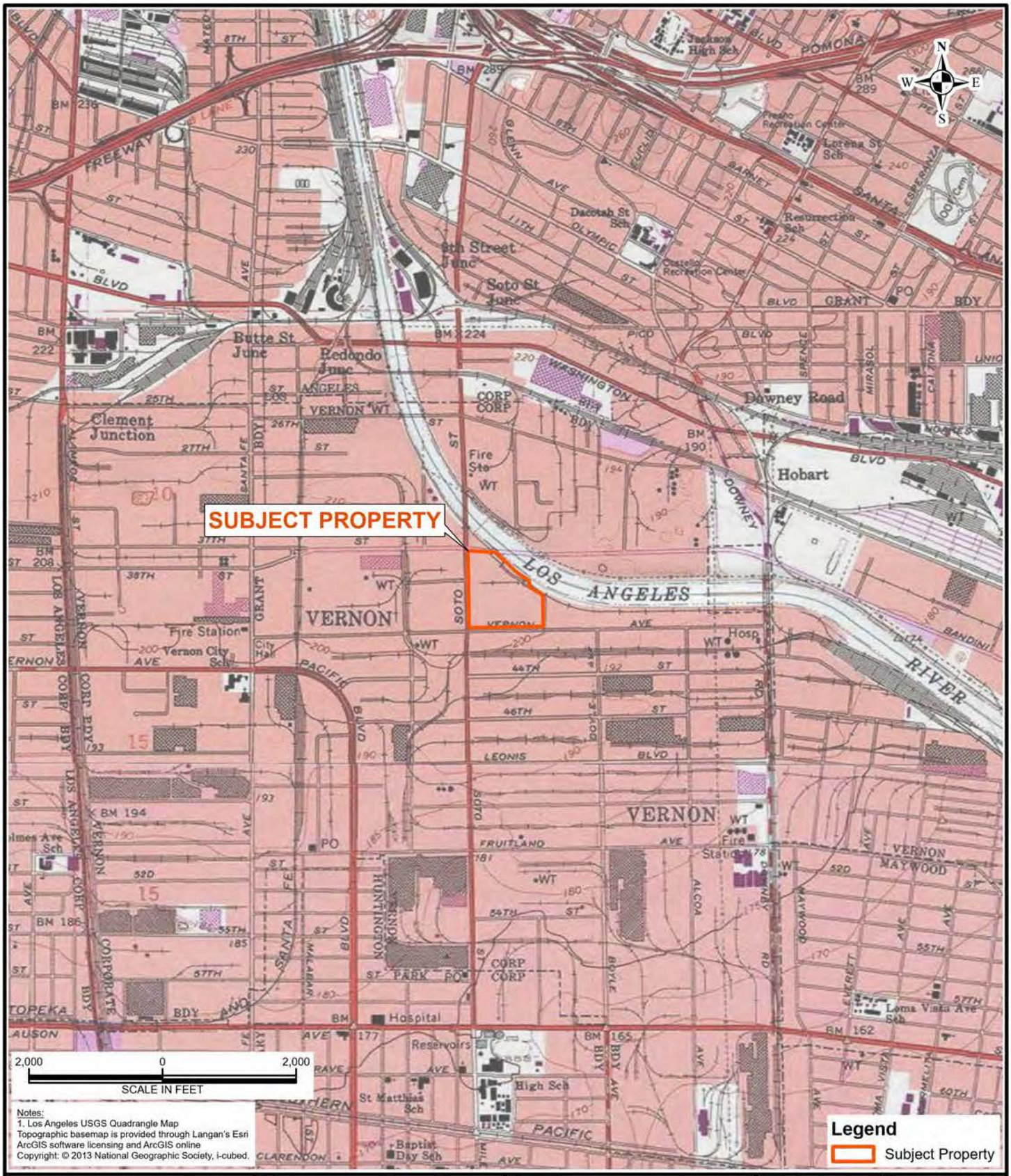
User: the party seeking to use ASTM E1527-21 to complete an environmental site assessment of the subject property.

8.2 Standard Environmental Record Sources

Langan reviewed an environmental database search report prepared by an environmental database search provider for the subject property and surrounding area. The database search report includes a listing of properties identified on select federal, state, local and tribal standard source environmental databases within the approximate minimum search radii outlined in ASTM E1527-21. This information was supplied to Langan by the environmental database search provider, and to the environmental database search provider by government sources; therefore, neither Langan nor the environmental database search provider can verify the completeness and accuracy of the database information. Appendix F contains a copy of the report, with specific source and property descriptions, and the dates of the last update for each database searched. Langan reviewed the database search report on a record-by-record basis to evaluate if certain properties identified in the database report are likely to represent an environmental concern for the subject property. The evaluation criteria included factors such as distance, groundwater gradient, nature of the listing, and regulatory status. Unless specifically discussed in the body of this report, the facilities listed on the database do not appear to represent an environmental concern to the subject property.

APPENDIX A

FIGURES



LANGAN

Langan CA, Inc.

1960 East Grand Avenue, Suite 585
El Segundo, California 90245

T: 213.314.8100 F: 213.314.8101
www.langan.com

Project	3049 EAST VERNON AVE VERNON LOS ANGELES COUNTY CALIFORNIA
Figure Title	SUBJECT PROPERTY LOCATION MAP
Project No.	721040501
Date	12/19/2024
Scale	1" = 2,000 feet
Drawn By	AC
Figure	1

© 2024 Langan

Path: \\langan.com\data\LAX\data5\721040501\Project Data\ArcGIS\APRX_APRX 721040501\721040501.aprx



LANGAN
Langan CA, Inc.
1960 East Grand Avenue, Suite 585
El Segundo, California 90245
T: 213.314.8100 F: 213.314.8101
www.langan.com

Project
3049 EAST VERNON AVE
VERNON
LOS ANGELES COUNTY CALIFORNIA

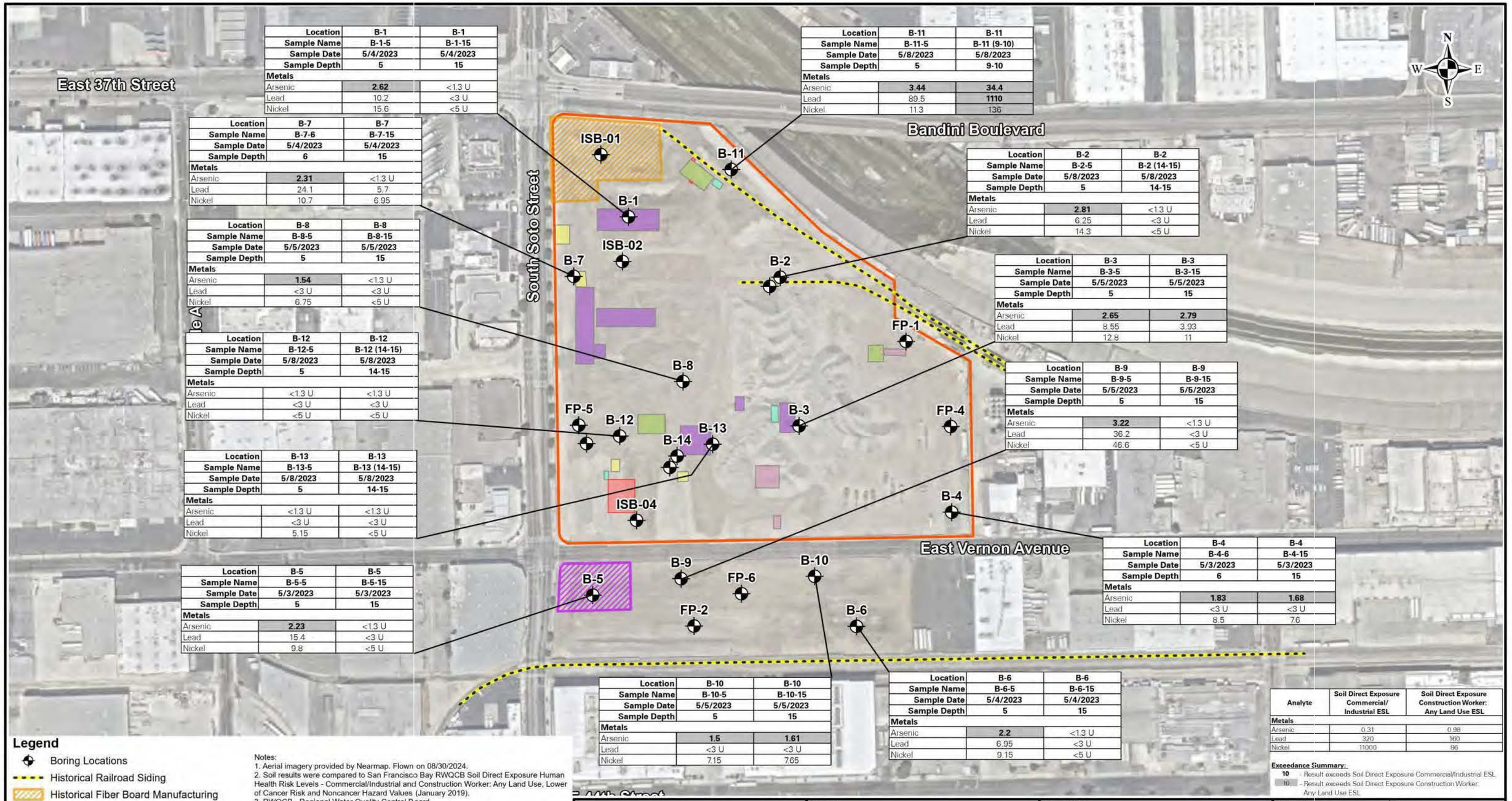
Figure Title
SUBJECT PROPERTY LAYOUT

Project No.	721040501
Date	12/19/2024
Scale	1" = 250 feet
Drawn By	AC

Figure
2

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Location	B-1	B-1
Sample Name	B-1-5	B-1-15
Sample Date	5/4/2023	5/4/2023
Sample Depth	5	15
Metals		
Arsenic	**2.62**	<1.3 U
Lead	10.2	<3 U
Nickel	15.6	<5 U

Location	B-11	B-11
Sample Name	B-11-5	B-11 (9-10)
Sample Date	5/8/2023	5/8/2023
Sample Depth	5	9-10
Metals		
Arsenic	**3.44**	**34.4**
Lead	89.5	**1110**
Nickel	11.3	136

Location	B-7	B-7
Sample Name	B-7-6	B-7-15
Sample Date	5/4/2023	5/4/2023
Sample Depth	6	15
Metals		
Arsenic	**2.31**	<1.3 U
Lead	24.1	5.7
Nickel	10.7	6.95

Location	B-2	B-2
Sample Name	B-2-5	B-2 (14-15)
Sample Date	5/8/2023	5/8/2023
Sample Depth	5	14-15
Metals		
Arsenic	**2.81**	<1.3 U
Lead	6.25	<3 U
Nickel	14.3	<5 U

Location	B-8	B-8
Sample Name	B-8-5	B-8-15
Sample Date	5/5/2023	5/5/2023
Sample Depth	5	15
Metals		
Arsenic	**1.54**	<1.3 U
Lead	<3 U	<3 U
Nickel	6.75	<5 U

Location	B-3	B-3
Sample Name	B-3-5	B-3-15
Sample Date	5/5/2023	5/5/2023
Sample Depth	5	15
Metals		
Arsenic	**2.65**	**2.79**
Lead	8.55	3.93
Nickel	12.8	11

Location	B-12	B-12
Sample Name	B-12-5	B-12 (14-15)
Sample Date	5/8/2023	5/8/2023
Sample Depth	5	14-15
Metals		
Arsenic	<1.3 U	<1.3 U
Lead	<3 U	<3 U
Nickel	<5 U	<5 U

Location	B-9	B-9
Sample Name	B-9-5	B-9-15
Sample Date	5/5/2023	5/5/2023
Sample Depth	5	15
Metals		
Arsenic	**3.22**	<1.3 U
Lead	36.2	<3 U
Nickel	46.6	<5 U

Location	B-13	B-13
Sample Name	B-13-5	B-13 (14-15)
Sample Date	5/8/2023	5/8/2023
Sample Depth	5	14-15
Metals		
Arsenic	<1.3 U	<1.3 U
Lead	<3 U	<3 U
Nickel	5.15	<5 U

Location	B-4	B-4
Sample Name	B-4-6	B-4-15
Sample Date	5/3/2023	5/3/2023
Sample Depth	6	15
Metals		
Arsenic	**1.83**	**1.68**
Lead	<3 U	<3 U
Nickel	8.5	7.6

Location	B-5	B-5
Sample Name	B-5-5	B-5-15
Sample Date	5/3/2023	5/3/2023
Sample Depth	5	15
Metals		
Arsenic	**2.23**	<1.3 U
Lead	15.4	<3 U
Nickel	9.8	<5 U

Location	B-10	B-10
Sample Name	B-10-5	B-10-15
Sample Date	5/5/2023	5/5/2023
Sample Depth	5	15
Metals		
Arsenic	**1.5**	**1.61**
Lead	<3 U	<3 U
Nickel	7.15	7.65

Location	B-6	B-6
Sample Name	B-6-5	B-6-15
Sample Date	5/4/2023	5/4/2023
Sample Depth	5	15
Metals		
Arsenic	**2.2**	<1.3 U
Lead	6.95	<3 U
Nickel	9.15	<5 U

Analyte	Soil Direct Exposure Commercial/ Industrial ESL	Soil Direct Exposure Construction Worker: Any Land Use ESL
Metals		
Arsenic	0.31	0.98
Lead	320	160
Nickel	11000	86

Exceedance Summary:

10 - Result exceeds Soil Direct Exposure Commercial/Industrial ESL

10 - Result exceeds Soil Direct Exposure Construction Worker: Any Land Use ESL

Legend

- Boring Locations
- Historical Railroad Siding
- Historical Fiber Board Manufacturing
- Historical Gas Station
- Historical Auto Repair Shop
- Historical Substation
- Historical UST
- Historical Engine Room
- Historical Maintenance Buildings
- Historical Hazardous Waste Storage Area
- Subject Property

Notes:
1. Aerial imagery provided by Nearmap. Flown on 08/30/2024.
2. Soil results were compared to San Francisco Bay RWQCB Soil Direct Exposure Human Health Risk Levels - Commercial/Industrial and Construction Worker: Any Land Use, Lower of Cancer Risk and Noncancer Hazard Values (January 2019).
3. RWQCB - Regional Water Quality Control Board
4. mg/kg - Milligrams per kilogram
5. <RL - Not detected
6. ESL - Environmental Screening Limit
7. RL - Reporting Limit

Qualifiers:
U - The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.

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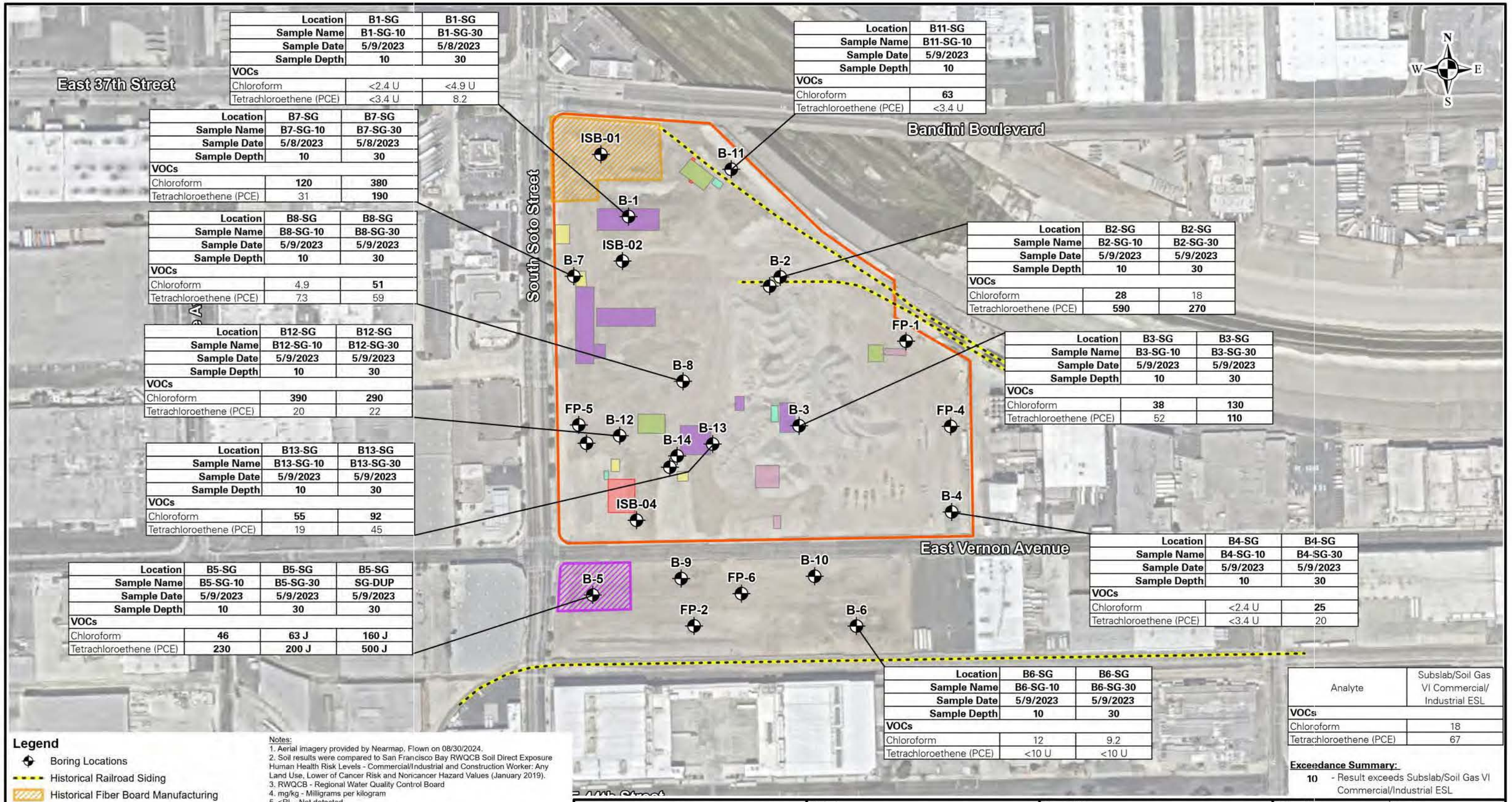
Figure Title
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Figure **2.1**

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Location	B1-SG	B1-SG
Sample Name	B1-SG-10	B1-SG-30
Sample Date	5/9/2023	5/8/2023
Sample Depth	10	30
VOCs		
Chloroform	<2.4 U	<4.9 U
Tetrachloroethene (PCE)	<3.4 U	8.2

Location	B11-SG
Sample Name	B11-SG-10
Sample Date	5/9/2023
Sample Depth	10
VOCs	
Chloroform	**63**
Tetrachloroethene (PCE)	<3.4 U

Location	B7-SG	B7-SG
Sample Name	B7-SG-10	B7-SG-30
Sample Date	5/8/2023	5/8/2023
Sample Depth	10	30
VOCs		
Chloroform	**120**	**380**
Tetrachloroethene (PCE)	31	**190**

Location	B8-SG	B8-SG
Sample Name	B8-SG-10	B8-SG-30
Sample Date	5/9/2023	5/9/2023
Sample Depth	10	30
VOCs		
Chloroform	4.9	**51**
Tetrachloroethene (PCE)	7.3	59

Location	B2-SG	B2-SG
Sample Name	B2-SG-10	B2-SG-30
Sample Date	5/9/2023	5/9/2023
Sample Depth	10	30
VOCs		
Chloroform	**28**	18
Tetrachloroethene (PCE)	**590**	**270**

Location	B12-SG	B12-SG
Sample Name	B12-SG-10	B12-SG-30
Sample Date	5/9/2023	5/9/2023
Sample Depth	10	30
VOCs		
Chloroform	**390**	**290**
Tetrachloroethene (PCE)	20	22

Location	B3-SG	B3-SG
Sample Name	B3-SG-10	B3-SG-30
Sample Date	5/9/2023	5/9/2023
Sample Depth	10	30
VOCs		
Chloroform	**38**	**130**
Tetrachloroethene (PCE)	52	**110**

Location	B13-SG	B13-SG
Sample Name	B13-SG-10	B13-SG-30
Sample Date	5/9/2023	5/9/2023
Sample Depth	10	30
VOCs		
Chloroform	**55**	**92**
Tetrachloroethene (PCE)	19	45

Location	B4-SG	B4-SG
Sample Name	B4-SG-10	B4-SG-30
Sample Date	5/9/2023	5/9/2023
Sample Depth	10	30
VOCs		
Chloroform	<2.4 U	**25**
Tetrachloroethene (PCE)	<3.4 U	20

Location	B5-SG	B5-SG	B5-SG
Sample Name	B5-SG-10	B5-SG-30	SG-DUP
Sample Date	5/9/2023	5/9/2023	5/9/2023
Sample Depth	10	30	30
VOCs			
Chloroform	**46**	**63 J**	**160 J**
Tetrachloroethene (PCE)	**230**	**200 J**	**500 J**

Location	B6-SG	B6-SG
Sample Name	B6-SG-10	B6-SG-30
Sample Date	5/9/2023	5/9/2023
Sample Depth	10	30
VOCs		
Chloroform	12	9.2
Tetrachloroethene (PCE)	<10 U	<10 U

Analyte	Subslab/Soil Gas VI Commercial/ Industrial ESL
VOCs	
Chloroform	18
Tetrachloroethene (PCE)	67

Exceedance Summary:

10 - Result exceeds Subslab/Soil Gas VI Commercial/Industrial ESL

Legend

- Boring Locations
- Historical Railroad Siding
- Historical Fiber Board Manufacturing
- Historical Gas Station
- Historical Auto Repair Shop
- Historical Substation
- Historical UST
- Historical Engine Room
- Historical Maintenance Buildings
- Historical Hazardous Waste Storage Area
- Subject Property

Notes:
1. Aerial imagery provided by Nearmap. Flown on 08/30/2024.
2. Soil results were compared to San Francisco Bay RWQCB Soil Direct Exposure Human Health Risk Levels - Commercial/Industrial and Construction Worker: Any Land Use, Lower of Cancer Risk and Noncancer Hazard Values (January 2019).
3. RWQCB - Regional Water Quality Control Board
4. mg/kg - Milligrams per kilogram
5. <RL - Not detected
6. ESL - Environmental Screening Limit
7. RL - Reporting Limit

Qualifiers:
U - The analyte was analyzed for, but was not detected at a level greater than or equal to the level of the RL or the sample concentration for results impacted by blank contamination.
J - The analyte was positively identified and the associated numerical value is the approximate concentration of the analyte in the sample.

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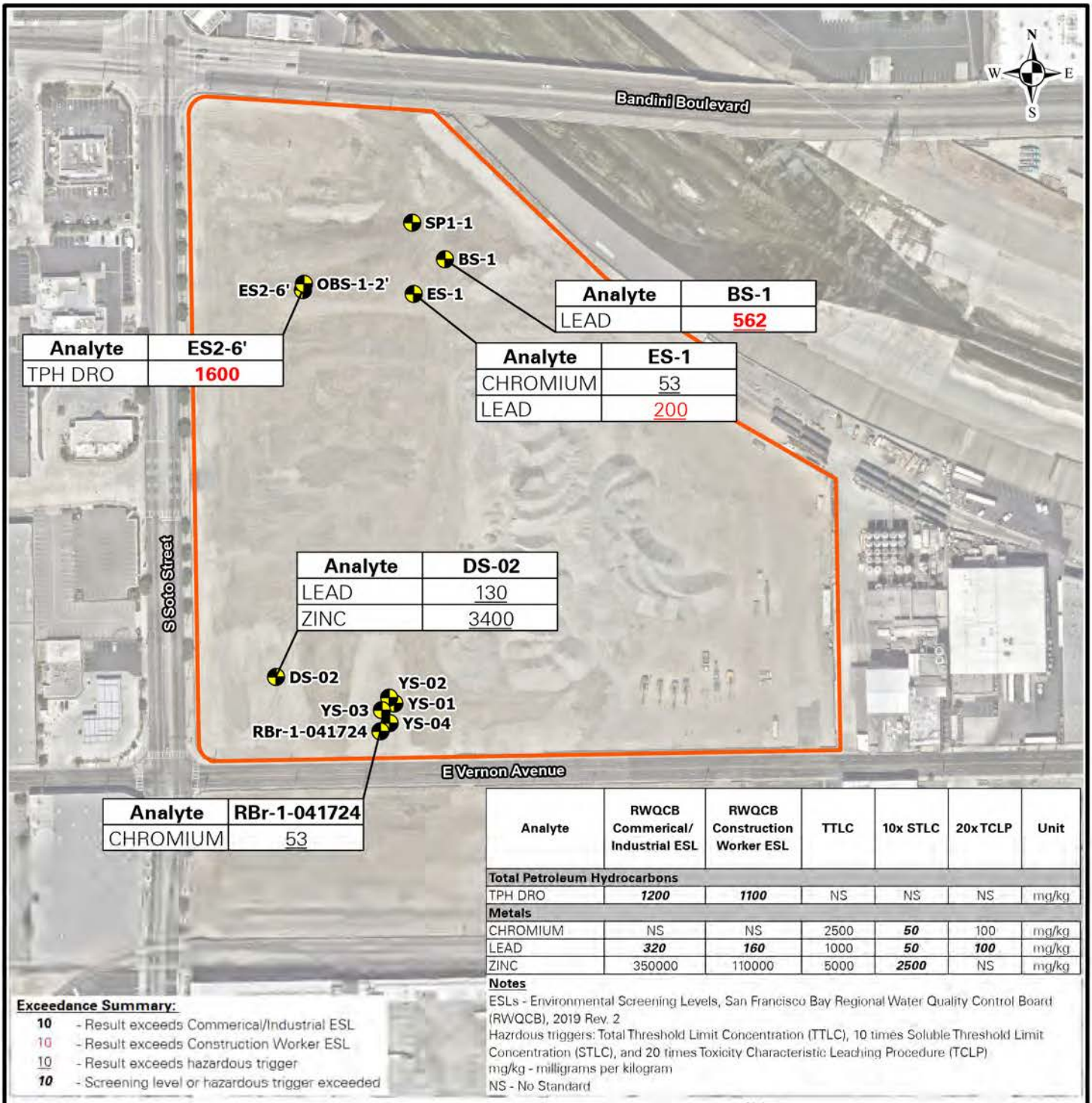
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Figure 2.2

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Analyte	RWQCB Commerical/ Industrial ESL	RWQCB Construction Worker ESL	TTLC	10x STLC	20x TCLP	Unit
Total Petroleum Hydrocarbons						
TPH DRO	***1200***	***1100***	NS	NS	NS	mg/kg
Metals						
CHROMIUM	NS	NS	2500	***50***	100	mg/kg
LEAD	***320***	***160***	1000	***50***	***100***	mg/kg
ZINC	350000	110000	5000	***2500***	NS	mg/kg

Notes

ESLs - Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board (RWQCB), 2019 Rev. 2

Hazrdous triggers: Total Threshold Limit Concentration (TTLC), 10 times Soluble Threshold Limit Concentration (STLC), and 20 times Toxicity Characteristic Leaching Procedure (TCLP)

mg/kg - milligrams per kilogram

NS - No Standard

Exceedance Summary:

10 - Result exceeds Commerical/Industrial ESL

10 - Result exceeds Construction Worker ESL

10 - Result exceeds hazardous trigger

10 - Screening level or hazardous trigger exceeded

Legend

Sample Location

Subject Property

Notes:
1. Aerial imagery provided by Nearmap. Flown on 08/30/2024.
2. All locations shown are approximate.

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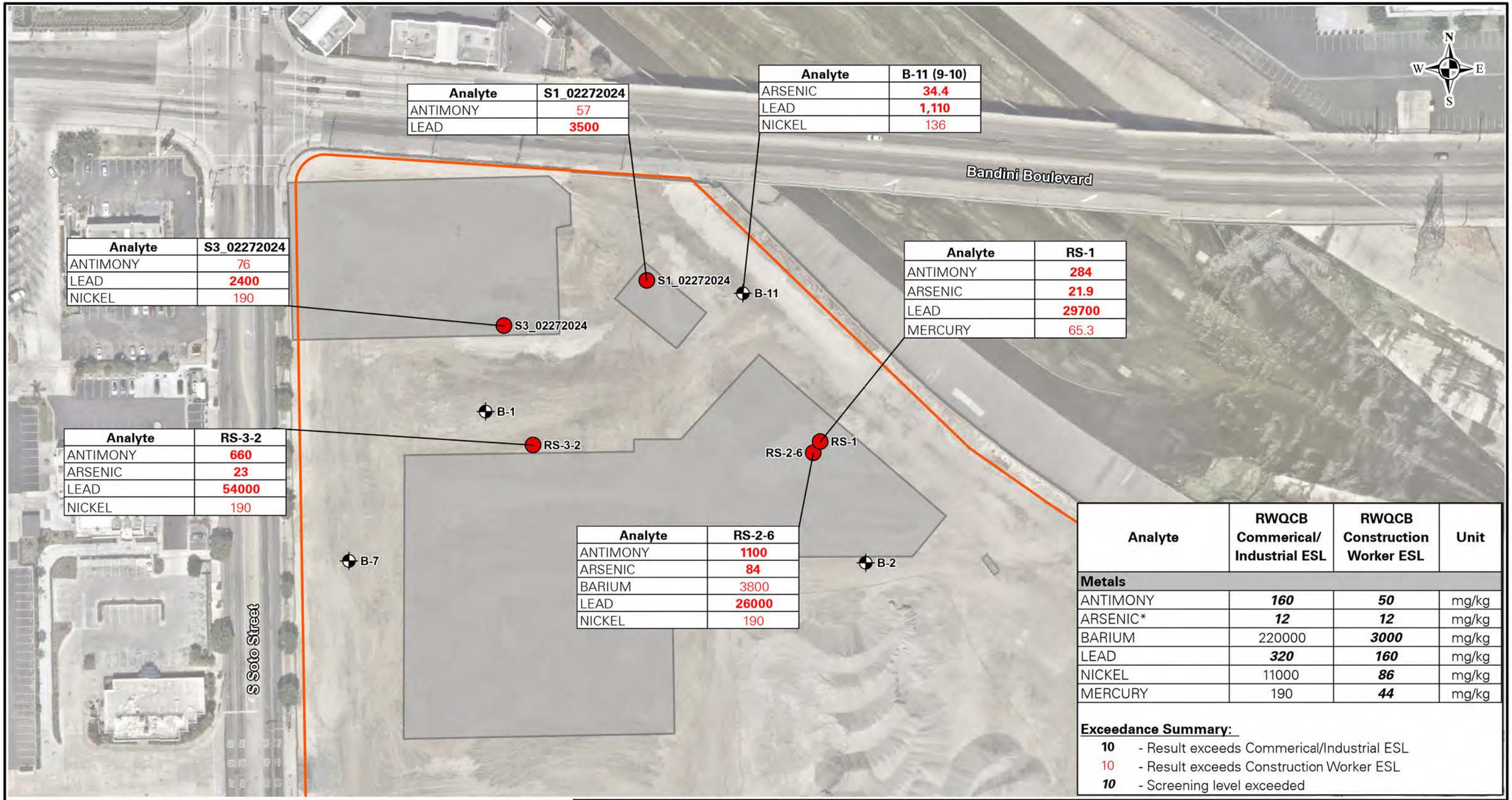
Figure Title: SMP SOIL EXCEEDANCES

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Figure: 2.3

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Analyte	S1_02272024
ANTIMONY	57
LEAD	**3500**

Analyte	B-11 (9-10)
ARSENIC	**34.4**
LEAD	**1,110**
NICKEL	136

Analyte	S3_02272024
ANTIMONY	76
LEAD	**2400**
NICKEL	190

Analyte	RS-1
ANTIMONY	**284**
ARSENIC	**21.9**
LEAD	**29700**
MERCURY	65.3

Analyte	RS-3-2
ANTIMONY	**660**
ARSENIC	**23**
LEAD	**54000**
NICKEL	190

Analyte	RS-2-6
ANTIMONY	**1100**
ARSENIC	**84**
BARIUM	3800
LEAD	**26000**
NICKEL	190

Analyte	RWQCB Commerical/ Industrial ESL	RWQCB Construction Worker ESL	Unit
Metals			
ANTIMONY	***160***	***50***	mg/kg
ARSENIC*	***12***	***12***	mg/kg
BARIUM	220000	***3000***	mg/kg
LEAD	***320***	***160***	mg/kg
NICKEL	11000	***86***	mg/kg
MERCURY	190	***44***	mg/kg

Exceedance Summary:

10 - Result exceeds Commerical/Industrial ESL

10 - Result exceeds Construction Worker ESL

10 - Screening level exceeded

Legend

- Boring Location
- Red Soil Present
- Subject Property
- Building Outline

Notes:
1. Aerial imagery provided by Nearmap. Flown on 08/30/2024.
2. All locations shown are approximate.
3. * Below accepted background arsenic level of 12 mg/kg.
4. Hazardous trigger is the minimum of the TTLC, 10xSTLC, and 20xTCLP.

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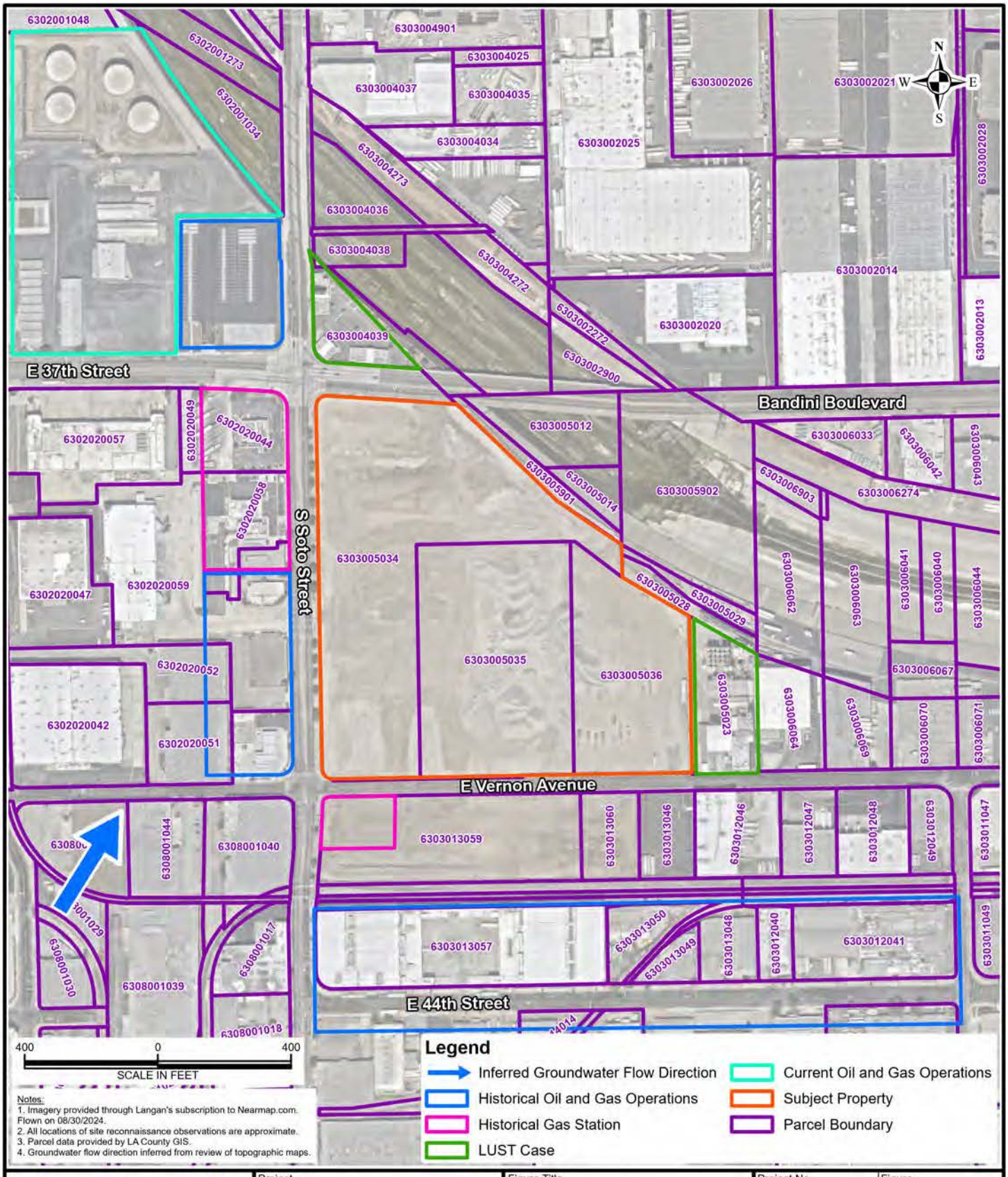
Figure Title
RED FILL SOIL EXCEEDANCES

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Figure 2.4

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Notes:
1. Imagery provided through Langan's subscription to Nearmap.com. Flown on 08/30/2024.
2. All locations of site reconnaissance observations are approximate.
3. Parcel data provided by LA County GIS.
4. Groundwater flow direction inferred from review of topographic maps.

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Figure Title	NEARBY PROPERTIES MAP
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Figure	3

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APPENDIX B

AGENCY RECORDS AND OTHER REPORTS

PHASE II ENVIRONMENTAL SITE INVESTIGATION

Smithfield Packaged Meats Corporation
3049, 3094, 3095, 3163, and 3200 East Vernon Avenue
Vernon, California

Prepared for:

Goodman
18301 Von Karmen Avenue, Suite 1170
Irvine, California 92612

Prepared by:

Langan Engineering and Environmental Services, Inc.
515 South Flower Street, Suite 1060
Los Angeles, California 90071



Nick Cutler
Project Manager



Rory Johnston, P.E.
Managing Principal

LANGAN

May 30, 2023
721040501

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Appendix B Soil Boring Logs
Appendix C Soil Vapor Sampling Logs
Appendix D Hand-Auger Boring Logs
Appendix E Laboratory Analytical Report

PHASE II ENVIRONMENTAL SITE INVESTIGATION
3049, 3094, 3095, 3163, and 3200 East Vernon Avenue
Vernon, California 90058

1.0 INTRODUCTION AND BACKGROUND

Langan Engineering & Environmental Services, Inc. (Langan) has prepared this report on behalf of Goodman to document the results of a Phase II Environmental Site Assessment (ESA) for the Smithfield Packaged Meats Corporation (Smithfield) facility located at 3049, 3095, 3163 East Vernon Avenue in the City of Vernon, California (the "subject property") under the written authorization of Goodman ("Client"). A subject property Site Plan is provided as Figure 1. The Phase II ESA activities were completed on May 3 through 12, 2023.

The subject property spans north and south of East Vernon Avenue and is occupied by Smithfield. The northern portion is improved with eight warehouse buildings and an engine room. Railroad spurs extend onto the eastern side of the subject property that have been abandoned in place. Subject property operations formerly included pork processing and distribution, the storage and use of ammonia in refrigeration systems, and the use of electrical and hydraulic equipment to transport ammonia and animal byproducts throughout the site. The southern portion of the subject property is currently improved with a parking lot.

Historically, the subject property north of East Vernon Avenue was occupied by meat packing facilities (1920 to present), fiberboard manufacturer (1928 to 1956), and auto repair shops (1920 to present). South of East Vernon Avenue, the subject property was occupied with a gas station (1948 to 1952) and a paving company (1933 to 1967).

Langan completed a Draft Phase I Environmental Site Assessment (ESA), dated May 3, 2023, for the subject property. The Draft Phase I ESA identified three Recognized Environmental Conditions (RECs):

- REC-1 Historical Industrial Activity: There has been approximately 100-years of industrial activity on the subject property with associated infrastructure including rail spurs, electrical substations, vehicle maintenance and repair areas, hydraulic lifts, and hazardous materials storage. Potential constituents of concern associated with this REC included chlorinated solvents, polychlorinated biphenyls (PCBs), creosote, metals, and asbestos in the soil.

- REC-2 Petroleum Underground Storage Tanks (USTs): The EDR database report includes listings for 24 USTs of single-wall steel construction potentially installed on the subject

property between 1929 and 1981. Langan reviewed supporting information for six USTs, but the statuses of the other 18 are unknown. The unknown statuses of the USTs, and age of the USTs indicated by available records indicate a potential for soil and soil vapor impacts at the subject property.

In 1986, two USTs were removed from the subject property and according to reports, soil samples were not collected. In 1989, three USTs were removed from the subject property and impacted soil was excavated around the former USTs. In 2005, a covenant was granted to the City of Vernon for a UST that was abandoned in place. During abandonment activities, soil samples were not collected. The removal activities or abandonment of USTs may have potentially impacted soil and soil vapor at the subject property.

- REC-3 Industrial Activity in the Surrounding Area: There has been approximately 100 years of industrial activity on the adjacent properties and in the surrounding area of the subject property. Operations included a battery smelting and recycling facility, oil and gas production, meat packing and auto repair facilities. The current and historical operations in the vicinity of the subject property and the potential offsite sources of hazardous substances may have impacted the media on the subject property.

The objective of the Phase II ESA subsurface investigation was to attempt to evaluate potential impacts as identified in the above RECs. The Phase II investigation consisted of soil borings and soil vapor sampling probes in proximity to potential UST locations, rail spurs, automobile maintenance areas, engine rooms, wastewater catchment basins or sumps and in the vicinity of the historical fiberboard operation Soil borings inside of buildings were advanced with hand augers to provide data points at locations inaccessible by drilling rigs. The investigation included concrete samples in representative locations where suspected PCB-containing equipment may have been utilized. The following tables summarize the basis for the sampling points.

Soil Borings and Soil Vapor Sampling Points

Boring ID	Rationale	Associated REC
B-1	Proximity to former fiberboard manufacturing facility, former auto repair shop, and northwestern property corner. Positioned to evaluate vapor conditions adjacent to auto maintenance facility.	REC-1, REC-2, REC-3
B-2	Proximity to the ham stuffing and hog pen buildings, central industrial wastewater (IWW) sump, and abandoned-in-place rail spur.	REC-1
B-3	Proximity to IWW piping, historical auto repair shops, and historical electrical substation.	REC-1, REC-2

Boring ID	Rationale	Associated REC
B-4	Proximity to eastern property boundary, off-property leaking UST case, and historical oil and gas operations to the south.	REC-1, REC-3
B-5	Proximity to historical gas station operating in the mid-20th century.	REC-2
B-6	Proximity to historical auto maintenance area and railroad in operation since the early 20th century.	REC-2
B-7	Proximity to historical auto maintenance area and former fueling station, positioned near previously collected environmental sampling.	REC-2
B-8	Proximity to the bacon/pork cut building, historical auto repair shops, and central location in the property.	REC-1, REC-2
B-9	Proximity to historical gas station and rail spur in the southern portion.	REC-1, REC-2
B-10	Proximity to historical paving company.	REC-1
B-11	Proximity to north engine room, abandoned-in-place rail spur, IWW sumps, historical electrical substation, and northeastern property corner.	REC-1
B-12	Interior point in main building accessible by drill rig. Proximity to historical electrical substations, abandoned-in-place UST, hydraulic lifts, catchment basins, and hazardous materials storage areas.	REC-1, REC-2
B-13	Proximity to main building, current auto maintenance area, historical auto repair areas, former UST, and catchment basins.	REC-1, REC-2
B-14	Proximity to historical auto repair area, IWW sump, and engine room.	REC-1, REC-2

Concrete Samples

Sample ID	Rationale	Associated REC
CS-01	Location of hydraulic lift in building constructed pre-PCB ban.	REC-1
CS-02	Location of hydraulic lift in building constructed pre-PCB ban.	REC-1
CS-03	Location of electrical substation installed pre-PCB ban.	REC-1
CS-04	Former location of electrical substation installed pre-PCB ban.	REC-1
CS-05	Location of hydraulic lift in building constructed pre-PCB ban.	REC-1
CS-06	Location of electrical substation installed pre-PCB ban.	REC-1

2.0 FIELD INVESTIGATION SUMMARY

2.1 May 2023 Activities

Field activities were implemented between May 3 and 12, 2023 at the subject property. Figure 1 presents the layout of the subject property and the location of investigation points. Table 1 presents summary information for soil borings and soil vapor installation details. Table 2 presents summary information for analytical testing. Borings were extended to a maximum of 35 feet below ground surface (bgs) by direct-push and hollow-stem auger drill rigs. A total of 20 temporary soil vapor points were sampled and installed in 10 nested locations (B-1 through B-10, B-12, and B-13) and one vapor point was installed in B-11.

Hand-auger borings were extended to depths up to 10 feet bgs in three warehouse buildings (ISB-01 through ISB-04). Concrete samples were collected in the vicinity of suspect PCB containing infrastructure (CS-1 through CS-06).

2.1.1 Utility Locate

Prior to the start of intrusive activities, a utility locate via geophysical methods was conducted by Spectrum Geophysical (Spectrum) to clear the boring and soil vapor point locations of subsurface utilities or obstructions. An area of approximately 100 square feet around each boring location was investigated. Field methodologies for the utility survey are detailed in Appendix A.

2.1.2 Subsurface Investigation

Soil borings were advanced by hollow-stem auger and direct push drill rigs at the approximate locations indicated on Figure 1. Soil Borings B-1 and B-3 through B-10 were installed with hollow-stem auger, and B-2 and B-11 through B-14 via direct push. The soil borings were advanced to depths between 12 and 35 feet bgs.

At each boring, Langan recorded soil types, screened soils for volatile organic compounds (VOCs) using a photoionization detector (PID), and conducted Hanby® total petroleum hydrocarbon (TPH) tests at five foot intervals. Boring logs describing soil types, PID readings, and TPH field test results are included in Appendix B. Field methodologies subsurface investigation activities are detailed in Appendix A.

Soil Vapor Sampling

Nested soil vapor probes were installed at 10 feet bgs and at the terminal depth in soil borings B-1 through B-13, with the exception of B-11, where a single vapor point was installed at 10 feet bgs due to boring refusal at 12 feet bgs. A total of 21 vapor samples were collected. Soil vapor sampling procedures are described in Appendix A and were consistent with the California

Department of Toxic Substances Control (DTSC) documents titled, "Advisory – Active Soil Gas Investigation" dated July 2015 and "Final Guidance for the Evaluation and Mitigation of Subsurface Vapor Intrusion to Indoor Air" dated October 2011 (DTSC 2011 and 2015 Guidance). The samples were submitted to Torrent Laboratory, Inc for the following laboratory analysis:

- VOCs by Environmental Protection Agency (EPA) Method TO-15;
- Fixed Gas (Methane, Oxygen, Carbon Dioxide) by ASTM Method D-1946; and
- Helium by ASTM Method D-1946.

Soil Boring

Soil samples were collected at five-foot intervals in each soil boring and submitted to the laboratory for select analyses. Metals, PCBs, asbestos, and pesticides analyses were performed for select samples. Soil samples analyzed for VOCs and semi-volatile organic compounds (SVOCs) were selected based on soil vapor results indicating the presence of VOCs in soil vapor. Table 2 presents a summary of the soil samples that were analyzed, and which analyses were performed for a given sample The samples were submitted to Torrent Laboratory, Inc for the following laboratory analysis:

- VOCs by EPA Method 8260B
- SVOCs by EPA Method 8270 SIM
- California Administrative Manual (CAM) 17 Metals by EPA Method
- Pesticides by EPA Method 8081A
- PCBs by EPA Method 8082
- Asbestos by Polarized Light Microscopy (PLM)

Hand-Auger Boring

Five hand auger borings, ISB-01 through ISB-05, were excavated inside the buildings between 5 and 10 feet below the slab. Boring ISB-05 could not be advanced due to concrete thicker than 18 inches. The boring was replaced by Soil Boring B-14 described in the preceding section. Prior to advancing the hand-auger borings, hand-held gas meters capable of detecting VOCs, carbon monoxide, oxygen, hydrogen sulfide, lower explosive limit, and ammonia were used to screen the vapor at the core hole.

Soils were screened for VOCs using a PID. TPH soil testing was performed using Hanby® test kits in the sub-slab and at 5-foot intervals until the boring terminus. One soil sample was collected from each boring at terminal depth or the interval displaying the indicators of impacts. The samples were submitted to Torrent Laboratory, Inc for select analysis of the following.

- VOCs by EPA Method 8260B
- SVOCs by EPA Method 8270 SIM
- CAM 17 Metals by EPA Method 6010B
- Pesticides by EPA Method 8081A
- PCBs by EPA Method 8082
- Asbestos by PLM

Concrete Sampling

Six concrete samples, CSS-01 through CSS-06, were collected in the areas where hydraulic lifts and potentially PCB oil-filled electrical equipment may have been installed. A rotary hammer with a half-inch drill bit was used to drill half-inch deep holes on a one-foot grid around the feature of interest. A precleaned spatula was used to collect approximately 10 grams of concrete dust into a glass jar for each sample. The spatula and rotary hammer drill bit were decontaminated between each sample. The samples were preserved on ice and shipped to Torrent Laboratory, Inc for PCB analysis by EPA Method 8082.

3.0 OBSERVATIONS AND RESULTS SUMMARY

3.1 Field Investigation Observations

Based on field observations, the exterior surfaces across the subject are paved with asphalt or concrete. Subsurface soil at the subject property generally consisted of brown to tan sandy silt, silty sand, sandy clay, and clay with varying amounts of gravel.

3.1.1 Soil Boring

Refusal was encountered at the boring location B-11 at approximately 12 feet bgs. Groundwater was not encountered during the boring activities.

PID readings during soil boring ranged from 0.0 ppm to 40 ppm (B-2-6). PID readings are recorded in the boring logs, included as Appendix B.

Hanby® field test kits were used to screen soils for TPH at 5 to 10-foot intervals during soil boring. Screening results ranged from non-detect to approximately 1,000 ppm at sample location B-7-6. No screening results over 0 ppm were observed in soil sample locations deeper than 10 feet bgs. Hanby® screening results are recorded in the boring logs, included as Appendix B. Non-zero Hanby® screening results are summarized in Table 3.

3.1.2 Soil Vapor Sampling

PID readings were taken at each of the soil vapor sample locations from the probe tubing. VOC screening results ranged from 0.1 ppm to 0.5 ppm. PID readings are recorded in the soil vapor sampling logs, included as Appendix C.

3.1.3 Hand-Auger Boring

At the hand auger boring locations, after the concrete was cored and the boring was advanced to the terminal depth, a mechanical plug was placed to isolate the annular space of the boring from ambient air. A hand-held mini-RAE® 5-gas meter was used to screen vapors in the boring via a tube that passed through the mechanical plug. The meter was allowed to collect readings over a ten-minute period and peak values were recorded. A summary of peak values at each hand auger location are summarized in Table 4. Oxygen concentrations ranged from 9% to 20.9%, hydrogen sulfide concentrations were non-detect, VOC concentrations ranged from non-detect to 0.7 ppm, carbon monoxide concentrations ranged from non-detect to 31 ppm, and ammonia concentrations ranged from non-detect to 4 ppm.

Hanby® field tests were used to estimate the presence of TPH in the soil. Screening results ranged from non-detect to approximately 1,000 ppm at sample location ISB-03-SS. Hanby® screening results are recorded in the boring logs, included as Appendix D. Non-zero Hanby® screening results are summarized in Table 3.

3.2 Results Summary

3.2.1 Soil Vapor Sampling

Soil vapor samples were analyzed for VOCs via EPA Method TO-15 and results were compared to San Francisco Bay Regional Water Quality Control Board (SFB RWQCB) Commercial/Industrial Subslab/Soil Gas Vapor Intrusion Environmental Screening Levels (ESLs), 2019 Rev. 2. Summary analytical results for soil vapor are presented in Table 5 and discussed below. Soil vapor results for constituents detected above ESLs are presented in Figure 2.

Chloroform
Chloroform was detected above laboratory detection limits in 18 of the 21 soil vapor samples and was detected above the commercial/industrial ESL of 18 ug/m^3 in 14 soil vapor samples. Detectable levels of chloroform were measured in Soil Borings B-2 through B-8 and B-11 through B-13. Exceedances of the ESL were measured in B-2 through B-5, B-7, B-8, and B-11 through B-13. Chloroform detections at or above the ESL ranged from 25 ug/m^3 (B4-SG-30) to 390 ug/m^3 (B12-SG-10).

Tetrachloroethylene (PCE)
PCE was detected at concentrations above the laboratory screening limits in 16 soil vapor samples collected from Soil Borings B-1 through B-5, B-7 through B-8, B-12, and B-13. PCE was detected above the commercial/industrial ESL (67 ug/m^3) in 6 soil vapor samples at concentrations ranging from 110 ug/m^3 (B3-SG-30) to 590 ug/m^3 (B2-SG-10).

VOCs
VOCs were detected in all soil vapor samples below respective commercial/industrial ESLs, with the exception of chloroform and PCE, as described above.

3.2.2 Soil Sampling

Soil samples were analyzed for VOCs (USEPA 8260B), SVOCs (USEPA 8270 SIM), CAM 17 Metals (USEPA 6010B), pesticides (USEPA 8081A), PCBs (USEPA 8082), PFAS (537.1/QSM 5.3/1633) and asbestos (PLM). The sample results were compared to SFB RWQCB Commercial/Industrial and Construction Worker: Shallow Soil Exposure Environmental Screening Levels ESLs, 2019 Rev. 2. Soil analytical data is summarized in Table 6 and concentrations for metals detected above ESLs are presented in Figure 2.

Arsenic
Arsenic was detected above the commercial/industrial ESL (0.31 mg/kg) and construction worker ESL (0.98 mg/kg) in 15 soil samples collected from Soil Borings B-1 through B-11. Concentrations ranged between 1.5 mg/kg (B-10-5) and 34.4 mg/kg (B-11-10). Arsenic is known to be naturally occurring at elevated concentrations in this region of California. Based on the "Determination of a Southern California Regional Background Arsenic Concentration in Soil" published by the DTSC in 2008 (revised in December 2020), the average background arsenic concentration in soil of the Southern California Region was determined to be approximately 12 mg/kg. Concentrations of arsenic above the background level were detected in Sample B-11-10 at a concentration of 34.4 mg/kg.

Lead
Lead was detected in nine soil samples above laboratory detection limits in Soil Borings B-1 through B-3, B-5 through B-7, and B-11. Lead was detected above the commercial/industrial ESL (320 mg/kg) and construction worker ESL (160 mg/kg) in Sample B-11-10 at a concentration of 1,100 mg/kg.

Nickel

Nickel was detected in Nickel was detected in one sample, B-11-10, above the ESL for construction workers (86 mg/kg) with a concentration of 136 mg/kg. No samples were detected above the ESL for commercial/industrial (11,000 mg/kg). Nickel was detected at all boring

locations below the ESL for construction workers with concentrations ranging from 5.15 mg/kg (B-13-5) and 46.6 mg/kg (B-9-5).

Additional Metals

Metals were detected in all soil sample analyses. In addition to arsenic, lead, and nickel, detected metals include antimony, barium, cadmium, chromium, hexavalent chromium, cobalt, copper, mercury, silver, vanadium, and zinc. Other than the exceedances of ESLs described for lead, arsenic, and nickel, metals were not detected above respective commercial/industrial or construction work ESLs.

Pesticides, PCBs, VOCs, and SVOCs

Pesticides, PCBs, VOCs, and SVOCs were not detected in soil samples above the respective laboratory detection limits.

3.2.4 Concrete Samples

Concrete samples were analyzed for PCBs via EPA Method 8082A. In the concrete samples, CS-01 through CS-06, no PCB compounds were detected.

4.0 CONCLUSIONS

A Phase II ESA was completed to obtain additional information on potential soil and soil vapor impacts at the subject site. The field activities consisted of soil borings, the installation of vapor probes, and the collection of concrete samples.

Soil vapor impacts were measured greater than respective ESLs in the portion of the subject property to the north of East Vernon Avenue. Exceedances were also measured in Soil Boring B-5, in the southwestern corner of the subject property and the approximate center of a former auto fueling and maintenance operation. Chloroform and PCE soil vapor results do not have a defined vertical gradient, which suggesting a lack of a deeper source of the observed soil vapor impacts. Analyses for SVOCs and VOCs in soil, as well as field screening results for VOCs and TPH, did not identify potential source areas for chloroform or PCE in site soil.

PCE is known to have been used as a metal degreaser and additionally as a precursor to certain refrigerants. Chloroform has historically been used as a solvent, cleansing agent, and precursor to certain refrigerants. Although soil sampling and screening did not identify potential source areas for soil vapor impacts, the detection of PCE, chloroform, and other solvents and refrigerants in soil vapor does not preclude the potential presence of on-site sources of soil vapor as identified in REC-1.

Concrete samples were non-detect for PCBs in the select locations where potentially PCB-containing equipment may have been stored. Not all locations where potentially PCB-containing equipment may have been stored were investigated.

Metals concentrations at Soil Boring B-11 included lead over the commercial/industrial ESL and may require additional evaluation for both California and Resource Conservation and Recovery Act (RCRA) hazardous waste, arsenic above the published regional background concentration, and nickel above the direct-contact construction worker ESL. Boring B-11 is located proximal to a historical railroad which has been abandoned in place.

Potential locations of historical USTs were not identified during the assessment activities. Observations during soil boring, including VOC screening via PID and TPH screening with Hanby® test kits included confirmation of petroleum impacts, but were not conclusively indicative of impacts to soil caused by a UST release. These observations, in addition to the presence of VOCs; including benzene, toluene, ethyl benzene, and xylenes; in soil vapor confirm that petroleum releases have occurred on the subject property.

Table 1
Boring and Soil Vapor Probe Installation Summary
3049, 3094, 3095, 3163, and 3200 East Vernon Avenue, Vernon, California

Boring	Drilling Method	Depth (feet below surface)	Vapor Probe Depth (feet below surface)
B-1	Hollow Stem Auger	30	10, 27
B-2	Direct Push	30	10, 28
B-3	Hollow Stem Auger	30	10, 30
B-4	Hollow Stem Auger	30	10, 30
B-5	Hollow Stem Auger	30	10, 30
B-6	Hollow Stem Auger	30	10, 30
B-7	Hollow Stem Auger	35	10, 28.5
B-8	Hollow Stem Auger	35	10, 30
B-9	Hollow Stem Auger	35	-
B-10	Hollow Stem Auger	35	-
B-11	Direct Push	12	10'
B-12	Direct Push	30	10, 30
B-13	Direct Push	30	10, 30
B-14	Direct Push	20	10

Table 2
Summary of Laboratory Analyses
3049, 3094, 3095, 3163, and 3200 East Vernon Avenue, Vernon, California

Sample Name	Analyte				
	CAM17 Metals	VOC	SVOC	Pesticide	Asbestos
B-1-5	Yes	No	No	Yes	Yes
B-1-15	Yes	No	No	No	No
B-2-5	Yes	No	No	Yes	No
B-2(9-10)	No	Yes	Yes	No	No
B-2(14-15)	Yes	No	No	No	No
B-2(29-30)	No	Yes	Yes	No	No
B-3-5	Yes	No	No	Yes	No
B-3-10	No	Yes	Yes	No	No
B-3-15	Yes	No	No	No	No
B-3-30	No	Yes	Yes	No	No
B-4-6	Yes	No	No	No	No
B-4-15	Yes	No	No	No	No
B-5-5	Yes	No	No	No	No
B-5-15	Yes	No	No	No	No
B-5-30	No	Yes	Yes	No	No
B-6-5	Yes	No	No	No	No
B-6-15	Yes	No	No	No	No
B-7-6	Yes	No	No	No	No
B-7-15	Yes	No	No	No	No
B-7-30	No	Yes	Yes	No	No
B-8-5	Yes	No	No	Yes	No
B-8-15	Yes	No	No	No	No
B-8-30	No	Yes	Yes	No	No
B-9-5	Yes	No	No	No	No
B-9-15	Yes	No	No	No	No
B-10-5	Yes	No	No	No	No
B-10-15	Yes	No	No	No	No
B-11-5	Yes	No	No	Yes	No
B-11(9-10)	Yes	No	No	No	No
B-12-5	Yes	No	No	No	No
B-12(9-10)	No	Yes	Yes	No	No
B-12(14-15)	Yes	No	No	No	No
B-12(29-30.5)	No	Yes	Yes	No	No
B-13-5	Yes	No	No	No	No
B-13(9-10)	No	Yes	Yes	No	No
B-13(14-15)	Yes	No	No	No	No
B-13(29-30)	No	Yes	Yes	No	No

Table 3
Hanby Field Test Results Summary
3049, 3094, 3095, 3163, and 3200 East Vernon Avenue, Vernon, California

Boring Location	Depth of Sample (feet below surface)	Hanby Test Result (parts per million)	Colorimeter Scale Used
B-1	25	5	Waste Oil
B-3	5	10	Waste Oil
B-4	6	75	Waste Oil
B-4	15	25	Waste Oil
B-5	5	350	Waste Oil
B-6	5	50	Waste Oil
B-7	6	>1000	Waste Oil
B-7	15	75	Waste Oil
B-9	5	700	Waste Oil
B-11	5	700	Waste Oil
B-11	10	10	Waste Oil
ISB-01	sub-slab	30	Gasoline
ISB-02	5	150	Diesel
ISB-03	sub-slab	1000	#2 Fuel Oil

note: non-detect screening results not presented

Table 4
Hand Auger Boring Vapor Screening Summary
3049, 3094, 3095, 3163, and 3200 East Vernon Avenue, Vernon, California

Location	Hydrogen Sulfide (ppm)	Carbon Monoxide (ppm)	Oxygen (%)	VOCs (ppm)	LEL	Ammonia (ppm)
ISB-01	0	6	20.9	NA	0	0
ISB-02	0	0	9.2	NA	0	0
ISB-03	0	0	20.9	0.7	0	4
ISB-04	0	31	19	0	0	1

note: only peak values shown
ppm - parts per million
VOCs - volatile organic compounds
NA - not analyzed due to equipment error

Table 5
Summary of Soil Vapor Analytical Results
3049, 3094, 3095, 3163, and 3200 East Vernon Avenue, Vernon, California

Analyte	CAS Number	Subslab/ Soil Gas VI Commercial/ Industrial ESL	Location	B1-SG	B1-SG	B2-SG	B2-SG	B3-SG	B3-SG	B4-SG	B4-SG	B5-SG	B5-SG	B5-SG
			Sample Name	B1-SG-10	B1-SG-30	B2-SG-10	B2-SG-30	B3-SG-10	B3-SG-30	B4-SG-10	B4-SG-30	B5-SG-10	B5-SG-30	SG-DUP
			Sample Date	05/09/2023	05/08/2023	05/09/2023	05/09/2023	05/09/2023	05/09/2023	05/09/2023	05/09/2023	05/09/2023	05/09/2023	05/09/2023
			Sample Depth	10	30	10	30	10	30	10	30	10	30	30
			Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Volatile Organic Compounds														
1,1,1,2-Tetrachloroethane	630-20-6	55	ug/m3	<3.4 U	<6.9 U	<10 U	<6.9 U	<10 U	<3.4 U	<3.4 U	<10 U	<6.9 U	<3.4 U	<10 U
1,1,1-Trichloroethane	71-55-6	150000	ug/m3	<2.7 U	<5.5 U	<8.2 U	<5.5 U	<8.2 U	<2.7 U	<2.7 U	<8.2 U	<5.5 U	<2.7 U	<8.2 U
1,1,2,2-Tetrachloroethane	79-34-5	7	ug/m3	<3.4 U	<6.9 U	<10 U	<6.9 U	<10 U	<3.4 U	<3.4 U	<10 U	<6.9 U	<3.4 U	<10 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NS	ug/m3	<3.8 U	<7.7 U	<11 U	8.7	<11 U	7	<3.8 U	<11 U	<7.7 U	<3.8 U	<11 U
1,1,2-Trichloroethane	79-00-5	26	ug/m3	<2.7 U	<5.5 U	<8.2 U	<5.5 U	<8.2 U	<2.7 U	<2.7 U	<8.2 U	<5.5 U	<2.7 U	<8.2 U
1,1-Dichloroethane	75-34-3	260	ug/m3	<2 U	<4.1 U	<6.1 U	<4.1 U	<6.1 U	<2 U	<2 U	<6.1 U	<4.1 U	<2 U	<6.1 U
1,1-Dichloroethene	75-35-4	10000	ug/m3	<2 U	<4 U	<6 U	<4 U	<6 U	<2 U	<2 U	<6 U	<4 U	<2 U	<6 U
1,1-Difluoroethane	75-37-6	NS	ug/m3	<14 U	<27 U	<41 U	<27 U	<41 U	<14 U	<14 U	26,000 J	<27 U	<14 U	<41 U
1,2,4-Trichlorobenzene	120-82-1	290	ug/m3	<3.7 U	<7.4 U	<11 U	<7.4 U	<11 U	<3.7 U	<3.7 U	<11 U	<7.4 U	<3.7 U	<11 U
1,2,4-Trimethylbenzene	95-63-6	NS	ug/m3	<2.5 U	<4.9 U	<7.4 U	<4.9 U	<7.4 U	<2.5 U	<2.5 U	<7.4 U	<4.9 U	<2.5 U	<7.4 U
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	0.68	ug/m3	<3.8 U	<7.7 U	<12 U	<7.7 U	<12 U	<3.8 U	<3.8 U	<12 U	<7.7 U	<3.8 U	<12 U
1,2-Dichlorobenzene	95-50-1	29000	ug/m3	<3 U	<6 U	<9 U	<6 U	<9 U	<3 U	<3 U	<9 U	<6 U	<3 U	<9 U
1,2-Dichloroethane	107-06-2	16	ug/m3	<2 U	<4.1 U	<6.1 U	<4.1 U	<6.1 U	<2 U	<2 U	<6.1 U	<4.1 U	<2 U	<6.1 U
1,2-Dichloropropane	78-87-5	41	ug/m3	<2.3 U	<4.6 U	<6.9 U	<4.6 U	<6.9 U	<2.3 U	<2.3 U	<6.9 U	<4.6 U	<2.3 U	<6.9 U
1,2-Dichlorotetrafluoroethane	76-14-2	NS	ug/m3	<3.5 U	<7 U	<10 U	<7 U	<10 U	<3.5 U	<3.5 U	<10 U	<7 U	<3.5 U	<10 U
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	NS	ug/m3	<2.5 U	<4.9 U	<7.4 U	<4.9 U	<7.4 U	<2.5 U	<2.5 U	<7.4 U	<4.9 U	<2.5 U	<7.4 U
1,3-Butadiene	106-99-0	NS	ug/m3	<1.1 U	<2.2 U	<3.3 U	<2.2 U	<3.3 U	<1.1 U	<1.1 U	<3.3 U	<2.2 U	<1.1 U	<3.3 U
1,3-Dichlorobenzene	541-73-1	NS	ug/m3	<3 U	<6 U	<9 U	<6 U	<9 U	<3 U	<3 U	<9 U	<6 U	<3 U	<9 U
1,4-Dichlorobenzene	106-46-7	37	ug/m3	<3 U	<6 U	<9 U	<6 U	<9 U	<3 U	<3 U	<9 U	<6 U	<3 U	<9 U
1,4-Dioxane (P-Dioxane)	123-91-1	53	ug/m3	<3.6 U	<7.2 U	<11 U	<7.2 U	<11 U	<3.6 U	<3.6 U	<11 U	<7.2 U	<3.6 U	<11 U
2-Hexanone (MBK)	591-78-6	NS	ug/m3	<2.1 U	<4.1 U	<6.2 U	<4.1 U	11	<2.1 U	<2.1 U	<6.2 U	<4.1 U	<2.1 U	<6.2 U
4-Ethyltoluene	622-96-8	NS	ug/m3	<2.5 U	<4.9 U	<7.4 U	<4.9 U	<7.4 U	<2.5 U	<2.5 U	<7.4 U	<4.9 U	<2.5 U	<7.4 U
Acetone	67-64-1	4500000	ug/m3	41	230	<36 U	53	480 J	33	25	550	44	36	37
Benzene	71-43-2	14	ug/m3	<1.6 U	<3.2 U	<4.8 U	13	<4.8 U	<1.6 U	<1.6 U	<4.8 U	<3.2 U	<1.6 U	<4.8 U
Bromodichloromethane	75-27-4	11	ug/m3	<3.4 U	<6.7 U	<10 U	<6.7 U	<10 U	<3.4 U	<3.4 U	<10 U	<6.7 U	<3.4 U	<10 U
Bromoform	75-25-2	370	ug/m3	<5.2 U	<10 U	<16 U	<10 U	<16 U	<5.2 U	<5.2 U	<16 U	<10 U	<5.2 U	<16 U
Bromomethane	74-83-9	730	ug/m3	<1.9 U	<3.9 U	<5.8 U	<3.9 U	<5.8 U	<1.9 U	<1.9 U	<5.8 U	<3.9 U	<1.9 U	<5.8 U
Butane, 2-Methoxy-2-Methyl	994-05-8	NS	ug/m3	<2.1 U	<4.2 U	<6.3 U	<4.2 U	<6.3 U	<2.1 U	<2.1 U	<6.3 U	<4.2 U	<2.1 U	<6.3 U
Carbon Disulfide	75-15-0	NS	ug/m3	<1.6 U	5.3	<4.7 U	32	<4.7 U	<1.6 U	<1.6 U	<4.7 U	<3.1 U	<1.6 U	<4.7 U
Carbon Tetrachloride	56-23-5	68	ug/m3	<3.1 U	<6.3 U	<9.4 U	<6.3 U	<9.4 U	19	<3.1 U	<9.4 U	<6.3 U	<3.1 U	<9.4 U
Chlorobenzene	108-90-7	7300	ug/m3	<2.3 U	<4.6 U	<6.9 U	<4.6 U	<6.9 U	<2.3 U	<2.3 U	<6.9 U	<4.6 U	<2.3 U	<6.9 U
Chloroethane	75-00-3	1500000	ug/m3	<1.3 U	<2.6 U	<4 U	<2.6 U	<4 U	<1.3 U	<1.3 U	<4 U	<2.6 U	<1.3 U	<4 U
Chloroform	67-66-3	**18**	ug/m3	<2.4 U	<4.9 U	**28**	18	**38**	**130**	<2.4 U	**25**	**46**	**63 J**	**160 J**
Chloromethane	74-87-3	13000	ug/m3	<4.1 U	<8.3 U	<12 U	<8.3 U	<12 U	<4.1 U	<4.1 U	<12 U	<8.3 U	<4.1 U	<12 U
Cis-1,2-Dichloroethene	156-59-2	1200	ug/m3	<2 U	<4 U	<5.9 U	<4 U	<5.9 U	<2 U	<2 U	<5.9 U	<4 U	<2 U	<5.9 U
Cis-1,3-Dichloropropene	10061-01-5	NS	ug/m3	<2.3 U	<4.5 U	<6.8 U	<4.5 U	<6.8 U	<2.3 U	<2.3 U	<6.8 U	<4.5 U	<2.3 U	<6.8 U
Dibromochloromethane	124-48-1	NS	ug/m3	<4.3 U	<8.5 U	<13 U	<8.5 U	<13 U	<4.3 U	<4.3 U	<13 U	<8.5 U	<4.3 U	<13 U
Dichlorodifluoromethane	75-71-8	NS	ug/m3	<2.5 U	<5 U	<7.4 U	<5 U	<7.4 U	<2.5 U	<2.5 U	<7.4 U	<5 U	<2.5 U	<7.4 U
Ethyl Acetate	141-78-6	NS	ug/m3	<1.8 U	37	<5.4 U	19	40	17	<1.8 U	80	18	11 J	29 J
Ethyl Tert-Butyl Ether	637-92-3	NS	ug/m3	<2.1 U	<4.2 U	<6.3 U	<4.2 U	<6.3 U	<2.1 U	<2.1 U	<6.3 U	<4.2 U	<2.1 U	<6.3 U
Ethylbenzene	100-41-4	160	ug/m3	<2.2 U	<4.3 U	<6.5 U	<4.3 U	<6.5 U	<2.2 U	<2.2 U	<6.5 U	<4.3 U	<2.2 U	<6.5 U
Hexachlorobutadiene	87-68-3	19	ug/m3	<5.3 U	<11 U	<16 U	<11 U	<16 U	<5.3 U	<5.3 U	<16 U	<11 U	<5.3 U	<16 U
Isopropanol	67-63-0	NS	ug/m3	<12 U	<25 U	<37 U	55	<37 U	17	21	170	<25 U	12	<37 U
Isopropyl Ether	108-20-3	NS	ug/m3	<2.1 U	<4.2 U	<6.3 U	<4.2 U	<6.3 U	<2.1 U	<2.1 U	<6.3 U	<4.2 U	<2.1 U	<6.3 U
M,P-Xylene	179601-23-1	NS	ug/m3	<2.2 U	5.2	<6.5 U	13	<6.5 U	<2.2 U	<2.2 U	<6.5 U	<4.3 U	<2.2 U	<6.5 U
Methyl Ethyl Ketone (2-Butanone)	78-93-3	730000	ug/m3	2.9	32	<4.4 U	16	36	14	2.2	69	15	9.5 J	24 J
Methyl Isobutyl Ketone (4-Methyl-2-Pentanon	108-10-1	440000	ug/m3	<2.1 U	<4.1 U	<6.2 U	<4.1 U	<6.2 U	2.3	<2.1 U	<6.2 U	<4.1 U	<2.1 U	<6.2 U
Methylene Chloride	75-09-2	410	ug/m3	14	<21 U	<31 U	<21 U	<31 U	<10 U	<10 U	<31 U	<21 U	<10 U	<31 U
Naphthalene	91-20-3	12	ug/m3	<2.6 U	<5.2 U	<7.9 U	<5.2 U	<7.9 U	<2.6 U	<2.6 U	<7.9 U	<5.2 U	<2.6 U	<7.9 U
n-Hexane	110-54-3	NS	ug/m3	<1.8 U	<3.5 U	<5.3 U	8.1	<5.3 U	1.9	<1.8 U	<5.3 U	<3.5 U	<1.8 U	<5.3 U
o-Xylene (1,2-Dimethylbenzene)	95-47-6	NS	ug/m3	<2.2 U	<4.3 U	<6.5 U	4.9	<6.5 U	<2.2 U	<2.2 U	<6.5 U	<4.3 U	<2.2 U	<6.5 U
Styrene	100-42-5	130000	ug/m3	<2.1 U	<4.3 U	<6.4 U	<4.3 U	<6.4 U	<2.1 U	<2.1 U	<6.4 U	<4.3 U	<2.1 U	<6.4 U
Tert-Butyl Alcohol	75-65-0	NS	ug/m3	2.2	6.4	<4.5 U	<3 U	11	3.8	5.1	28	3.8	3.9 J	11 J
Tert-Butyl Methyl Ether	1634-04-4	1600	ug/m3	<1.8 U	<3.6 U	<5.4 U	<3.6 U	<5.4 U	<1.8 U	<1.8 U	<5.4 U	<3.6 U	<1.8 U	<5.4 U
Tetrachloroethene (PCE)	127-18-4	**67**	ug/m3	<3.4 U	8.2	**590**	**270**	52	**110**	<3.4 U	20	**230**	**200 J**	**500 J**
Tetrahydrofuran	109-99-9	NS	ug/m3	<1.5 U	<3 U	<4.4 U	<3 U	<4.4 U	3	<1.5 U	<4.4 U	<3 U	<1.5 U	<4.4 U
Toluene	108-88-3	44000	ug/m3	6.2	95	13	71	15	29	<1.9 U	22	12	4.6	10
Trans-1,2-Dichloroethene	156-60-5	12000	ug/m3	<2 U	<4 U	<5.9 U	<4 U	<5.9 U	<2 U	<2 U	<5.9 U	<4 U	<2 U	<5.9 U
Trans-1,3-Dichloropropene	10061-02-6	NS	ug/m3	<2.3 U	<4.5 U	<6.8 U	<4.5 U	<6.8 U	<2.3 U	<2.3 U	<6.8 U	<4.5 U	<2.3 U	<6.8 U
Trichloroethene (TCE)	79-01-6	100	ug/m3	<2.7 U	<5.4 U	<8.1 U	5.9	<8.1 U	4.5	<2.7 U	<8.1 U	<5.4 U	<2.7 U	<8.1 U
Trichlorofluoromethane	75-69-4	NS	ug/m3	31	300	36	96	27	29	<2.8 U	36	16	8.7 J	20 J
Vinyl Acetate	108-05-4	NS	ug/m3	<1.8 U	<3.5 U	<5.3 U	<3.5 U	<5.3 U	<1.8 U	<1.8 U	<5.3 U	<3.5 U	<1.8 U	<5.3 U
Vinyl Chloride	75-01-4	5.2	ug/m3	<1.3 U	<2.6 U	<3.8 U	<2.6 U	<3.8 U	<1.3 U	<1.3 U	<3.8 U	<2.6 U	<1.3 U	<3.8 U

ESL - Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, 2019 Rev. 2
ug/m3 - microgram per cubic meter
NS - no standard

Table 5
Summary of Soil Vapor Analytical Results
3049, 3094, 3095, 3163, and 3200 East Vernon Avenue, Vernon, California

Analyte	CAS Number	Subslab/ Soil Gas VI Commercial/ Industrial ESL	Location	B6-SG	B6-SG	B7-SG	B7-SG	B8-SG	B8-SG	B11-SG	B12-SG	B12-SG	B13-SG	B13-SG
			Sample Name	B6-SG-10	B6-SG-30	B7-SG-10	B7-SG-30	B8-SG-10	B8-SG-30	B11-SG-10	B12-SG-10	B12-SG-30	B13-SG-10	B13-SG-30
			Sample Date	05/09/2023	05/09/2023	05/08/2023	05/08/2023	05/09/2023	05/09/2023	05/09/2023	05/09/2023	05/09/2023	05/09/2023	05/09/2023
			Sample Depth	10	30	10	30	10	30	10	10	30	10	30
			Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Volatile Organic Compounds														
1,1,1,2-Tetrachloroethane	630-20-6	55	ug/m3	<10 U	<10 U	<10 U	<10 U	<3.4 U	<21 U	<3.4 U	<10 U	<3.4 U	<3.4 U	<10 U
1,1,1-Trichloroethane	71-55-6	150000	ug/m3	<8.2 U	<8.2 U	<8.2 U	<8.2 U	<2.7 U	<16 U	<2.7 U	<8.2 U	<2.7 U	<2.7 U	<8.2 U
1,1,2,2-Tetrachloroethane	79-34-5	7	ug/m3	<10 U	<10 U	<10 U	<10 U	<3.4 U	<21 U	<3.4 U	<10 U	<3.4 U	<3.4 U	<10 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NS	ug/m3	<11 U	<11 U	<11 U	<11 U	<3.8 U	<23 U	<3.8 U	<11 U	<3.8 U	<3.8 U	<11 U
1,1,2-Trichloroethane	79-00-5	26	ug/m3	<8.2 U	<8.2 U	<8.2 U	<8.2 U	<2.7 U	<16 U	<2.7 U	<8.2 U	<2.7 U	<2.7 U	<8.2 U
1,1-Dichloroethane	75-34-3	260	ug/m3	<6.1 U	<6.1 U	<6.1 U	<6.1 U	<2 U	<12 U	<2 U	<6.1 U	<2 U	<2 U	<6.1 U
1,1-Dichloroethene	75-35-4	10000	ug/m3	<6 U	<6 U	<6 U	<6 U	<2 U	<12 U	<2 U	6.5	<2 U	<2 U	<6 U
1,1-Difluoroethane	75-37-6	NS	ug/m3	<41 U	<41 U	<41 U	<41 U	<14 U	<81 U	<14 U	<41 U	<14 U	<14 U	<41 U
1,2,4-Trichlorobenzene	120-82-1	290	ug/m3	<11 U	<11 U	<11 U	<11 U	<3.7 U	<22 U	<3.7 U	<11 U	<3.7 U	<3.7 U	<11 U
1,2,4-Trimethylbenzene	95-63-6	NS	ug/m3	<7.4 U	<7.4 U	<7.4 U	<7.4 U	<2.5 U	<15 U	<2.5 U	<7.4 U	<2.5 U	<2.5 U	<7.4 U
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	0.68	ug/m3	<12 U	<12 U	<12 U	<12 U	<3.8 U	<23 U	<3.8 U	<12 U	<3.8 U	<3.8 U	<12 U
1,2-Dichlorobenzene	95-50-1	29000	ug/m3	<9 U	<9 U	<9 U	<9 U	<3 U	<18 U	<3 U	<9 U	<3 U	<3 U	<9 U
1,2-Dichloroethane	107-06-2	16	ug/m3	<6.1 U	<6.1 U	<6.1 U	<6.1 U	<2 U	<12 U	<2 U	<6.1 U	<2 U	<2 U	<6.1 U
1,2-Dichloropropane	78-87-5	41	ug/m3	<6.9 U	<6.9 U	<6.9 U	<6.9 U	<2.3 U	<14 U	<2.3 U	<6.9 U	<2.3 U	<2.3 U	<6.9 U
1,2-Dichlorotetrafluoroethane	76-14-2	NS	ug/m3	<10 U	<10 U	<10 U	<10 U	<3.5 U	<21 U	<3.5 U	<10 U	<3.5 U	<3.5 U	<10 U
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	NS	ug/m3	<7.4 U	<7.4 U	<7.4 U	<7.4 U	<2.5 U	<15 U	<2.5 U	<7.4 U	<2.5 U	<2.5 U	<7.4 U
1,3-Butadiene	106-99-0	NS	ug/m3	<3.3 U	<3.3 U	<3.3 U	<3.3 U	<1.1 U	<6.6 U	<1.1 U	<3.3 U	<1.1 U	<1.1 U	<3.3 U
1,3-Dichlorobenzene	541-73-1	NS	ug/m3	<9 U	<9 U	<9 U	<9 U	<3 U	<18 U	<3 U	<9 U	<3 U	<3 U	<9 U
1,4-Dichlorobenzene	106-46-7	37	ug/m3	<9 U	<9 U	<9 U	<9 U	<3 U	<18 U	<3 U	<9 U	<3 U	<3 U	<9 U
1,4-Dioxane (P-Dioxane)	123-91-1	53	ug/m3	<11 U	<11 U	<11 U	<11 U	<3.6 U	<22 U	<3.6 U	<11 U	<3.6 U	<3.6 U	<11 U
2-Hexanone (MBK)	591-78-6	NS	ug/m3	<6.2 U	7.7	<6.2 U	11	<2.1 U	<12 U	<2.1 U	<6.2 U	<2.1 U	<2.1 U	<6.2 U
4-Ethyltoluene	622-96-8	NS	ug/m3	<7.4 U	<7.4 U	<7.4 U	<7.4 U	<2.5 U	<15 U	<2.5 U	<7.4 U	<2.5 U	<2.5 U	<7.4 U
Acetone	67-64-1	4500000	ug/m3	270	510	250	410	48	260	22	<36 U	250 J	23	160
Benzene	71-43-2	14	ug/m3	<4.8 U	<4.8 U	<4.8 U	<4.8 U	<1.6 U	<9.6 U	<1.6 U	<4.8 U	<1.6 U	<1.6 U	<4.8 U
Bromodichloromethane	75-27-4	11	ug/m3	<10 U	<10 U	<10 U	<10 U	<3.4 U	<20 U	<3.4 U	<10 U	<3.4 U	<3.4 U	<10 U
Bromoform	75-25-2	370	ug/m3	<16 U	<16 U	<16 U	<16 U	<5.2 U	<31 U	<5.2 U	<16 U	<5.2 U	<5.2 U	<16 U
Bromomethane	74-83-9	730	ug/m3	<5.8 U	<5.8 U	<5.8 U	<5.8 U	<1.9 U	<12 U	<1.9 U	<5.8 U	<1.9 U	<1.9 U	<5.8 U
Butane, 2-Methoxy-2-Methyl	994-05-8	NS	ug/m3	<6.3 U	<6.3 U	<6.3 U	<6.3 U	<2.1 U	<13 U	<2.1 U	<6.3 U	<2.1 U	<2.1 U	<6.3 U
Carbon Disulfide	75-15-0	NS	ug/m3	<4.7 U	<4.7 U	<4.7 U	<4.7 U	<1.6 U	<9.3 U	<1.6 U	<4.7 U	<1.6 U	<1.6 U	<4.7 U
Carbon Tetrachloride	56-23-5	68	ug/m3	<9.4 U	<9.4 U	<9.4 U	<9.4 U	<3.1 U	<19 U	4	<9.4 U	<3.1 U	3.1	<9.4 U
Chlorobenzene	108-90-7	7300	ug/m3	<6.9 U	<6.9 U	<6.9 U	<6.9 U	<2.3 U	<14 U	<2.3 U	<6.9 U	<2.3 U	<2.3 U	<6.9 U
Chloroethane	75-00-3	1500000	ug/m3	<4 U	<4 U	<4 U	<4 U	<1.3 U	<7.9 U	<1.3 U	<4 U	<1.3 U	<1.3 U	<4 U
Chloroform	67-66-3	**18**	ug/m3	12	9.2	**120**	**380**	4.9	**51**	**63**	**390**	**290**	**55**	**92**
Chloromethane	74-87-3	13000	ug/m3	<12 U	<12 U	<12 U	<12 U	<4.1 U	<25 U	<4.1 U	<12 U	<4.1 U	<4.1 U	<12 U
Cis-1,2-Dichloroethene	156-59-2	1200	ug/m3	<5.9 U	<5.9 U	<5.9 U	<5.9 U	<2 U	<12 U	<2 U	<5.9 U	<2 U	<2 U	<5.9 U
Cis-1,3-Dichloropropene	10061-01-5	NS	ug/m3	<6.8 U	<6.8 U	<6.8 U	<6.8 U	<2.3 U	<14 U	<2.3 U	<6.8 U	<2.3 U	<2.3 U	<6.8 U
Dibromochloromethane	124-48-1	NS	ug/m3	<13 U	<13 U	<13 U	<13 U	<4.3 U	<26 U	<4.3 U	<13 U	<4.3 U	<4.3 U	<13 U
Dichlorodifluoromethane	75-71-8	NS	ug/m3	<7.4 U	<7.4 U	<7.4 U	<7.4 U	<2.5 U	<15 U	<2.5 U	<7.4 U	<2.5 U	2.5	<7.4 U
Ethyl Acetate	141-78-6	NS	ug/m3	<5.4 U	48	28	68	12	44	<1.8 U	<5.4 U	<1.8 U	<1.8 U	11
Ethyl Tert-Butyl Ether	637-92-3	NS	ug/m3	<6.3 U	<6.3 U	<6.3 U	<6.3 U	<2.1 U	<13 U	<2.1 U	<6.3 U	<2.1 U	<2.1 U	<6.3 U
Ethylbenzene	100-41-4	160	ug/m3	<6.5 U	<6.5 U	<6.5 U	<6.5 U	<2.2 U	<13 U	<2.2 U	<6.5 U	<2.2 U	<2.2 U	<6.5 U
Hexachlorobutadiene	87-68-3	19	ug/m3	<16 U	<16 U	<16 U	<16 U	<5.3 U	<32 U	<5.3 U	<16 U	<5.3 U	<5.3 U	<16 U
Isopropanol	67-63-0	NS	ug/m3	<37 U	<37 U	68	<37 U	80	<74 U	<12 U	<37 U	190	29	660
Isopropyl Ether	108-20-3	NS	ug/m3	<6.3 U	<6.3 U	<6.3 U	<6.3 U	<2.1 U	<13 U	<2.1 U	<6.3 U	<2.1 U	<2.1 U	<6.3 U
M,P-Xylene	179601-23-1	NS	ug/m3	<6.5 U	<6.5 U	<6.5 U	<6.5 U	<2.2 U	<13 U	<2.2 U	<6.5 U	<2.2 U	<2.2 U	<6.5 U
Methyl Ethyl Ketone (2-Butanone)	78-93-3	730000	ug/m3	17	42	23	57	10	38	<1.5 U	8.3	7.1	6.6	11
Methyl Isobutyl Ketone (4-Methyl-2-Pentanon	108-10-1	440000	ug/m3	<6.2 U	<6.2 U	<6.2 U	<6.2 U	<2.1 U	<12 U	<2.1 U	6.3	<2.1 U	<2.1 U	<6.2 U
Methylene Chloride	75-09-2	410	ug/m3	<31 U	<31 U	<31 U	<31 U	<10 U	<62 U	<10 U	<31 U	<10 U	<10 U	<31 U
Naphthalene	91-20-3	12	ug/m3	<7.9 U	<7.9 U	<7.9 U	<7.9 U	<2.6 U	<16 U	<2.6 U	<7.9 U	<2.6 U	<2.6 U	<7.9 U
n-Hexane	110-54-3	NS	ug/m3	<5.3 U	<5.3 U	<5.3 U	<5.3 U	<1.8 U	<11 U	27	<5.3 U	<1.8 U	<1.8 U	<5.3 U
o-Xylene (1,2-Dimethylbenzene)	95-47-6	NS	ug/m3	<6.5 U	<6.5 U	<6.5 U	<6.5 U	<2.2 U	<13 U	<2.2 U	<6.5 U	<2.2 U	<2.2 U	<6.5 U
Styrene	100-42-5	130000	ug/m3	<6.4 U	<6.4 U	<6.4 U	<6.4 U	<2.1 U	<13 U	<2.1 U	<6.4 U	<2.1 U	<2.1 U	<6.4 U
Tert-Butyl Alcohol	75-65-0	NS	ug/m3	<4.5 U	7.2	13	<4.5 U	42	12	10	<4.5 U	<1.5 U	9.7	11
Tert-Butyl Methyl Ether	1634-04-4	1600	ug/m3	<5.4 U	<5.4 U	<5.4 U	<5.4 U	<1.8 U	<11 U	<1.8 U	<5.4 U	<1.8 U	<1.8 U	<5.4 U
Tetrachloroethene (PCE)	127-18-4	**67**	ug/m3	<10 U	<10 U	31	**190**	7.3	59	<3.4 U	20	22	19	45
Tetrahydrofuran	109-99-9	NS	ug/m3	<4.4 U	<4.4 U	<4.4 U	<4.4 U	<1.5 U	<8.9 U	<1.5 U	<4.4 U	<1.5 U	<1.5 U	<4.4 U
Toluene	108-88-3	44000	ug/m3	19	25	8.1	37	11	76	14	15	20	11	8.2
Trans-1,2-Dichloroethene	156-60-5	12000	ug/m3	<5.9 U	<5.9 U	<5.9 U	<5.9 U	<2 U	<12 U	<2 U	<5.9 U	<2 U	<2 U	<5.9 U
Trans-1,3-Dichloropropene	10061-02-6	NS	ug/m3	<6.8 U	<6.8 U	<6.8 U	<6.8 U	<2.3 U	<14 U	<2.3 U	<6.8 U	<2.3 U	<2.3 U	<6.8 U
Trichloroethene (TCE)	79-01-6	100	ug/m3	<8.1 U	<8.1 U	<8.1 U	<8.1 U	<2.7 U	<16 U	<2.7 U	<8.1 U	<2.7 U	<2.7 U	<8.1 U
Trichlorofluoromethane	75-69-4	NS	ug/m3	270	210	<8.4 U	78	95	980	31	61	65	8.3	23
Vinyl Acetate	108-05-4	NS	ug/m3	<5.3 U	<5.3 U	<5.3 U	<5.3 U	<1.8 U	<11 U	<1.8 U	<5.3 U	<1.8 U	<1.8 U	<5.3 U
Vinyl Chloride	75-01-4	5.2	ug/m3	<3.8 U	<3.8 U	<3.8 U	<3.8 U	<1.3 U	<7.7 U	<1.3 U	<3.8 U	<1.3 U	<1.3 U	<3.8 U

ESL - Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board,
ug/m3 - microgram per cubic meter
NS - no standard

Table 6
Summary of Soil Analytical Results
3049, 3094, 3095, 3163, and 3200 East Vernon Avenue, Vernon, California

Analyte	CAS Number	Soil Direct Exposure Commercial/ Industrial ESL	Soil Direct Exposure Construction Worker: Any Land Use ESL	Location	B-1	B-1	B-2	B-2	B-2	B-2	B-3	B-3	B-3	B-3
				Sample Name	B-1-5	B-1-15	B-2-5	B-2 (9-10)	B-2 (14-15)	B-2 (29-30)	B-3-5	B-3-10	B-3-15	B-3-30
				Sample Date	05/04/2023	05/04/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/05/2023	05/05/2023	05/05/2023	05/05/2023
				Sample Depth	5	15	5	9-10	14-15	29-30	5	10	15	30
				Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Pesticides														
4,4'-DDD	72-54-8	12	81	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA	NA
4,4'-DDE	72-55-9	8.3	57	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA	NA
4,4'-DDT	50-29-3	8.5	57	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA	NA
Aldrin	309-00-2	0.15	7.4	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA	NA
Alpha BHC (Alpha Hexachlorocyclohexane)	319-84-6	NS	NS	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA	NA
Alpha Chlordane	5103-71-9	NS	NS	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA	NA
Alpha Endosulfan	959-98-8	NS	NS	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA	NA
Beta Bhc (Beta Hexachlorocyclohexane)	319-85-7	NS	NS	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA	NA
Beta Endosulfan	33213-65-9	NS	NS	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA	NA
Chlordane (Technical)	12789-03-6	2.2	14	mg/kg	<0.02 UJ	NA	<0.02 U	NA	NA	NA	<0.2 U	NA	NA	NA
Delta Bhc (Delta Hexachlorocyclohexane)	319-86-8	NS	NS	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA	NA
Dieldrin	60-57-1	0.16	1.1	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA	NA
Endosulfan Sulfate	1031-07-8	NS	NS	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA	NA
Endrin	72-20-8	290	74	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA	NA
Endrin Aldehyde	7421-93-4	NS	NS	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA	NA
Endrin Ketone	53494-70-5	NS	NS	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA	NA
Gamma Bhc (Lindane)	58-89-9	2.5	16	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA	NA
Gamma Chlordane (Trans)	5103-74-2	NS	NS	mg/kg	<0.003 UJ	NA	<0.003 U	NA	NA	NA	<0.03 U	NA	NA	NA
Heptachlor	76-44-8	0.53	3.7	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA	NA
Heptachlor Epoxide	1024-57-3	0.28	1.9	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA	NA
Methoxychlor	72-43-5	4800	1200	mg/kg	<0.006 UJ	NA	<0.006 U	NA	NA	NA	<0.06 U	NA	NA	NA
Toxaphene	8001-35-2	2.2	14	mg/kg	<0.05 UJ	NA	<0.05 U	NA	NA	NA	<0.5 U	NA	NA	NA
Polychlorinated Biphenyl														
PCB-1016 (Aroclor 1016)	12674-11-2	NS	NS	mg/kg	NA	NA	<0.1 U	NA	NA	NA	NA	NA	NA	NA
PCB-1221 (Aroclor 1221)	11104-28-2	NS	NS	mg/kg	NA	NA	<0.1 U	NA	NA	NA	NA	NA	NA	NA
PCB-1232 (Aroclor 1232)	11141-16-5	NS	NS	mg/kg	NA	NA	<0.1 U	NA	NA	NA	NA	NA	NA	NA
PCB-1242 (Aroclor 1242)	53469-21-9	NS	NS	mg/kg	NA	NA	<0.1 U	NA	NA	NA	NA	NA	NA	NA
PCB-1248 (Aroclor 1248)	12672-29-6	NS	NS	mg/kg	NA	NA	<0.1 U	NA	NA	NA	NA	NA	NA	NA
PCB-1254 (Aroclor 1254)	11097-69-1	NS	NS	mg/kg	NA	NA	<0.1 U	NA	NA	NA	NA	NA	NA	NA
PCB-1260 (Aroclor 1260)	11096-82-5	NS	NS	mg/kg	NA	NA	<0.1 U	NA	NA	NA	NA	NA	NA	NA
Metals														
Antimony	7440-36-0	160	50	mg/kg	<5 U	<5 U	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA
Arsenic	7440-38-2	**0.31**	0.98	mg/kg	**2.62**	<1.3 U	**2.81**	NA	<1.3 U	NA	**2.65**	NA	**2.79**	NA
Barium	7440-39-3	220000	3000	mg/kg	171	43.2	148	NA	55.5 J	NA	111	NA	106	NA
Beryllium	7440-41-7	230	27	mg/kg	<5 U	<5 U	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA
Cadmium	7440-43-9	1100	51	mg/kg	<0.75 U	<0.75 U	<0.75 U	NA	<0.75 U	NA	<0.75 U	NA	<0.75 U	NA
Chromium, Hexavalent	18540-29-9	6.2	2.8	mg/kg	<0.01 U	<0.01 U	<0.01 U	NA	<0.01 U	NA	0.0903	NA	<0.01 U	NA
Chromium, Total	7440-47-3	NS	NS	mg/kg	24.5	<5 U	21.8	NA	5.3	NA	19.4	NA	17	NA
Cobalt	7440-48-4	350	28	mg/kg	13.8	<5 U	12.9	NA	<5 U	NA	9.8	NA	10.1	NA
Copper	7440-50-8	47000	14000	mg/kg	28.9	<5 U	25.2	NA	<5 U	NA	30.7	NA	20.3	NA
Lead	7439-92-1	**320**	160	mg/kg	10.2	<3 U	6.25	NA	<3 U	NA	8.55	NA	3.93	NA
Mercury	7439-97-6	190	44	mg/kg	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 UJ	NA	<0.5 U	NA	<0.5 U	NA
Molybdenum	7439-98-7	5800	1800	mg/kg	<5 U	<5 U	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA
Nickel	7440-02-0	11000	86	mg/kg	15.6	<5 U	14.3	NA	<5 U	NA	12.8	NA	11	NA
Selenium	7782-49-2	5800	1700	mg/kg	<1.1 U	<1.1 U	<1.1 U	NA	<1.1 U	NA	<1.1 U	NA	<1.1 U	NA
Silver	7440-22-4	5800	1800	mg/kg	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
Thallium	7440-28-0	12	3.5	mg/kg	<5 U	<5 U	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA
Vanadium	7440-62-2	5800	470	mg/kg	53.5	13.8	54	NA	14.2	NA	42	NA	46.6	NA
Zinc	7440-66-6	350000	110000	mg/kg	91.5	14.7	63.5	NA	17.6	NA	60.5	NA	48.1	NA

ESL - Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, 2019 Rev. 2
mg/kg - miligrams per kilogram
NS - no standard
NA - not analyzed

Table 6
Summary of Soil Analytical Results
3049, 3094, 3095, 3163, and 3200 East Vernon Avenue, Vernon, California

Analyte	CAS Number	Soil Direct Exposure Commercial/ Industrial ESL	Soil Direct Exposure Construction Worker: Any Land Use ESL	Location	B-4	B-4	B-5	B-5	B-5	B-6	B-6	B-7	B-7	B-7
				Sample Name	B-4-6	B-4-15	B-5-5	B-5-15	B-5-30	B-6-5	B-6-15	B-7-6	B-7-15	B-7-30
				Sample Date	05/03/2023	05/03/2023	05/03/2023	05/03/2023	05/03/2023	05/04/2023	05/04/2023	05/04/2023	05/04/2023	05/04/2023
				Sample Depth	6	15	5	15	30	5	15	6	15	30
				Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Pesticides														
4,4'-DDD	72-54-8	12	81	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	72-55-9	8.3	57	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	50-29-3	8.5	57	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	0.15	7.4	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha BHC (Alpha Hexachlorocyclohexane)	319-84-6	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha Chlordane	5103-71-9	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha Endosulfan	959-98-8	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beta Bhc (Beta Hexachlorocyclohexane)	319-85-7	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beta Endosulfan	33213-65-9	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlordane (Technical)	12789-03-6	2.2	14	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta Bhc (Delta Hexachlorocyclohexane)	319-86-8	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	0.16	1.1	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	290	74	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Bhc (Lindane)	58-89-9	2.5	16	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Chlordane (Trans)	5103-74-2	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	0.53	3.7	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	0.28	1.9	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	4800	1200	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	2.2	14	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated Biphenyl														
PCB-1016 (Aroclor 1016)	12674-11-2	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1221 (Aroclor 1221)	11104-28-2	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1232 (Aroclor 1232)	11141-16-5	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1242 (Aroclor 1242)	53469-21-9	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1248 (Aroclor 1248)	12672-29-6	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1254 (Aroclor 1254)	11097-69-1	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1260 (Aroclor 1260)	11096-82-5	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals														
Antimony	7440-36-0	160	50	mg/kg	<5 U	<5 U	<5 U	<5 U	NA	<5 U	<5 U	<5 U	<5 U	NA
Arsenic	7440-38-2	**0.31**	0.98	mg/kg	**1.83**	**1.68**	**2.23**	<1.3 U	NA	**2.2**	<1.3 U	**2.31**	<1.3 U	NA
Barium	7440-39-3	220000	3000	mg/kg	108	84.5	89	51.5	NA	103	58	105	57.5	NA
Beryllium	7440-41-7	230	27	mg/kg	<5 U	<5 U	<5 U	<5 U	NA	<5 U	<5 U	<5 U	<5 U	NA
Cadmium	7440-43-9	1100	51	mg/kg	<0.75 U	<0.75 U	<0.75 U	<0.75 U	NA	<0.75 U	<0.75 U	<0.75 U	<0.75 U	NA
Chromium, Hexavalent	18540-29-9	6.2	2.8	mg/kg	<0.01 U	<0.01 U	<0.01 U	<0.01 U	NA	0.0124	<0.01 U	<0.01 U	<0.01 U	NA
Chromium, Total	7440-47-3	NS	NS	mg/kg	13.5	14.1	16.3	7.15	NA	15.9	5.5	16.6	10.4	NA
Cobalt	7440-48-4	350	28	mg/kg	9	7.75	8.05	<5 U	NA	9.05	<5 U	8.8	<5 U	NA
Copper	7440-50-8	47000	14000	mg/kg	12.1	15.8	21.4	5.5	NA	18.6	5.8	22.5	10.5	NA
Lead	7439-92-1	**320**	160	mg/kg	<3 U	<3 U	15.4	<3 U	NA	6.95	<3 U	24.1	5.7	NA
Mercury	7439-97-6	190	44	mg/kg	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
Molybdenum	7439-98-7	5800	1800	mg/kg	<5 U	<5 U	<5 U	<5 U	NA	<5 U	<5 U	<5 U	<5 U	NA
Nickel	7440-02-0	11000	86	mg/kg	8.5	7.6	9.8	<5 U	NA	9.15	<5 U	10.7	6.95	NA
Selenium	7782-49-2	5800	1700	mg/kg	<1.1 U	<1.1 U	<1.1 U	<1.1 U	NA	<1.1 U	<1.1 U	<1.1 U	<1.1 U	NA
Silver	7440-22-4	5800	1800	mg/kg	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA
Thallium	7440-28-0	12	3.5	mg/kg	<5 U	<5 U	<5 U	<5 U	NA	<5 U	<5 U	<5 U	<5 U	NA
Vanadium	7440-62-2	5800	470	mg/kg	36.2	37.2	40.5	27.9	NA	42.2	20.2	38.5	23.3	NA
Zinc	7440-66-6	350000	110000	mg/kg	45.6	39.6	60.5	22.6	NA	53.5	23.6	66	28.2	NA

ESL - Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, 2019 Rev.
mg/kg - miligrams per kilogram
NS - no standard
NA - not analyzed

Table 6
Summary of Soil Analytical Results
3049, 3094, 3095, 3163, and 3200 East Vernon Avenue, Vernon, California

Analyte	CAS Number	Soil Direct Exposure Commercial/ Industrial ESL	Soil Direct Exposure Construction Worker: Any Land Use ESL	Location	B-8	B-8	B-8	B-9	B-9	B-10	B-10	B-11	B-11	B-12
				Sample Name	B-8-5	B-8-15	B-8-30	B-9-5	B-9-15	B-10-5	B-10-15	B-11-5	B-11 (9-10)	B-12-5
				Sample Date	05/05/2023	05/05/2023	05/05/2023	05/05/2023	05/05/2023	05/05/2023	05/05/2023	05/08/2023	05/08/2023	05/08/2023
				Sample Depth	5	15	30	5	15	5	15	5	9-10	5
				Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Pesticides														
4,4'-DDD	72-54-8	12	81	mg/kg	<0.002 U	NA	NA	NA	NA	NA	NA	<0.04 U	NA	NA
4,4'-DDE	72-55-9	8.3	57	mg/kg	<0.002 U	NA	NA	NA	NA	NA	NA	<0.04 U	NA	NA
4,4'-DDT	50-29-3	8.5	57	mg/kg	<0.002 U	NA	NA	NA	NA	NA	NA	<0.04 U	NA	NA
Aldrin	309-00-2	0.15	7.4	mg/kg	<0.002 U	NA	NA	NA	NA	NA	NA	<0.04 U	NA	NA
Alpha BHC (Alpha Hexachlorocyclohexane)	319-84-6	NS	NS	mg/kg	<0.002 U	NA	NA	NA	NA	NA	NA	<0.04 U	NA	NA
Alpha Chlordane	5103-71-9	NS	NS	mg/kg	<0.002 U	NA	NA	NA	NA	NA	NA	<0.04 U	NA	NA
Alpha Endosulfan	959-98-8	NS	NS	mg/kg	<0.002 U	NA	NA	NA	NA	NA	NA	<0.04 U	NA	NA
Beta Bhc (Beta Hexachlorocyclohexane)	319-85-7	NS	NS	mg/kg	<0.002 U	NA	NA	NA	NA	NA	NA	<0.04 U	NA	NA
Beta Endosulfan	33213-65-9	NS	NS	mg/kg	<0.002 U	NA	NA	NA	NA	NA	NA	<0.04 U	NA	NA
Chlordane (Technical)	12789-03-6	2.2	14	mg/kg	<0.02 U	NA	NA	NA	NA	NA	NA	<0.4 U	NA	NA
Delta Bhc (Delta Hexachlorocyclohexane)	319-86-8	NS	NS	mg/kg	<0.002 U	NA	NA	NA	NA	NA	NA	<0.04 U	NA	NA
Dieldrin	60-57-1	0.16	1.1	mg/kg	<0.002 U	NA	NA	NA	NA	NA	NA	<0.04 U	NA	NA
Endosulfan Sulfate	1031-07-8	NS	NS	mg/kg	<0.002 U	NA	NA	NA	NA	NA	NA	<0.04 U	NA	NA
Endrin	72-20-8	290	74	mg/kg	<0.002 U	NA	NA	NA	NA	NA	NA	<0.04 U	NA	NA
Endrin Aldehyde	7421-93-4	NS	NS	mg/kg	<0.002 U	NA	NA	NA	NA	NA	NA	<0.04 U	NA	NA
Endrin Ketone	53494-70-5	NS	NS	mg/kg	<0.002 U	NA	NA	NA	NA	NA	NA	<0.04 U	NA	NA
Gamma Bhc (Lindane)	58-89-9	2.5	16	mg/kg	<0.002 U	NA	NA	NA	NA	NA	NA	<0.04 U	NA	NA
Gamma Chlordane (Trans)	5103-74-2	NS	NS	mg/kg	<0.003 U	NA	NA	NA	NA	NA	NA	<0.06 U	NA	NA
Heptachlor	76-44-8	0.53	3.7	mg/kg	<0.002 U	NA	NA	NA	NA	NA	NA	<0.04 U	NA	NA
Heptachlor Epoxide	1024-57-3	0.28	1.9	mg/kg	<0.002 U	NA	NA	NA	NA	NA	NA	<0.04 U	NA	NA
Methoxychlor	72-43-5	4800	1200	mg/kg	<0.006 U	NA	NA	NA	NA	NA	NA	<0.12 U	NA	NA
Toxaphene	8001-35-2	2.2	14	mg/kg	<0.05 U	NA	NA	NA	NA	NA	NA	<1 U	NA	NA
Polychlorinated Biphenyl														
PCB-1016 (Aroclor 1016)	12674-11-2	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	<0.1 U	NA	<0.1 U
PCB-1221 (Aroclor 1221)	11104-28-2	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	<0.1 U	NA	<0.1 U
PCB-1232 (Aroclor 1232)	11141-16-5	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	<0.1 U	NA	<0.1 U
PCB-1242 (Aroclor 1242)	53469-21-9	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	<0.1 U	NA	<0.1 U
PCB-1248 (Aroclor 1248)	12672-29-6	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	<0.1 U	NA	<0.1 U
PCB-1254 (Aroclor 1254)	11097-69-1	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	<0.1 U	NA	<0.1 U
PCB-1260 (Aroclor 1260)	11096-82-5	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	<0.1 U	NA	<0.1 U
Metals														
Antimony	7440-36-0	160	50	mg/kg	<5 U	<5 U	NA	<5 U	<5 U	<5 U	<5 U	<5 U	24.4	<5 U
Arsenic	7440-38-2	**0.31**	0.98	mg/kg	**1.54**	<1.3 U	NA	**3.22**	<1.3 U	**1.5**	**1.61**	**3.44**	**34.4**	<1.3 U
Barium	7440-39-3	220000	3000	mg/kg	82	60.5	NA	127	51.5	84	90.5	105	1,020	55.5
Beryllium	7440-41-7	230	27	mg/kg	<5 U	<5 U	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
Cadmium	7440-43-9	1100	51	mg/kg	<0.75 U	<0.75 U	NA	<0.75 U	<0.75 U	<0.75 U	<0.75 U	<0.75 U	3.64	<0.75 U
Chromium, Hexavalent	18540-29-9	6.2	2.8	mg/kg	<0.01 U	<0.01 U	NA	<0.01 U	<0.01 U	<0.01 U	<0.01 U	<0.01 U	0.249	<0.01 U
Chromium, Total	7440-47-3	NS	NS	mg/kg	12.2	9	NA	39.8	7.05	12	12.2	13.9	42.9	8.35
Cobalt	7440-48-4	350	28	mg/kg	7.6	5.9	NA	11	<5 U	7.35	8.2	8	13.9	5.05
Copper	7440-50-8	47000	14000	mg/kg	9.5	7	NA	43.7	6.05	10.6	11.2	45.8	800	7.6
Lead	7439-92-1	**320**	160	mg/kg	<3 U	<3 U	NA	36.2	<3 U	<3 U	<3 U	89.5	**1,110**	<3 U
Mercury	7439-97-6	190	44	mg/kg	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	0.61	<0.5 U
Molybdenum	7439-98-7	5800	1800	mg/kg	<5 U	<5 U	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
Nickel	7440-02-0	11000	86	mg/kg	6.75	<5 U	NA	46.6	<5 U	7.15	7.65	11.3	136	<5 U
Selenium	7782-49-2	5800	1700	mg/kg	<1.1 U	<1.1 U	NA	<1.1 U	<1.1 U	<1.1 U	<1.1 U	<1.1 U	<1.1 U	<1.1 U
Silver	7440-22-4	5800	1800	mg/kg	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	<0.5 U	2.89	<0.5 U
Thallium	7440-28-0	12	3.5	mg/kg	<5 U	<5 U	NA	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U	<5 U
Vanadium	7440-62-2	5800	470	mg/kg	38.7	34	NA	48.4	27.5	33.7	35.5	40.3	69.5	25.3
Zinc	7440-66-6	350000	110000	mg/kg	37.9	26.7	NA	80.5	21.7	34.3	39.5	93.5	1,150	24.6

ESL - Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, 2019 Rev.
mg/kg - miligrams per kilogram
NS - no standard
NA - not analyzed

Table 6
Summary of Soil Analytical Results
3049, 3094, 3095, 3163, and 3200 East Vernon Avenue, Vernon, California

Analyte	CAS Number	Soil Direct Exposure Commercial/ Industrial ESL	Soil Direct Exposure Construction Worker: Any Land Use ESL	Location	B-12	B-12	B-12	B-13	B-13	B-13	B-13
				Sample Name	B-12 (9-10)	B-12 (14-15)	B-12 (29-30.5)	B-13-5	B-13 (9-10)	B-13 (14-15)	B-13 (29-30)
				Sample Date	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023
				Sample Depth	9-10	14-15	29-30.5	5	9-10	14-15	29-30
				Unit	Result	Result	Result	Result	Result	Result	Result
Pesticides											
4,4'-DDD	72-54-8	12	81	mg/kg	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	72-55-9	8.3	57	mg/kg	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	50-29-3	8.5	57	mg/kg	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	0.15	7.4	mg/kg	NA	NA	NA	NA	NA	NA	NA
Alpha BHC (Alpha Hexachlorocyclohexane)	319-84-6	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA
Alpha Chlordane	5103-71-9	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA
Alpha Endosulfan	959-98-8	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA
Beta Bhc (Beta Hexachlorocyclohexane)	319-85-7	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA
Beta Endosulfan	33213-65-9	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA
Chlordane (Technical)	12789-03-6	2.2	14	mg/kg	NA	NA	NA	NA	NA	NA	NA
Delta Bhc (Delta Hexachlorocyclohexane)	319-86-8	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	0.16	1.1	mg/kg	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	290	74	mg/kg	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA
Gamma Bhc (Lindane)	58-89-9	2.5	16	mg/kg	NA	NA	NA	NA	NA	NA	NA
Gamma Chlordane (Trans)	5103-74-2	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	0.53	3.7	mg/kg	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	0.28	1.9	mg/kg	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	4800	1200	mg/kg	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	2.2	14	mg/kg	NA	NA	NA	NA	NA	NA	NA
Polychlorinated Biphenyl											
PCB-1016 (Aroclor 1016)	12674-11-2	NS	NS	mg/kg	NA	NA	NA	<0.1 U	NA	NA	NA
PCB-1221 (Aroclor 1221)	11104-28-2	NS	NS	mg/kg	NA	NA	NA	<0.1 U	NA	NA	NA
PCB-1232 (Aroclor 1232)	11141-16-5	NS	NS	mg/kg	NA	NA	NA	<0.1 U	NA	NA	NA
PCB-1242 (Aroclor 1242)	53469-21-9	NS	NS	mg/kg	NA	NA	NA	<0.1 U	NA	NA	NA
PCB-1248 (Aroclor 1248)	12672-29-6	NS	NS	mg/kg	NA	NA	NA	<0.1 U	NA	NA	NA
PCB-1254 (Aroclor 1254)	11097-69-1	NS	NS	mg/kg	NA	NA	NA	<0.1 U	NA	NA	NA
PCB-1260 (Aroclor 1260)	11096-82-5	NS	NS	mg/kg	NA	NA	NA	<0.1 U	NA	NA	NA
Metals											
Antimony	7440-36-0	160	50	mg/kg	NA	<5 U	NA	<5 U	NA	<5 U	NA
Arsenic	7440-38-2	**0.31**	0.98	mg/kg	NA	<1.3 U	NA	<1.3 U	NA	<1.3 U	NA
Barium	7440-39-3	220000	3000	mg/kg	NA	42.3	NA	61.5	NA	45.5	NA
Beryllium	7440-41-7	230	27	mg/kg	NA	<5 U	NA	<5 U	NA	<5 U	NA
Cadmium	7440-43-9	1100	51	mg/kg	NA	<0.75 U	NA	<0.75 U	NA	<0.75 U	NA
Chromium, Hexavalent	18540-29-9	6.2	2.8	mg/kg	NA	<0.01 U	NA	<0.01 U	NA	<0.01 U	NA
Chromium, Total	7440-47-3	NS	NS	mg/kg	NA	14.7	NA	8.3	NA	6.15	NA
Cobalt	7440-48-4	350	28	mg/kg	NA	<5 U	NA	5.5	NA	<5 U	NA
Copper	7440-50-8	47000	14000	mg/kg	NA	5	NA	6.85	NA	<5 U	NA
Lead	7439-92-1	**320**	160	mg/kg	NA	<3 U	NA	<3 U	NA	<3 U	NA
Mercury	7439-97-6	190	44	mg/kg	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
Molybdenum	7439-98-7	5800	1800	mg/kg	NA	<5 U	NA	<5 U	NA	<5 U	NA
Nickel	7440-02-0	11000	86	mg/kg	NA	<5 U	NA	5.15	NA	<5 U	NA
Selenium	7782-49-2	5800	1700	mg/kg	NA	<1.1 U	NA	<1.1 U	NA	<1.1 U	NA
Silver	7440-22-4	5800	1800	mg/kg	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
Thallium	7440-28-0	12	3.5	mg/kg	NA	<5 U	NA	<5 U	NA	<5 U	NA
Vanadium	7440-62-2	5800	470	mg/kg	NA	21.1	NA	26.3	NA	19.1	NA
Zinc	7440-66-6	350000	110000	mg/kg	NA	18.8	NA	26.9	NA	19.8	NA

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Table 6
Summary of Soil Analytical Results
3049, 3094, 3095, 3163, and 3200 East Vernon Avenue, Vernon, California

Analyte	CAS Number	Soil Direct Exposure Commercial/ Industrial ESL	Soil Direct Exposure Construction Worker: Any Land Use ESL	Location	B-1	B-1	B-2	B-2	B-2	B-2	B-3	B-3	B-3	B-3	B-4	B-4	B-5
				Sample Name	B-1-5	B-1-15	B-2-5	B-2 (9-10)	B-2 (14-15)	B-2 (29-30)	B-3-5	B-3-10	B-3-15	B-3-30	B-4-6	B-4-15	B-5-5
				Sample Date	05/04/2023	05/04/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/05/2023	05/05/2023	05/05/2023	05/05/2023	05/03/2023	05/03/2023	05/03/2023
				Sample Depth	5	15	5	9-10	14-15	29-30	5	10	15	30	6	15	5
				Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Volatile Organic Compounds (VOCs)																	
1,1,1,2-Tetrachloroethane	630-20-6	0.89	190	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
1,1,1-Trichloroethane	71-55-6	7300	7200	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	2.7	49	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	5.1	6.3	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
1,1-Dichloroethane	75-34-3	16	370	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
1,1-Dichloroethene	75-35-4	350	350	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
1,1-Dichloropropene	563-58-6	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
1,2,3-Trichlorobenzene	87-61-6	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
1,2,3-Trichloropropane	96-18-4	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	110	240	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
1,2,4-Trimethylbenzene	95-63-6	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
1,2-Dibromo-3-Chloropropane	96-12-8	0.059	1.1	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
1,2-Dibromoethane	106-93-4	0.16	3.3	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	9400	7800	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
1,2-Dichloroethane	107-06-2	2.1	45	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
1,2-Dichloropropane	78-87-5	4.4	66	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
1,3,5-Trimethylbenzene	108-67-8	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
1,3-Dichloropropane	142-28-9	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	12	280	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
2,2-Dichloropropane	594-20-7	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
2-Butanone	78-93-3	200000	120000	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
2-Chlorotoluene	95-49-8	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
4-Chlorotoluene	106-43-4	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
Benzene	71-43-2	1.4	33	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
Bromobenzene	108-86-1	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
Bromochloromethane	74-97-5	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
Bromodichloromethane	75-27-4	1.3	28	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
Bromoform	75-25-2	80	1200	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
Bromomethane	74-83-9	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
Carbon Tetrachloride	56-23-5	0.44	10	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
Chlorobenzene	108-90-7	1300	1200	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
Chloroethane	75-00-3	59000	59000	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
Chloroform	67-66-3	1.4	34	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
Chloromethane	74-87-3	470	470	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	85	78	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
cis-1,3-Dichloropropene	10061-01-5	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
Dibromochloromethane	124-48-1	39	290	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
Dibromomethane	74-95-3	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
Dichlorodifluoromethane	75-71-8	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
Diisopropyl ether	108-20-3	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
Ethyl tert-Butyl ether	637-92-3	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
Ethylbenzene	100-41-4	26	540	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
Freon 113	76-13-1	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
Hexachlorobutadiene	87-68-3	5.3	100	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
Isopropyl Benzene	98-82-8	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
m,p-Xylene	179601-23-1	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
Methylene Chloride	75-09-2	25	490	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
MTBE	1634-04-4	210	4100	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
Naphthalene	91-20-3	17	400	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
n-Butylbenzene	104-51-8	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
n-Propylbenzene	103-65-1	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
o-Xylene	95-47-6	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
p-Isopropyltoluene	99-87-6	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
sec-Butyl Benzene	135-98-8	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
Styrene	100-42-5	33000	25000	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
TAME	994-05-8	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
TBA	75-65-0	NS	NS	mg/kg	NA	NA	NA	<0.05	NA	<0.05	NA	<0.05	NA	<0.05	NA	NA	NA
tert-Butylbenzene	98-06-6	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
Tetrachloroethene	127-18-4	2.7	33	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
Toluene	108-88-3	5300	4700	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	600	570	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
trans-1,3-Dichloropropene	10061-02-6	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
Trichloroethene	79-01-6	6.1	18	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
Trichlorofluoromethane	75-69-4	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA
Vinyl Chloride	75-01-4	0.15	3.4	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA

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mg/kg - miligrams per kilogram
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Table 6
Summary of Soil Analytical Results
3049, 3094, 3095, 3163, and 3200 East Vernon Avenue, Vernon, California

Analyte	CAS Number	Soil Direct Exposure Commercial/ Industrial ESL	Soil Direct Exposure Construction Worker: Any Land Use ESL	Location	B-5	B-5	B-6	B-6	B-7	B-7	B-7	B-8	B-8	B-8	B-9	B-9	B-10
				Sample Name	B-5-15	B-5-30	B-6-5	B-6-15	B-7-6	B-7-15	B-7-30	B-8-5	B-8-15	B-8-30	B-9-5	B-9-15	B-10-5
				Sample Date	05/03/2023	05/03/2023	05/04/2023	05/04/2023	05/04/2023	05/04/2023	05/04/2023	05/05/2023	05/05/2023	05/05/2023	05/05/2023	05/05/2023	05/05/2023
				Sample Depth	15	30	5	15	6	15	30	5	15	30	5	15	5
				Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Volatile Organic Compounds (VOCs)																	
1,1,1,2-Tetrachloroethane	630-20-6	0.89	190	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
1,1,1-Trichloroethane	71-55-6	7300	7200	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	2.7	49	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	5.1	6.3	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
1,1-Dichloroethane	75-34-3	16	370	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
1,1-Dichloroethene	75-35-4	350	350	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
1,1-Dichloropropene	563-58-6	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
1,2,3-Trichlorobenzene	87-61-6	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
1,2,3-Trichloropropane	96-18-4	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	110	240	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
1,2,4-Trimethylbenzene	95-63-6	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
1,2-Dibromo-3-Chloropropane	96-12-8	0.059	1.1	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
1,2-Dibromoethane	106-93-4	0.16	3.3	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	9400	7800	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
1,2-Dichloroethane	107-06-2	2.1	45	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
1,2-Dichloropropane	78-87-5	4.4	66	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
1,3,5-Trimethylbenzene	108-67-8	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
1,3-Dichloropropane	142-28-9	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	12	280	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
2,2-Dichloropropane	594-20-7	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
2-Butanone	78-93-3	200000	120000	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
2-Chlorotoluene	95-49-8	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
4-Chlorotoluene	106-43-4	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
Benzene	71-43-2	1.4	33	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
Bromobenzene	108-86-1	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
Bromochloromethane	74-97-5	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
Bromodichloromethane	75-27-4	1.3	28	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
Bromoform	75-25-2	80	1200	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
Bromomethane	74-83-9	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
Carbon Tetrachloride	56-23-5	0.44	10	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
Chlorobenzene	108-90-7	1300	1200	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
Chloroethane	75-00-3	59000	59000	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
Chloroform	67-66-3	1.4	34	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
Chloromethane	74-87-3	470	470	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	85	78	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
cis-1,3-Dichloropropene	10061-01-5	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
Dibromochloromethane	124-48-1	39	290	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
Dibromomethane	74-95-3	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
Dichlorodifluoromethane	75-71-8	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
Diisopropyl ether	108-20-3	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
Ethyl tert-Butyl ether	637-92-3	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
Ethylbenzene	100-41-4	26	540	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
Freon 113	76-13-1	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
Hexachlorobutadiene	87-68-3	5.3	100	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
Isopropyl Benzene	98-82-8	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
m,p-Xylene	179601-23-1	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
Methylene Chloride	75-09-2	25	490	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
MTBE	1634-04-4	210	4100	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
Naphthalene	91-20-3	17	400	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
n-Butylbenzene	104-51-8	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
n-Propylbenzene	103-65-1	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
o-Xylene	95-47-6	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
p-Isopropyltoluene	99-87-6	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
sec-Butyl Benzene	135-98-8	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
Styrene	100-42-5	33000	25000	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
TAME	994-05-8	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
TBA	75-65-0	NS	NS	mg/kg	NA	<0.05	NA	NA	NA	NA	<0.05	NA	NA	<0.05	NA	NA	NA
tert-Butylbenzene	98-06-6	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
Tetrachloroethene	127-18-4	2.7	33	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
Toluene	108-88-3	5300	4700	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	600	570	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
trans-1,3-Dichloropropene	10061-02-6	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
Trichloroethene	79-01-6	6.1	18	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
Trichlorofluoromethane	75-69-4	NS	NS	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA
Vinyl Chloride	75-01-4	0.15	3.4	mg/kg	NA	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA

ESL - Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, 2019 Re
mg/kg - miligrams per kilogram
NS - no standard
NA - not analyzed

Table 6
Summary of Soil Analytical Results
3049, 3094, 3095, 3163, and 3200 East Vernon Avenue, Vernon, California

Analyte	CAS Number	Soil Direct Exposure Commercial/ Industrial ESL	Soil Direct Exposure Construction Worker: Any Land Use ESL	Location	B-10	B-11	B-11	B-12	B-12	B-12	B-12	B-13	B-13	B-13	B-13
				Sample Name	B-10-15	B-11-5	B-11 (9-10)	B-12-5	B-12 (9-10)	B-12 (14-15)	B-12 (29-30.5)	B-13-5	B-13 (9-10)	B-13 (14-15)	B-13 (29-30)
				Sample Date	05/05/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023
				Sample Depth	15	5	9-10	5	9-10	14-15	29-30.5	5	9-10	14-15	29-30
				Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Volatile Organic Compounds (VOCs)															
1,1,1,2-Tetrachloroethane	630-20-6	0.89	190	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,1,1-Trichloroethane	71-55-6	7300	7200	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,1,2,2-Tetrachloroethane	79-34-5	2.7	49	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,1,2-Trichloroethane	79-00-5	5.1	6.3	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,1-Dichloroethane	75-34-3	16	370	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,1-Dichloroethene	75-35-4	350	350	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,1-Dichloropropene	563-58-6	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,2,3-Trichlorobenzene	87-61-6	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,2,3-Trichloropropane	96-18-4	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,2,4-Trichlorobenzene	120-82-1	110	240	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,2,4-Trimethylbenzene	95-63-6	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,2-Dibromo-3-Chloropropane	96-12-8	0.059	1.1	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,2-Dibromoethane	106-93-4	0.16	3.3	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,2-Dichlorobenzene	95-50-1	9400	7800	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,2-Dichloroethane	107-06-2	2.1	45	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,2-Dichloropropane	78-87-5	4.4	66	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,3,5-Trimethylbenzene	108-67-8	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,3-Dichlorobenzene	541-73-1	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,3-Dichloropropane	142-28-9	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,4-Dichlorobenzene	106-46-7	12	280	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
2,2-Dichloropropane	594-20-7	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
2-Butanone	78-93-3	200000	120000	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
2-Chlorotoluene	95-49-8	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
4-Chlorotoluene	106-43-4	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Benzene	71-43-2	1.4	33	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Bromobenzene	108-86-1	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Bromochloromethane	74-97-5	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Bromodichloromethane	75-27-4	1.3	28	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Bromoform	75-25-2	80	1200	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Bromomethane	74-83-9	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Carbon Tetrachloride	56-23-5	0.44	10	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Chlorobenzene	108-90-7	1300	1200	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Chloroethane	75-00-3	59000	59000	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Chloroform	67-66-3	1.4	34	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Chloromethane	74-87-3	470	470	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
cis-1,2-Dichloroethene	156-59-2	85	78	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
cis-1,3-Dichloropropene	10061-01-5	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Dibromochloromethane	124-48-1	39	290	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Dibromomethane	74-95-3	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Dichlorodifluoromethane	75-71-8	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Diisopropyl ether	108-20-3	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Ethyl tert-Butyl ether	637-92-3	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Ethylbenzene	100-41-4	26	540	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Freon 113	76-13-1	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Hexachlorobutadiene	87-68-3	5.3	100	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Isopropyl Benzene	98-82-8	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
m,p-Xylene	179601-23-1	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Methylene Chloride	75-09-2	25	490	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
MTBE	1634-04-4	210	4100	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Naphthalene	91-20-3	17	400	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
n-Butylbenzene	104-51-8	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
n-Propylbenzene	103-65-1	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
o-Xylene	95-47-6	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
p-Isopropyltoluene	99-87-6	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
sec-Butyl Benzene	135-98-8	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Styrene	100-42-5	33000	25000	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
TAME	994-05-8	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
TBA	75-65-0	NS	NS	mg/kg	NA	NA	NA	NA	<0.05	NA	<0.05	NA	<0.05	NA	<0.05
tert-Butylbenzene	98-06-6	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Tetrachloroethene	127-18-4	2.7	33	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Toluene	108-88-3	5300	4700	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
trans-1,2-Dichloroethene	156-60-5	600	570	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
trans-1,3-Dichloropropene	10061-02-6	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Trichloroethene	79-01-6	6.1	18	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Trichlorofluoromethane	75-69-4	NS	NS	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Vinyl Chloride	75-01-4	0.15	3.4	mg/kg	NA	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01

ESL - Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, 2019 Re
mg/kg - miligrams per kilogram
NS - no standard
NA - not analyzed

Table 6
Summary of Soil Analytical Results
3049, 3094, 3095, 3163, and 3200 East Vernon Avenue, Vernon, California

Analyte	CAS Number	Soil Direct Exposure Commercial/ Industrial ESL	Soil Direct Exposure Construction Worker: Any Land Use ESL	Location	B-1	B-1	B-2	B-2	B-2	B-2	B-3	B-3	B-3	B-3	B-4	B-4	B-5	B-5	B-5	B-6	B-6	B-7	B-7
				Sample Name	B-1-5	B-1-15	B-2-5	B-2 (9-10)	B-2 (14-15)	B-2 (29-30)	B-3-5	B-3-10	B-3-15	B-3-30	B-4-6	B-4-15	B-5-5	B-5-15	B-5-30	B-6-5	B-6-15	B-7-6	B-7-15
				Sample Date	05/04/2023	05/04/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/05/2023	05/05/2023	05/05/2023	05/05/2023	05/03/2023	05/03/2023	05/03/2023	05/03/2023	05/03/2023	05/04/2023	05/04/2023	05/04/2023	05/04/2023
				Sample Depth	5	15	5	9-10	14-15	29-30	5	10	15	30	6	15	5	15	30	5	15	6	15
				Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Semi-Volatile Organic Compounds (SVOCs)																							
1,2,4-Trichlorobenzene	120-82-1	110	240	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	9400	7800	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
1,2-Dinitrobenzene	528-29-0	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
1,3-Dinitrobenzene	99-65-0	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	12	280	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
1,4-Dinitrobenzene	100-25-4	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
1-Methylnaphthalene	90-12-0	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
2,3,4,6-Tetrachlorophenol	58-90-2	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA	<0.288	NA	NA	NA	NA
2,3,5,6-Tetrachlorophenol	935-95-5	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA	<0.288	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	120000	35000	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA	<0.288	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	47	350	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA	<0.288	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	3500	1100	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA	<0.288	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	24000	7100	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA	<0.288	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	2300	710	mg/kg	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720	NA	NA	NA	NA	<0.720	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	11	79	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
2,6-Dichlorophenol	87-65-0	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA	<0.288	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
2-Chlorophenol	95-57-8	5800	1800	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA	<0.288	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	3000	670	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
2-Methylphenol (o-Cresol)	95-48-7	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA	<0.288	NA	NA	NA	NA
2-Nitrophenol	88-75-5	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA	<0.288	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	2.7	20	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
3-/4-Methylphenol (p-/m-Cresol)	65794-96-9	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA	<0.288	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA	<0.288	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA	<0.288	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
4-Nitrophenol	100-02-7	NS	NS	mg/kg	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720	NA	NA	NA	NA	<0.720	NA	NA	NA	NA
Acenaphthene	83-32-9	45000	10000	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Acenaphthylene	208-96-8	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Anthracene	120-12-7	230000	50000	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Azobenzene	103-33-3	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Benzidine	92-87-5	NS	NS	mg/kg	NA	NA	NA	<0.147	NA	<0.147	NA	<0.147	NA	<0.147	NA	NA	NA	NA	<0.147	NA	NA	NA	NA
Benzo(a)anthracene	56-55-3	20	110	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Benzo(a)pyrene	50-32-8	2.1	10	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Benzo(b)fluorathene	205-99-2	21	110	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Benzo(g,h,i)perylene	191-24-2	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
benzo(k)fluorathene	207-08-9	210	910	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Benzoic Acid	65-85-0	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA	<0.288	NA	NA	NA	NA
Benzyl Alcohol	100-51-6	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA	<0.288	NA	NA	NA	NA
Bis(2-Chloroethoxy)methane	111-91-1	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Bis(2-chloroethyl)ether	111-44-4	0.47	6.4	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	108-60-1	23	270	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	160	950	mg/kg	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720	NA	NA	NA	NA	<0.720	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	NS	NS	mg/kg	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720	NA	NA	NA	NA	<0.720	NA	NA	NA	NA
Carbazole	86-74-8	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Chrysene	218-01-9	2100	9100	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Dibenzo(a,h)anthracene	53-70-3	2.1	11	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Dibenzofuran	132-64-9	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Diethylphthalate	84-66-2	660000	150000	mg/kg	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720	NA	NA	NA	NA	<0.720	NA	NA	NA	NA
Dimethyl phthalate	131-11-3	NS	NS	mg/kg	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720	NA	NA	NA	NA	<0.720	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Di-n-Octylphthalate	117-84-0	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Diphenylamine	122-39-4	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Fluoranthene	206-44-0	30000	6700	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Fluorene	86-73-7	30000	6700	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Hexachloro-1,3-butadiene	87-68-3	5.3	100	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	0.78	7.7	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Hexachloroethane	67-72-1	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Indeno(1,2,3-c,d)pyrene	193-39-5	21	110	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Isophorone	78-59-1	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Naphthalene	91-20-3	17	400	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Nitrobenzene	98-95-3	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
N-Methyl-2-Pyrrolidone (NMP)	872-50-4	NS	NS	mg/kg	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720	NA	NA	NA	NA	<0.720	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	NS	NS	mg/kg	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720	NA	NA	NA	NA	<0.720	NA	NA	NA	NA
N-nitroso-di-n-propylamine	621-64-7	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Pentachlorophenol	87-86-5	4	20	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA	<0.288	NA	NA	NA	NA
Phenanthrene	85-01-8	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Phenol	108-95-2	350000	98000	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA	<0.288	NA	NA	NA	NA
Pyrene	129-00-0	23000	5000	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA	<0.144	NA	NA	NA	NA
Pyridine	110-86-1	NS	NS	mg/kg	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720	NA	NA	NA	NA	<0.720	NA	NA	NA	NA

ESL - Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, 2019 Rev. 2
mg/kg - miligrams per kilogram
NS - no standard
NA - not analyzed

Table 6
Summary of Soil Analytical Results
3049, 3094, 3095, 3163, and 3200 East Vernon Avenue, Vernon, California

Analyte	CAS Number	Soil Direct Exposure Commercial/ Industrial ESL	Soil Direct Exposure Construction Worker: Any Land Use ESL	Location	B-7	B-8	B-8	B-8	B-9	B-9	B-10	B-10	B-11	B-11	B-12	B-12	B-12	B-12	B-13	B-13	B-13	B-13
				Sample Name	B-7-30	B-8-5	B-8-15	B-8-30	B-9-5	B-9-15	B-10-5	B-10-15	B-11-5	B-11 (9-10)	B-12-5	B-12 (9-10)	B-12 (14-15)	B-12 (29-30.5)	B-13-5	B-13 (9-10)	B-13 (14-15)	B-13 (29-30)
				Sample Date	05/04/2023	05/05/2023	05/05/2023	05/05/2023	05/05/2023	05/05/2023	05/05/2023	05/05/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023
				Sample Depth	30	5	15	30	5	15	5	15	5	9-10	5	9-10	14-15	29-30.5	5	9-10	14-15	29-30
				Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Semi-Volatile Organic Compounds (SVOCs)																						
1,2,4-Trichlorobenzene	120-82-1	110	240	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
1,2-Dichlorobenzene	95-50-1	9400	7800	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
1,2-Dinitrobenzene	528-29-0	NS	NS	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
1,3-Dichlorobenzene	541-73-1	NS	NS	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
1,3-Dinitrobenzene	99-65-0	NS	NS	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
1,4-Dichlorobenzene	106-46-7	12	280	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
1,4-Dinitrobenzene	100-25-4	NS	NS	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
1-Methylnaphthalene	90-12-0	NS	NS	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
2,3,4,6-Tetrachlorophenol	58-90-2	NS	NS	mg/kg	<0.288	NA	NA	<0.288	NA	NA	NA	NA	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
2,3,5,6-Tetrachlorophenol	935-95-5	NS	NS	mg/kg	<0.288	NA	NA	<0.288	NA	NA	NA	NA	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
2,4,5-Trichlorophenol	95-95-4	120000	35000	mg/kg	<0.288	NA	NA	<0.288	NA	NA	NA	NA	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
2,4,6-Trichlorophenol	88-06-2	47	350	mg/kg	<0.288	NA	NA	<0.288	NA	NA	NA	NA	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
2,4-Dichlorophenol	120-83-2	3500	1100	mg/kg	<0.288	NA	NA	<0.288	NA	NA	NA	NA	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
2,4-Dimethylphenol	105-67-9	24000	7100	mg/kg	<0.288	NA	NA	<0.288	NA	NA	NA	NA	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
2,4-Dinitrophenol	51-28-5	2300	710	mg/kg	<0.720	NA	NA	<0.720	NA	NA	NA	NA	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720
2,4-Dinitrotoluene	121-14-2	11	79	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
2,6-Dichlorophenol	87-65-0	NS	NS	mg/kg	<0.288	NA	NA	<0.288	NA	NA	NA	NA	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
2,6-Dinitrotoluene	606-20-2	NS	NS	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
2-Chloronaphthalene	91-58-7	NS	NS	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
2-Chlorophenol	95-57-8	5800	1800	mg/kg	<0.288	NA	NA	<0.288	NA	NA	NA	NA	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
2-Methylnaphthalene	91-57-6	3000	670	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
2-Methylphenol (o-Cresol)	95-48-7	NS	NS	mg/kg	<0.288	NA	NA	<0.288	NA	NA	NA	NA	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
2-Nitrophenol	88-75-5	NS	NS	mg/kg	<0.288	NA	NA	<0.288	NA	NA	NA	NA	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
3,3-Dichlorobenzidine	91-94-1	2.7	20	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
3-/4-Methylphenol (p-/m-Cresol)	65794-96-9	NS	NS	mg/kg	<0.288	NA	NA	<0.288	NA	NA	NA	NA	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
4,6-Dinitro-2-methylphenol	534-52-1	NS	NS	mg/kg	<0.288	NA	NA	<0.288	NA	NA	NA	NA	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
4-Bromophenyl-phenylether	101-55-3	NS	NS	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
4-Chloro-3-methylphenol	59-50-7	NS	NS	mg/kg	<0.288	NA	NA	<0.288	NA	NA	NA	NA	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
4-Chlorophenyl-phenylether	7005-72-3	NS	NS	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
4-Nitrophenol	100-02-7	NS	NS	mg/kg	<0.720	NA	NA	<0.720	NA	NA	NA	NA	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720
Acenaphthene	83-32-9	45000	10000	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Acenaphthylene	208-96-8	NS	NS	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Anthracene	120-12-7	230000	50000	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Azobenzene	103-33-3	NS	NS	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Benzidine	92-87-5	NS	NS	mg/kg	<0.147	NA	NA	<0.147	NA	NA	NA	NA	NA	NA	NA	<0.147	NA	<0.147	NA	<0.147	NA	<0.147
Benzo(a)anthracene	56-55-3	20	110	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Benzo(a)pyrene	50-32-8	2.1	10	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Benzo(b)fluorathene	205-99-2	21	110	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Benzo(g,h,i)perylene	191-24-2	NS	NS	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
benzo(k)fluorathene	207-08-9	210	910	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Benzoic Acid	65-85-0	NS	NS	mg/kg	<0.288	NA	NA	<0.288	NA	NA	NA	NA	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
Benzyl Alcohol	100-51-6	NS	NS	mg/kg	<0.288	NA	NA	<0.288	NA	NA	NA	NA	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
Bis(2-Chloroethoxy)methane	111-91-1	NS	NS	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Bis(2-chloroethyl)ether	111-44-4	0.47	6.4	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Bis(2-chloroisopropyl)ether	108-60-1	23	270	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Bis(2-Ethylhexyl)phthalate	117-81-7	160	950	mg/kg	<0.720	NA	NA	<0.720	NA	NA	NA	NA	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720
Butylbenzylphthalate	85-68-7	NS	NS	mg/kg	<0.720	NA	NA	<0.720	NA	NA	NA	NA	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720
Carbazole	86-74-8	NS	NS	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Chrysene	218-01-9	2100	9100	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Dibenzo(a,h)anthracene	53-70-3	2.1	11	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Dibenzofuran	132-64-9	NS	NS	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Diethylphthalate	84-66-2	660000	150000	mg/kg	<0.720	NA	NA	<0.720	NA	NA	NA	NA	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720
Dimethyl phthalate	131-11-3	NS	NS	mg/kg	<0.720	NA	NA	<0.720	NA	NA	NA	NA	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720
Di-n-butylphthalate	84-74-2	NS	NS	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Di-n-Octylphthalate	117-84-0	NS	NS	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Diphenylamine	122-39-4	NS	NS	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Fluoranthene	206-44-0	30000	6700	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Fluorene	86-73-7	30000	6700	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Hexachloro-1,3-butadiene	87-68-3	5.3	100	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Hexachlorobenzene	118-74-1	0.78	7.7	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Hexachlorocyclopentadiene	77-47-4	NS	NS	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Hexachloroethane	67-72-1	NS	NS	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Indeno(1,2,3-c,d)pyrene	193-39-5	21	110	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Isophorone	78-59-1	NS	NS	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Naphthalene	91-20-3	17	400	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Nitrobenzene	98-95-3	NS	NS	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
N-Methyl-2-Pyrrolidone (NMP)	872-50-4	NS	NS	mg/kg	<0.720	NA	NA	<0.720	NA	NA	NA	NA	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720
N-Nitrosodimethylamine	62-75-9	NS	NS	mg/kg	<0.720	NA	NA	<0.720	NA	NA	NA	NA	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720
N-nitroso-di-n-propylamine	621-64-7	NS	NS	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Pentachlorophenol	87-86-5	4	20	mg/kg	<0.288	NA	NA	<0.288	NA	NA	NA	NA	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
Phenanthrene	85-01-8	NS	NS	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Phenol	108-95-2	350000	98000	mg/kg	<0.288	NA	NA	<0.288	NA	NA	NA	NA	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
Pyrene	129-00-0	23000	5000	mg/kg	<0.144	NA	NA	<0.144	NA	NA	NA	NA	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Pyridine	110-86-1	NS	NS	mg/kg	<0.720	NA	NA	<0.720	NA	NA	NA	NA	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720

ESL - Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, 2019 R
mg/kg - miligrams per kilogram
NS - no standard
NA - not analyzed



LEGEND

BORING LOCATIONS

SUBJECT PROPERTY

NOTES:
1. AERIAL IMAGERY PROVIDED BY NEARMAP. FLOWN ON 01/26/2023.
2. ALL LOCATIONS OF SUBJECT PROPERTY RECONNAISSANCE OBSERVATIONS ARE APPROXIMATE.

250 0 250
SCALE IN FEET

LANGAN

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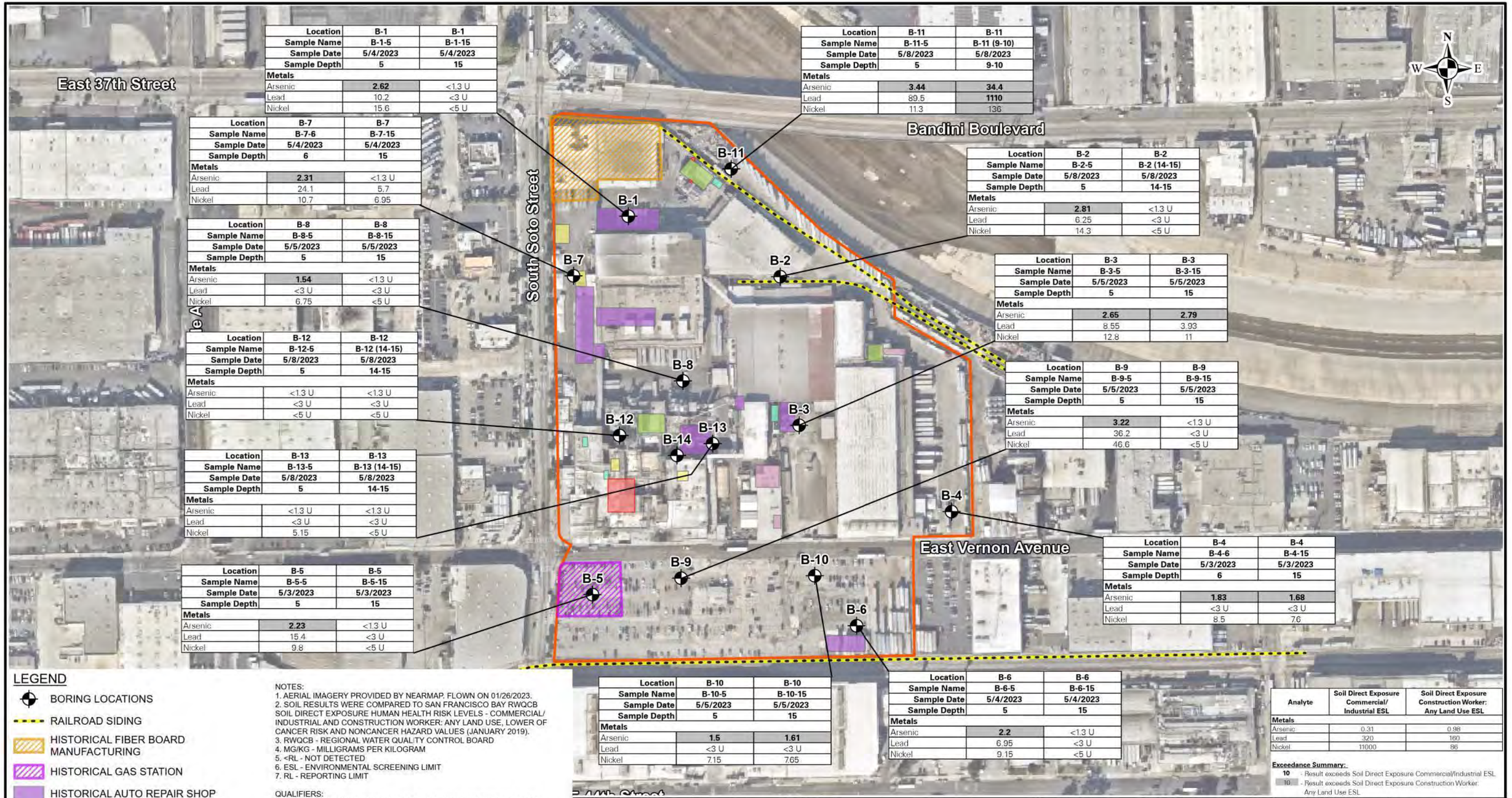
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Project	Figure Title	Project No.	Figure
3163 EAST VERNON AVE VERNON LOS ANGELES COUNTY CALIFORNIA	SITE PLAN - SOIL BORINGS	721040501	1
		Date: 5/30/2023	
		Scale: 1" = 250 feet	
		Drawn By: OG	

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Path: \\Langan.com\data\LAX\data5\721040501\Project Data\ArcGIS\APRX_APRX 721040501\721040501.aprx



Location	B-1	B-1
Sample Name	B-1-5	B-1-15
Sample Date	5/4/2023	5/4/2023
Sample Depth	5	15
Metals		
Arsenic	**2.62**	<1.3 U
Lead	10.2	<3 U
Nickel	15.6	<5 U

Location	B-11	B-11
Sample Name	B-11-5	B-11 (9-10)
Sample Date	5/8/2023	5/8/2023
Sample Depth	5	9-10
Metals		
Arsenic	**3.44**	**34.4**
Lead	89.5	**1110**
Nickel	11.3	136

Location	B-7	B-7
Sample Name	B-7-6	B-7-15
Sample Date	5/4/2023	5/4/2023
Sample Depth	6	15
Metals		
Arsenic	**2.31**	<1.3 U
Lead	24.1	5.7
Nickel	10.7	6.95

Location	B-2	B-2
Sample Name	B-2-5	B-2 (14-15)
Sample Date	5/8/2023	5/8/2023
Sample Depth	5	14-15
Metals		
Arsenic	**2.81**	<1.3 U
Lead	6.25	<3 U
Nickel	14.3	<5 U

Location	B-8	B-8
Sample Name	B-8-5	B-8-15
Sample Date	5/5/2023	5/5/2023
Sample Depth	5	15
Metals		
Arsenic	**1.54**	<1.3 U
Lead	<3 U	<3 U
Nickel	6.75	<5 U

Location	B-3	B-3
Sample Name	B-3-5	B-3-15
Sample Date	5/5/2023	5/5/2023
Sample Depth	5	15
Metals		
Arsenic	**2.65**	**2.79**
Lead	8.55	3.93
Nickel	12.8	11

Location	B-12	B-12
Sample Name	B-12-5	B-12 (14-15)
Sample Date	5/8/2023	5/8/2023
Sample Depth	5	14-15
Metals		
Arsenic	<1.3 U	<1.3 U
Lead	<3 U	<3 U
Nickel	<5 U	<5 U

Location	B-9	B-9
Sample Name	B-9-5	B-9-15
Sample Date	5/5/2023	5/5/2023
Sample Depth	5	15
Metals		
Arsenic	**3.22**	<1.3 U
Lead	36.2	<3 U
Nickel	46.6	<5 U

Location	B-13	B-13
Sample Name	B-13-5	B-13 (14-15)
Sample Date	5/8/2023	5/8/2023
Sample Depth	5	14-15
Metals		
Arsenic	<1.3 U	<1.3 U
Lead	<3 U	<3 U
Nickel	5.15	<5 U

Location	B-4	B-4
Sample Name	B-4-6	B-4-15
Sample Date	5/3/2023	5/3/2023
Sample Depth	6	15
Metals		
Arsenic	**1.83**	**1.68**
Lead	<3 U	<3 U
Nickel	8.5	7.6

Location	B-5	B-5
Sample Name	B-5-5	B-5-15
Sample Date	5/3/2023	5/3/2023
Sample Depth	5	15
Metals		
Arsenic	**2.23**	<1.3 U
Lead	15.4	<3 U
Nickel	9.8	<5 U

Location	B-10	B-10
Sample Name	B-10-5	B-10-15
Sample Date	5/5/2023	5/5/2023
Sample Depth	5	15
Metals		
Arsenic	**1.5**	**1.61**
Lead	<3 U	<3 U
Nickel	7.15	7.65

Location	B-6	B-6
Sample Name	B-6-5	B-6-15
Sample Date	5/4/2023	5/4/2023
Sample Depth	5	15
Metals		
Arsenic	**2.2**	<1.3 U
Lead	6.95	<3 U
Nickel	9.15	<5 U

LEGEND

- BORING LOCATIONS
- RAILROAD SIDING
- HISTORICAL FIBER BOARD MANUFACTURING
- HISTORICAL GAS STATION
- HISTORICAL AUTO REPAIR SHOP
- HISTORICAL SUBSTATION
- HISTORICAL UST
- ENGINE ROOM
- MAINTENANCE BUILDINGS
- HAZARDOUS WASTE STORAGE AREA
- SUBJECT PROPERTY

NOTES:
1. AERIAL IMAGERY PROVIDED BY NEARMAP. FLOWN ON 01/26/2023.
2. SOIL RESULTS WERE COMPARED TO SAN FRANCISCO BAY RWQCB SOIL DIRECT EXPOSURE HUMAN HEALTH RISK LEVELS - COMMERCIAL/ INDUSTRIAL AND CONSTRUCTION WORKER: ANY LAND USE, LOWER OF CANCER RISK AND NONCANCER HAZARD VALUES (JANUARY 2019).
3. RWQCB - REGIONAL WATER QUALITY CONTROL BOARD
4. MG/KG - MILLIGRAMS PER KILOGRAM
5. <RL - NOT DETECTED
6. ESL - ENVIRONMENTAL SCREENING LIMIT
7. RL - REPORTING LIMIT

QUALIFIERS:
U - THE ANALYTE WAS ANALYZED FOR, BUT WAS NOT DETECTED AT A LEVEL GREATER THAN OR EQUAL TO THE LEVEL OF THE RL OR THE SAMPLE CONCENTRATION FOR RESULTS IMPACTED BY BLANK CONTAMINATION.

250 0 250
SCALE IN FEET

Analyte	Soil Direct Exposure Commercial/ Industrial ESL	Soil Direct Exposure Construction Worker: Any Land Use ESL
Metals		
Arsenic	0.31	0.98
Lead	320	160
Nickel	11000	86

Exceedance Summary:
10 - Result exceeds Soil Direct Exposure Commercial/Industrial ESL
10 - Result exceeds Soil Direct Exposure Construction Worker: Any Land Use ESL

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Project
3163 EAST VERNON AVE
VERNON
LOS ANGELES COUNTY CALIFORNIA

Figure Title
SCREENING LIMIT EXCEEDANCES, SOIL

Project No. 721040501
Date 5/30/2023
Scale 1" = 250 feet
Drawn By AC
Figure 2

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Path: \\Langan.com\data\LAX\data5\721040501\Project Data\ArcGIS\APRX_APRX 721040501\721040501.aprx

Location	B1-SG	B1-SG
Sample Name	B1-SG-10	B1-SG-30
Sample Date	5/9/2023	5/8/2023
Sample Depth	10	30
VOCs		
Chloroform	<2.4 U	<4.9 U
Tetrachloroethene (PCE)	<3.4 U	8.2

Location	B11-SG
Sample Name	B11-SG-10
Sample Date	5/9/2023
Sample Depth	10
VOCs	
Chloroform	**63**
Tetrachloroethene (PCE)	<3.4 U

Location	B7-SG	B7-SG
Sample Name	B7-SG-10	B7-SG-30
Sample Date	5/8/2023	5/8/2023
Sample Depth	10	30
VOCs		
Chloroform	**120**	**380**
Tetrachloroethene (PCE)	31	**190**

Location	B8-SG	B8-SG
Sample Name	B8-SG-10	B8-SG-30
Sample Date	5/9/2023	5/9/2023
Sample Depth	10	30
VOCs		
Chloroform	4.9	**51**
Tetrachloroethene (PCE)	7.3	59

Location	B2-SG	B2-SG
Sample Name	B2-SG-10	B2-SG-30
Sample Date	5/9/2023	5/9/2023
Sample Depth	10	30
VOCs		
Chloroform	**28**	18
Tetrachloroethene (PCE)	**590**	**270**

Location	B12-SG	B12-SG
Sample Name	B12-SG-10	B12-SG-30
Sample Date	5/9/2023	5/9/2023
Sample Depth	10	30
VOCs		
Chloroform	**390**	**290**
Tetrachloroethene (PCE)	20	22

Location	B3-SG	B3-SG
Sample Name	B3-SG-10	B3-SG-30
Sample Date	5/9/2023	5/9/2023
Sample Depth	10	30
VOCs		
Chloroform	**38**	**130**
Tetrachloroethene (PCE)	52	**110**

Location	B13-SG	B13-SG
Sample Name	B13-SG-10	B13-SG-30
Sample Date	5/9/2023	5/9/2023
Sample Depth	10	30
VOCs		
Chloroform	**55**	**92**
Tetrachloroethene (PCE)	19	45

Location	B4-SG	B4-SG
Sample Name	B4-SG-10	B4-SG-30
Sample Date	5/9/2023	5/9/2023
Sample Depth	10	30
VOCs		
Chloroform	<2.4 U	**25**
Tetrachloroethene (PCE)	<3.4 U	20

Location	B5-SG	B5-SG	B5-SG
Sample Name	B5-SG-10	B5-SG-30	SG-DUP
Sample Date	5/9/2023	5/9/2023	5/9/2023
Sample Depth	10	30	30
VOCs			
Chloroform	**46**	**63 J**	**160 J**
Tetrachloroethene (PCE)	**230**	**200 J**	**500 J**

Location	B6-SG	B6-SG
Sample Name	B6-SG-10	B6-SG-30
Sample Date	5/9/2023	5/9/2023
Sample Depth	10	30
VOCs		
Chloroform	12	9.2
Tetrachloroethene (PCE)	<10 U	<10 U

Analyte	Subslab/Soil Gas VI Commercial/ Industrial ESL
VOCs	
Chloroform	18
Tetrachloroethene (PCE)	67

Exceedance Summary:

10 - Result exceeds Subslab/Soil Gas VI Commercial/Industrial ESL

East 37th Street

South Soto Street

Bandini Boulevard

East Vernon Avenue

B-1 B-2 B-3 B-4 B-5 B-6 B-7 B-8 B-9 B-10 B-11 B-12 B-13 B-14

N W E S

LEGEND

- BORING LOCATIONS
- RAILROAD SIDING
- HISTORICAL FIBER BOARD MANUFACTURING
- HISTORICAL GAS STATION
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- ENGINE ROOM
- MAINTENANCE BUILDINGS
- HAZARDOUS WASTE STORAGE AREA
- SUBJECT PROPERTY

NOTES:
1. AERIAL IMAGERY PROVIDED BY NEARMAP, FLOWN ON 01/26/2023.
2. SOIL RESULTS WERE COMPARED TO SAN FRANCISCO BAY RWQCB SOIL DIRECT EXPOSURE HUMAN HEALTH RISK LEVELS - COMMERCIAL/ INDUSTRIAL AND CONSTRUCTION WORKER: ANY LAND USE, LOWER OF CANCER RISK AND NONCANCER HAZARD VALUES (JANUARY 2019).
3. RWQCB - REGIONAL WATER QUALITY CONTROL BOARD
4. MG/KG - MILLIGRAMS PER KILOGRAM
5. <RL - NOT DETECTED
6. ESL - ENVIRONMENTAL SCREENING LIMIT
7. RL - REPORTING LIMIT

QUALIFIERS:
U - THE ANALYTE WAS ANALYZED FOR, BUT WAS NOT DETECTED AT A LEVEL GREATER THAN OR EQUAL TO THE LEVEL OF THE RL OR THE SAMPLE CONCENTRATION FOR RESULTS IMPACTED BY BLANK CONTAMINATION.

250 0 250
SCALE IN FEET

LANGAN

Langan Engineering and Environmental Services, Inc.

515 South Flower Street, Suite 2860
Los Angeles, CA 90071

T: 213.314.8100 F: 213.314.8101
www.langan.com

Project

3163 EAST VERNON AVE

VERNON

LOS ANGELES COUNTY CALIFORNIA

Figure Title

SOIL VAPOR SCREENING LIMIT EXCEEDANCES

Project No. 721040501	Figure 3
Date 5/30/2023	
Scale 1" = 250 feet	
Drawn By OG	

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Log of Boring **B-1** Sheet 1 of 2

Project: 3163 East Vernon Avenue	Project No.: 721040501
Location: 3163 East Vernon Avenue	Elevation and Datum: Approx. 206
Drilling Company: ABC Liovin	Date Started: 05/04/2023 — Date Finished: 05/04/2023
Drilling Equipment: CME-85 Truck Mounted Drill Rig	Completion Depth: 31.5 ft — Rock Depth: -
Size and Type of Bit: 6-inch O.D. Hollow Stem Auger	Number of Samples: Disturbed 3 — Undisturbed 3 — Core
Casing Diameter (in): - — Casing Depth (ft): -	Water Level (ft.): First - — Completion - — 24 HR. -
Casing Hammer: - — Weight (lbs): - — Drop (in): -	Drilling Foreman: Juan
Sampler: 2-inch O.D. Split-Barrel SPT, 2.5-inch I.D. Cal Mod	Field Engineer: B. Watkins
Sampler Hammer: Automatic — Weight (lbs): 140 — Drop (in): 30	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID (ppm)	Remarks
	+206.0		0						Hand auger from 0-5 feet. Bulk sample collected from 0-5 feet.
	+205.7	AC = 4-inch thick; No base.							
		Artificial Fill (af) Silty SAND (SM), brown, moist, fine sand, trace concrete and glass fragments. [FILL]	1						
	+203.5	**Quaternary Young Alluvium (Qya)** Silty SAND (SM) to Sandy SILT (ML), brown, loose to medium stiff, moist, fine sand.	2						
			3						
			4						
			5	S-1	SPT	18	2 2 3	0	
			6						
			7						
	+198.0	SAND (SW), light brown, medium dense, moist, fine to coarse sand, trace fine gravel.	8						
			9						
			10	S-2	CR	14	5 10 17	0	
			11						
			12						
	+193.0	SAND (SP), light brown, medium dense, moist, fine to medium sand.	13						
			14						
			15	S-3	SPT	18	5 11 13	1.2	
			16						
			17						
	+188.0	SAND with Silt (SP-SM), light brown, medium dense, moist, fine sand, trace fine gravel.	18						
			19						
			20						

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Log of Boring **B-1** Sheet 2 of 2

Project	Project No.
3163 East Vernon Avenue	721040501
Location	**Elevation and Datum**
3163 East Vernon Avenue	Approx. 206

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+186.0		20					0.2	
			21	S-4	CR	18	7 13 24		
			22						
			23						
			24						
		Fine to medium sand, no gravel.	25					0	
		Interbeds, brown, silty fine sand (SM) , 1 to 2 inches thick.	26	S-5	SPT	18	9 11 12		
			27						
	+178.0		28						
		CLAY with Sand (CL), brown, very stiff, moist, fine sand.	29						
			30					0	
			31	S-6	CR	18	5 6 23		
	+174.5		32						
		Total Depth = 31.5 feet Groundwater not encountered. Vapor probes installed at 10 and 27 feet.	33						
			34						
			35						
			36						
			37						
			38						
			39						
			40						
			41						
			42						
			43						
			44						
			45						

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Log of Boring **B-2** Sheet 1 of 1

Project: 3163 East Vernon Avenue	Project No.: 721040501
Location: 3163 East Vernon Avenue	Elevation and Datum: Approx. 206
Drilling Company: ABC Liovin	Date Started: 05/03/2023 — Date Finished: 05/03/2023
Drilling Equipment: CME-85 Truck Mounted Drill Rig	Completion Depth: 3 ft — Rock Depth: -
Size and Type of Bit: 6-inch O.D. Hollow Stem Auger	Number of Samples: Disturbed - / Undisturbed - / Core
Casing Diameter (in): - — Casing Depth (ft): -	Water Level (ft.): First ▽ - / Completion ▼ - / 24 HR. ▼ -
Casing Hammer: - — Weight (lbs): - — Drop (in): -	Drilling Foreman:
Sampler: 2-inch O.D. Split-Barrel SPT, 2.5-inch I.D. Cal Mod	Field Engineer: A. Nieblas
Sampler Hammer: Automatic — Weight (lbs): 140 — Drop (in): 30	

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in		Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+206.0		0						
	+205.5	AC = 4-inch thick; No base.							
		Artificial Fill (af) Silty SAND (SM) and Sandy SILT (ML), dark brown, moist, scattered gravel and pieces of broken clay pipe. [FILL]	1						
			2						
	+203.0		3						
		Total Depth = 3 feet Groundwater not encountered. Backfilled with soil cuttings. **Boring abandoned due to potentially buried utility.**	4						
			5						
			6						
			7						
			8						
			9						
			10						
			11						
			12						
			13						
			14						
			15						
			16						
			17						
			18						
			19						
			20						

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Log of Boring **B-3** Sheet 1 of 2

Project: 3163 East Vernon Avenue	Project No.: 721040501
Location: 3163 East Vernon Avenue	Elevation and Datum: Approx. 204
Drilling Company: ABC Liovin	Date Started: 05/05/2023 — Date Finished: 05/05/2023
Drilling Equipment: CME-85 Truck Mounted Drill Rig	Completion Depth: 31.5 ft — Rock Depth: -
Size and Type of Bit: 6-inch O.D. Hollow Stem Auger	Number of Samples: Disturbed 3 — Undisturbed 3 — Core
Casing Diameter (in): - — Casing Depth (ft): -	Water Level (ft.): First - — Completion - — 24 HR. -
Casing Hammer: - — Weight (lbs): - — Drop (in): -	Drilling Foreman: Juan
Sampler: 2-inch O.D. Split-Barrel SPT, 2.5-inch I.D. Cal Mod	Field Engineer: B. Watkins
Sampler Hammer: Automatic — Weight (lbs): 140 — Drop (in): 30	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID (ppm)	Remarks
	+204.0		0						Bulk sample collected from 0-5 feet.
	+203.6	PCC = 5-inch thick, No base.							
		Artificial Fill (af) SAND (SP), light brown, moist, fine to medium sand, trace fine to coarse gravel, trace silt. [FILL]	1						
			2						
			3						
	+200.0		4						
		Silty SAND (SM), brown, loose, moist, fine sand, some fine gravel, trace clay. [FILL]	5	S-1	CR	18	2 3 7	0	
	+197.5		6						
		Quaternary Young Alluvium (Qya) SAND (SP), light brown, medium dense, moist, fine to coarse sand, trace fine gravel.	7						
			8						
			9						
			10	S-2	SPT	18	3 7 9	0	
			11						
			12						
	+191.0		13						
		SAND with Silt (SP-SM), light brown, medium dense, moist, fine to medium sand.	14						
			15	S-3	CR	18	8 9 13	0	
			16						
			17						
	+186.0		18						
		SAND (SP), light brown, medium dense, moist, fine to medium sand.	19						
			20						

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Log of Boring **B-3** Sheet 2 of 2

Project	Project No.
3163 East Vernon Avenue	721040501
Location	**Elevation and Datum**
3163 East Vernon Avenue	Approx. 204

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+184.0		20					0.1	
			21	S-4	SPT	15	7 11 16		
			22						
	+181.0	SAND (SW), light brown, dense, moist, fine to coarse sand and gravel.	23						
			24						
			25					0	
			26	S-5	CR	18	13 21 28		
			27						
			28						
			29						
		Fine to medium sand, no gravel.	30					0.3	
	+173.5	Sandy CLAY (CL), brown, very stiff, moist, very fine to fine sand.	31	S-6A/6B	SPT	18	10 7 10		
	+172.5	Total Depth = 31.5 feet Groundwater not encountered. Vapor probes installed at 10 and 30 feet.	32						
			33						
			34						
			35						
			36						
			37						
			38						
			39						
			40						
			41						
			42						
			43						
			44						
			45						

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Log of Boring **B-4** Sheet 1 of 2

Project: 3163 East Vernon Avenue	Project No.: 721040501
Location: 3163 East Vernon Avenue	Elevation and Datum: Approx. 201
Drilling Company: ABC Liovin	Date Started: 05/03/2023 / Date Finished: 05/03/2023
Drilling Equipment: CME-85 Truck Mounted Drill Rig	Completion Depth: 31.5 ft / Rock Depth: -
Size and Type of Bit: 6-inch O.D. Hollow Stem Auger	Number of Samples: Disturbed 3 / Undisturbed 3 / Core
Casing Diameter (in): - / Casing Depth (ft): -	Water Level (ft.): First - / Completion - / 24 HR. -
Casing Hammer: - / Weight (lbs): - / Drop (in): -	Drilling Foreman:
Sampler: 2-inch O.D. Split-Barrel SPT, 2.5-inch I.D. Cal Mod	Field Engineer: A. Nieblas
Sampler Hammer: Automatic / Weight (lbs): 140 / Drop (in): 30	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	201.0	PCC = 7-inch thick, Base = 12-inch thick.	0						Hand auger from 0-6 feet.
	199.4	**Artificial Fill (af)** Silty SAND (SM), light brown, slightly moist. [FILL]	2						
	198.5	**Quaternary Young Alluvium (Qya)** Silty SAND (SM), light brown, slightly moist.	3						
		Grayish brown, loose, fine sand, micaceous.	5 6	S-1	SPT	18	2 3 4	0.3	
	193.0	SAND with Silt (SW-SM), light brown, dense, slightly moist, fine to coarse sand.	8						
			10 11	S-2	CR	18	7 18 27	0.1	
	188.0	SAND with Some Silt (SP-SM), light brown, medium dense, slightly moist, medium to coarse sand.	13						
			15 16	S-3	SPT	18	7 12 13	0.1	
			20						

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Log of Boring **B-4** Sheet 2 of 2

Project	Project No.
3163 East Vernon Avenue	721040501
Location	**Elevation and Datum**
3163 East Vernon Avenue	Approx. 201

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+181.0	Dense, medium sand.	20	S-4	CR	18	6 18 31	0	
	+178.0	SAND with Silt (SP-SM), light brown, dense, slightly moist, medium sand, some fine and coarse sand.	25	S-5	SPT	18	10 20 24	0.4	
		Very moist, fine to coarse sand.	30	S-6	CR	18	21 38 22	0	
	+169.5	Total Depth = 31.5 feet Groundwater not encountered. Vapor probes installed at 10 and 30 feet.	45						

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Log of Boring **B-5** Sheet 1 of 2

Project: 3163 East Vernon Avenue	Project No.: 721040501
Location: 3163 East Vernon Avenue	Elevation and Datum: Approx. 204
Drilling Company: ABC Liovin	Date Started: 05/03/2023 / Date Finished: 05/03/2023
Drilling Equipment: CME-85 Truck Mounted Drill Rig	Completion Depth: 31.5 ft / Rock Depth: -
Size and Type of Bit: 6-inch O.D. Hollow Stem Auger	Number of Samples: Disturbed 3 / Undisturbed 3 / Core
Casing Diameter (in): - / Casing Depth (ft): -	Water Level (ft.): First - / Completion - / 24 HR. -
Casing Hammer: - / Weight (lbs): - / Drop (in): -	Drilling Foreman:
Sampler: 2-inch O.D. Split-Barrel SPT, 2.5-inch I.D. Cal Mod	Field Engineer: A. Nieblas
Sampler Hammer: Automatic / Weight (lbs): 140 / Drop (in): 30	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+204.0		0						Hand auger from 0-5 feet.
	+203.6	AC = 3-inch thick, Base = 2-inch thick.	1						
		Artificial Fill (af) Silty SAND (SM), brownish gray, very loose, slightly moist, fine sand. [FILL]	2						
	+202.0	**Quaternary Young Alluvium (Qya)** Silty SAND (SM), brownish gray, very loose, slightly moist, fine sand.	3						
			4						
			5	S-1	SPT	18	2 2 1	0	
			6						
			7						
	+196.0	SAND with Silt (SW-SM), light brown, medium dense, slightly moist to moist, fine to coarse sand, occasional pebbles.	8						
			9						
			10	S-2	CR	18	4 8 15	0	
			11						
			12						
			13						
			14						
		Light brown, very moist, some iron oxide/limonite staining, poor subhorizontal bedding, no pebbles.	15					0	
			16	S-3	SPT	18	5 9 13		
			17						
			18						
			19						
			20						

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Log of Boring **B-5** Sheet 2 of 2

Project	Project No.
3163 East Vernon Avenue	721040501
Location	**Elevation and Datum**
3163 East Vernon Avenue	Approx. 204

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+184.0	Slightly moist, medium sand, no iron oxide/limonite staining.	20	S-4	CR	18	8 14 21	0	
			21						
			22						
			23						
			24						
		Occasional fine pebbles.	25	S-5	SPT	18	8 14 15	0	
			26						
			27						
	+176.0	Gravelly SAND with Silt (SP-SM), light brown, very dense, moist, subrounded to subangular fine to medium gravel, iron oxide/limonite staining.	28						
			29						
			30	S-6	CR	17	11 31 50/5"	0	
	+172.5		31						
		Total Depth = 31.5 feet Groundwater not encountered. Vapor probes installed at 10 and 30 feet.	32						
			33						
			34						
			35						
			36						
			37						
			38						
			39						
			40						
			41						
			42						
			43						
			44						
			45						

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Log of Boring **B-6** Sheet 1 of 2

Project: 3163 East Vernon Avenue	Project No.: 721040501
Location: 3163 East Vernon Avenue	Elevation and Datum: Approx. 202
Drilling Company: ABC Liovin	Date Started: 05/04/2023 / Date Finished: 05/04/2023
Drilling Equipment: CME-85 Truck Mounted Drill Rig	Completion Depth: 31.5 ft / Rock Depth: -
Size and Type of Bit: 6-inch O.D. Hollow Stem Auger	Number of Samples: Disturbed 3 / Undisturbed 3 / Core
Casing Diameter (in): - / Casing Depth (ft): -	Water Level (ft.): First - / Completion - / 24 HR. -
Casing Hammer: - / Weight (lbs): - / Drop (in): -	Drilling Foreman: Juan
Sampler: 2-inch O.D. Split-Barrel SPT, 2.5-inch I.D. Cal Mod	Field Engineer: B. Watkins
Sampler Hammer: Automatic / Weight (lbs): 140 / Drop (in): 30	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	202.0	AC = 5-inch thick, Base = 12-inch thick.	0						Hand auger from 0-5 feet. Bulk sample collected from 0-5 feet.
	200.5	**Artificial Fill (af)** Silty SAND (SM), brown, moist, fine sand, trace fine gravel. [FILL]	1						
	199.5	**Quaternary Young Alluvium (Qya)** SAND with Silt (SP-SM), brown, loose, moist, fine sand, trace fine gravel.	2						
			3						
			4						
			5	S-1	CR	18	4 5 5	0	
			6						
			7						
			8						
			9						
		Medium dense.	10	S-2	SPT	18	3 8 10	0.1	
			11						
			12						
			13						
			14						
		Light brown, fine to coarse sand.	15	S-3	CR	18	2 8 11	0.1	
			16						
			17						
	184.0	SAND (SP), light brown, medium dense, moist, fine to medium sand, trace fine gravel.	18						
			19						
			20						

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Log of Boring **B-6** Sheet 2 of 2

Project	Project No.
3163 East Vernon Avenue	721040501
Location	**Elevation and Datum**
3163 East Vernon Avenue	Approx. 202

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+182.0		20	S-4	SPT	18	7 12 15	0	
	+179.0	SAND (SW), light brown, dense, moist, fine to coarse sand, trace fine gravel.	23						
			25	S-5	CR	18	8 13 20	0	
	+174.0	SAND (SP), light brown, medium dense, moist, fine to medium sand, trace fine gravel.	28						
			30	S-6	SPT	18	8 14 19	0	
	+170.5	Total Depth = 31.5 feet Groundwater not encountered. Vapor probes installed at 10 and 30 feet.	32						
			45						

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Log of Boring **B-7** Sheet 1 of 2

Project: 3163 East Vernon Avenue	Project No.: 721040501
Location: 3163 East Vernon Avenue	Elevation and Datum: Approx. 206
Drilling Company: ABC Liovin	Date Started: 05/04/2023 / Date Finished: 05/04/2023
Drilling Equipment: CME-85 Truck Mounted Drill Rig	Completion Depth: 36.5 ft / Rock Depth: -
Size and Type of Bit: 6-inch O.D. Hollow Stem Auger	Number of Samples: Disturbed 3, Undisturbed 4, Core
Casing Diameter (in): - / Casing Depth (ft): -	Water Level (ft.): First - , Completion - , 24 HR. -
Casing Hammer: - / Weight (lbs): - / Drop (in): -	Drilling Foreman: Juan
Sampler: 2-inch O.D. Split-Barrel SPT, 2.5-inch I.D. Cal Mod	Field Engineer: B. Watkins
Sampler Hammer: Automatic / Weight (lbs): 140 / Drop (in): 30	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+206.0	AC = 6-inch thick, No base.	0						Hand auger from 0-6 feet.
	+205.5	**Artificial Fill (af)** Silty SAND (SM), light brown, moist, fine sand. [FILL]	1						
	+203.5	**Quaternary Young Alluvium (Qya)** Silty SAND (SM), light brown, loose, moist, fine sand.	2						
			3						
			4						
			5						
			6	S-1	CR	18	2 3 8	0	
			7						
	+197.5		8						
		SAND (SP), light brown, medium dense, moist, fine sand.	9						
			10	S-2	SPT	18	3 6 11	0	
			11						
			12						
	+193.0		13						
		SAND (SW), light brown, dense, moist, fine to coarse sand, trace fine gravel.	14						
			15	S-3	CR	16	12 25 36	0	Poor sample recovery; Bag sample taken.
			16						
			17						
			18						
			19						
			20						

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Log of Boring **B-7** Sheet 2 of 2

Project	Project No.
3163 East Vernon Avenue	721040501
Location	**Elevation and Datum**
3163 East Vernon Avenue	Approx. 206

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+186.0		20	S-4	SPT	16	9 19 25	0.5	
			21						
			22						
			23						
			24						
			25	S-5	CR	18	21 33 40	0.3	
			26						
			27						
	+178.0	Clayey SAND (SC), brown, dense, moist, fine sand.	28						
			29						
			30	S-6	SPT	18	8 20 20	0	High fines content.
			31						
			32						
	+173.0	Silty SAND (SM) to Sandy SILT (ML), brown, dense to very stiff, moist, very fine to fine sand, trace iron oxide staining.	33						
			34						
			35	S-7	CR	18	13 19 26	0	
	+169.5		36						
		Total Depth = 36.5 feet Groundwater not encountered. Vapor probes installed at 10 and 28.5 feet.	37						
			38						
			39						
			40						
			41						
			42						
			43						
			44						
			45						

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Log of Boring **B-8** Sheet 1 of 2

Project: 3163 East Vernon Avenue	Project No.: 721040501
Location: 3163 East Vernon Avenue	Elevation and Datum: Approx. 204
Drilling Company: ABC Liovin	Date Started: 05/05/2023 — Date Finished: 05/05/2023
Drilling Equipment: CME-85 Truck Mounted Drill Rig	Completion Depth: 36.5 ft — Rock Depth: -
Size and Type of Bit: 6-inch O.D. Hollow Stem Auger	Number of Samples: Disturbed 4 — Undisturbed 3 — Core
Casing Diameter (in): - — Casing Depth (ft): -	Water Level (ft.): First - — Completion - — 24 HR. -
Casing Hammer: - — Weight (lbs): - — Drop (in): -	Drilling Foreman: Juan
Sampler: 2-inch O.D. Split-Barrel SPT, 2.5-inch I.D. Cal Mod	Field Engineer: B. Watkins
Sampler Hammer: Automatic — Weight (lbs): 140 — Drop (in): 30	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID (ppm)	Remarks
	+204.0	AC = 4-inch thick, PCC = 3-inch thick.	0						Hand auger from 0-5 feet. Bulk sample collected from 0-5 feet.
	+203.4	**Artificial Fill (af)** SAND with Silt (SP-SM), brown, moist, fine to medium sand, trace fine gravel. [FILL]	1						
			2						
	+201.0	**Quaternary Young Alluvium (Qya)** SAND (SP), light brown, medium dense, moist, fine sand, trace silt.	3						
			4						
			5	S-1	SPT	18	5 5 8	0.7	
			6						
			7						
			8						
			9						
		Fine to medium sand, no silt.	10	S-2	CR	18	4 8 9	0	
			11						
			12						
			13						
			14						
		Trace fine gravel.	15	S-3	SPT	18	7 12 12	1.9	
			16						
			17						
			18						
			19						
			20						

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Log of Boring **B-8** Sheet 2 of 2

Project	Project No.
3163 East Vernon Avenue	721040501
Location	**Elevation and Datum**
3163 East Vernon Avenue	Approx. 204

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+184.0	Dense.	20	S-4	CR	18	10 19 33	0	
			21						
			22						
			23						
			24						
		Medium dense, fine to coarse sand, no gravel.	25	S-5	SPT	18	9 12 17	2.4	
			26						
			27						
			28						
			29						
		Fine to medium sand.	30	S-6	CR	15	4 11 11	0.1	
	+172.8		31						
		Sandy CLAY (CL), brown, very stiff, moist, very fine to fine sand.	32						
			33						
			34						
		Very fine to medium sand, trace fine gravel.	35	S-7	SPT	18	3 5 10	1.1	
	+167.5		36						
		Total Depth = 36.5 feet Groundwater not encountered. Vapor probes installed at 10 and 30 feet.	37						
			38						
			39						
			40						
			41						
			42						
			43						
			44						
			45						

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Log of Boring **B-9** Sheet 1 of 2

Project: 3163 East Vernon Avenue	Project No.: 721040501
Location: 3163 East Vernon Avenue	Elevation and Datum: Approx. 204
Drilling Company: ABC Liovin	Date Started: 05/05/2023 / Date Finished: 05/05/2023
Drilling Equipment: CME-85 Truck Mounted Drill Rig	Completion Depth: 36.5 ft / Rock Depth: -
Size and Type of Bit: 6-inch O.D. Hollow Stem Auger	Number of Samples: Disturbed 3, Undisturbed 4, Core
Casing Diameter (in): - / Casing Depth (ft): -	Water Level (ft.): First - / Completion - / 24 HR. -
Casing Hammer: - / Weight (lbs): - / Drop (in): -	Drilling Foreman: Juan
Sampler: 2-inch O.D. Split-Barrel SPT, 2.5-inch I.D. Cal Mod	Field Engineer: B. Watkins
Sampler Hammer: Automatic / Weight (lbs): 140 / Drop (in): 30	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID (ppm)	Remarks
	+204.0		0						Hand auger from 0-5 feet. Bulk sample collected from 0-5 feet.
	+203.7	AC = 2-inch thick, Base = 2-inch thick.							
		Artificial Fill (af) SAND (SP), brown, moist, fine sand, trace silt. [FILL]	1						
	+202.0	**Quaternary Young Alluvium (Qya)** SAND (SP), brown, moist, fine sand, trace silt.	2						
			3						
			4						
		Loose.	5	S-1	CR	14	2 2 4	0	
			6						
			7						
			8						
			9						
		Medium dense.	10	S-2	SPT	15	4 5 7	0.7	
			11						
	+191.5		12						
		SAND (SW), light brown, medium dense, moist, fine to coarse sand, trace fine gravel.	13						
			14						
			15	S-3	CR	16	11 18 23	0.5	
			16						
			17						
			18						
			19						
			20						

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Log of Boring **B-9** Sheet 2 of 2

Project	Project No.
3163 East Vernon Avenue	721040501
Location	**Elevation and Datum**
3163 East Vernon Avenue	Approx. 204

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+184.0	Dense, fine to medium sand.	20	S-4	SPT	18	6 13 17	0.4	
			21						
			22						
			23						
			24						
		Fine to coarse sand.	25	S-5	CR	16	11 17 30	0	
			26						
			27						
			28						
			29						
		Fine to medium sand.	30	S-6	SPT	18	8 17 17	1.1	
			31						
			32						
			33						
			34						
		Increased moisture.	35	S-7	CR	18	13 17 23	0.1	
	+168.0		36						
	+167.5	Silty SAND (SM), brown, dense, moist, fine sand.							
		Total Depth = 36.5 feet Groundwater not encountered. Boring backfilled with bentonite cement grout and topped with soil cutting and asphalt patched.	37						
			38						
			39						
			40						
			41						
			42						
			43						
			44						
			45						

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Log of Boring **B-10** Sheet 1 of 2

Project: 3163 East Vernon Avenue	Project No.: 721040501
Location: 3163 East Vernon Avenue	Elevation and Datum: Approx. 203
Drilling Company: ABC Liovin	Date Started: 05/05/2023 — Date Finished: 05/05/2023
Drilling Equipment: CME-85 Truck Mounted Drill Rig	Completion Depth: 36.5 ft — Rock Depth: -
Size and Type of Bit: 6-inch O.D. Hollow Stem Auger	Number of Samples: Disturbed 4 — Undisturbed 3 — Core
Casing Diameter (in): - — Casing Depth (ft): -	Water Level (ft.): First - — Completion - — 24 HR. -
Casing Hammer: - — Weight (lbs): - — Drop (in): -	Drilling Foreman: Juan
Sampler: 2-inch O.D. Split-Barrel SPT, 2.5-inch I.D. Cal Mod	Field Engineer: B. Watkins
Sampler Hammer: Automatic — Weight (lbs): 140 — Drop (in): 30	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+203.0		0						Hand auger from 0-5 feet.
	+202.6	AC = 3-inch thick, Base = 2-inch thick.							
		Artificial Fill (af) SAND (SP), brown, moist, fine sand, trace silt. [FILL]	1						
	+201.0		2						
		Quaternary Young Alluvium (Qya) SAND (SP), brown, loose, moist, fine sand, trace silt.	3						
			4						
			5	S-1	SPT	18	1 1 3	1.1	
			6						
			7						
			8						
			9						
		Light brown, medium dense, fine to medium sand, trace fine gravel.	10	S-2	CR	18	9 15 17	1.4	
			11						
			12						
			13						
			14						
		No gravel.	15	S-3	SPT	18	4 8 11	2.5	
			16						
			17						
	+185.0		18						
		SAND with Silt (SP-SM), light brown, dense, moist, fine to coarse sand, trace fine gravel.	19						
			20						

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Log of Boring **B-10** Sheet 2 of 2

Project	Project No.
3163 East Vernon Avenue	721040501
Location	**Elevation and Datum**
3163 East Vernon Avenue	Approx. 203

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	183.0		20	S-4	CR	18	9 23 40	0	
	180.0	Silty SAND (SM), brown, medium dense, moist, fine sand.	23						
	177.0	SAND (SP), light brown, medium dense, moist, fine to medium sand.	25	S-5A/5B	SPT	18	5 10 17	2.4	
	174.5	SAND with Silt (SP-SM), brown, medium dense, moist, fine sand.	28						
	170.0	Sandy CLAY (CL), brown, stiff, moist, very fine to fine sand.	30	S-6	CR	16	5 17 24	0	
	166.5	Total Depth = 36.5 feet Groundwater not encountered. Boring backfilled with bentonite cement grout and topped with soil cuttings and asphalt patched.	35	S-7	SPT	18	4 6 7	0.7	
			45						

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Log of Boring **FP-1** Sheet 1 of 3

Project: 3163 East Vernon Avenue	Project No.: 721040501
Location: 3163 East Vernon Avenue	Elevation and Datum: Approx. 202
Drilling Company: 2R Drilling	Date Started: 05/05/2023 / Date Finished: 05/05/2023
Drilling Equipment: CME-75 Truck Mounted Drill Rig	Completion Depth: 65.8 ft / Rock Depth: -
Size and Type of Bit: 8-inch O.D. Hollow Stem Auger	Number of Samples: Disturbed / Undisturbed: 13 / Core
Casing Diameter (in): - / Casing Depth (ft): -	Water Level (ft.): First ▽ - / Completion ▼ - / 24 HR. ▼ -
Casing Hammer: - / Weight (lbs): - / Drop (in): -	Drilling Foreman:
Sampler: 2.5-inch I.D. Cal Mod	Field Engineer: S. Wilkins
Sampler Hammer: Automatic / Weight (lbs): 140 / Drop (in): 30	

MATERIAL SYMBOL	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+202.0		0						
	+201.8	AC = 0.25-inch thick.							Bulk sample collected from 0-5 feet.
		Artificial Fill (af) Silty SAND (SM), grayish brown, slightly moist, fine to medium sand. [FILL]	1						
		Brown, moist, some fine to coarse gravel, few mortar fragments.	2						
			3						
	+198.0		4						
		Quaternary Young Alluvium (Qya) SAND with Silt (SP-SM), grayish brown, medium dense, moist, fine to medium sand.							
	+196.5		5						
		SAND (SP), light yellowish to grayish brown, medium dense, slightly moist, fine to medium sand, some fine gravel.	6	S-1	CR	18	6 8 10		
			7						
			8						
			9						
		Fine sand, increased fines content.	10	S-2	CR	18	5 14 9		
			11						
			12						
			13						
			14						
		Fine to medium sand, fine gravel.	15	S-3	CR	18	7 21 23		
			16						
			17						
			18						
			19						
			20						

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Log of Boring **FP-1** Sheet 2 of 3

Project	Project No.
3163 East Vernon Avenue	721040501
Location	**Elevation and Datum**
3163 East Vernon Avenue	Approx. 202

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+182.0		20						
	+181.0	SAND with Silt (SP-SM), light gray, dense, fine sand.	21	S-4	CR	18	9 25 26		
			22						
			23						
			24						
	+177.0	SAND (SP), light yellowish to grayish brown, dense, slightly moist, fine to coarse sand, some fine to coarse gravel.	25	S-5	CR	18	18 25 40		
			26						
			27						
	+174.0	CLAY (CL), dark yellowish brown and black mottled, very stiff, moist to very moist, few fine sand, some silt.	28						
			29						
			30	S-6	CR	18	7 13 22		
			31						
			32						
			33						
	+168.0	Sandy CLAY (CL), yellowish brown, stiff, moist, fine sand.	34						
			35	S-7	CR	18	7 19 18		
			36						
			37						
			38						
			39						
		Increased sand content.	40						
	+161.0		41	S-8	CR	18	9 25 43		
	+160.5	Clayey SAND (SC), olive gray, dense, moist, fine to medium sand.							
		SAND with Silt (SP-SM), yellow, dense, moist, fine sand.	42						
			43						
			44						
			45						

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Log of Boring **FP-1** Sheet 3 of 3

Project	Project No.
3163 East Vernon Avenue	721040501
Location	**Elevation and Datum**
3163 East Vernon Avenue	Approx. 202

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+157.0	Very dense, fine to medium sand.	45	S-9	CR	12	22 50		
			46						
			47						
			48						
			49						
	+152.0	Gravelly SAND (SP-GP), light yellow, very dense, slightly moist, fine to coarse sand and gravel.	50	S-10	CR	12	25 50/5"		
			51						
			52						
			53						
			54						
		Fine to medium sand, decreased gravel content.	55	S-11	CR	10	40 50/4"		
			56						
			57						
			58						
			59						
			60	S-12	CR	10	20 50/4"		
	+140.0		61						
		SAND with Silt (SP-SM), off-white, very dense, slightly moist, fine to medium sand, few coarse sand, fine gravel.	62						
			63						
			64						
			65	S-13	CR	10	27 50/4"		
	+136.2		66						
		Total Depth = 65.8 feet Groundwater not encountered. Boring converted to a percolation test well. Boring backfilled with bentonite cement grout and topped with soil cuttings and asphalt patched after percolation test.	67						
			68						
			69						
			70						

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Log of Boring **FP-2** Sheet 1 of 3

Project: 3163 East Vernon Avenue	Project No.: 721040501
Location: 3163 East Vernon Avenue	Elevation and Datum: Approx. 204
Drilling Company: 2R Drilling	Date Started: 05/05/2023 / Date Finished: 05/05/2023
Drilling Equipment: CME-75 Truck Mounted Drill Rig	Completion Depth: 51.5 ft / Rock Depth: -
Size and Type of Bit: 8-inch O.D. Hollow Stem Auger	Number of Samples: Disturbed / Undisturbed: 10 / Core
Casing Diameter (in): - / Casing Depth (ft): -	Water Level (ft.): First ▽ - / Completion ▼ - / 24 HR. ▼ -
Casing Hammer: - / Weight (lbs): - / Drop (in): -	Drilling Foreman:
Sampler: 2.5-inch I.D. Cal Mod	Field Engineer: S. Wilkins
Sampler Hammer: Automatic / Weight (lbs): 140 / Drop (in): 30	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+204.0	AC = 2.5-inch thick, Base = 4-inch thick.	0						
	+203.5	**Artificial Fill (af)** Sandy CLAY (CL), dark gray, moist, fine to coarse sand, few asphalt fragments. [FILL]	1						
	+202.5	**Quaternary Young Alluvium (Qya)** Silty SAND (SM), dark olive gray, loose, moist, very fine to fine sand, slightly micaceous.	2						
			3						
			4						
			5	S-1	CR	18	5 5 5		
			6						
			7						
			8						
	+195.0	SAND with Silt (SP-SM), off-white to gray, medium dense, moist, fine to medium sand, some fine to coarse gravel.	9						
			10	S-2	CR	18	5 9 12		
			11						
			12						
			13						
			14						
		Off-white to light yellow, no gravel.	15	S-3	CR	18	9 14 16		
			16						
			17						
			18						
			19						
			20						

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Log of Boring **FP-2** Sheet 2 of 3

Project	Project No.
3163 East Vernon Avenue	721040501
Location	**Elevation and Datum**
3163 East Vernon Avenue	Approx. 204

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	+184.0	Dense, few fine to coarse gravel.	20	S-4	CR	18	5 19 35		
	+179.0	Silty SAND (SM), gray to olive brown, medium dense, moist, fine to coarse sand, few fine gravel, increasing clay with depth.	25	S-5	CR	18	5 9 11		
	+176.0	SAND with Silt (SP-SM), gray, dense, slightly moist, fine sand.	28	S-6	CR	18	11 28 37		
	+168.5	Wet.	35	S-7	CR	18	8 12 17		Perched groundwater encountered at 35 feet.
	+168.0	Silty SAND (SM), gray, medium dense, wet, very fine to fine sand.							
		Sandy SILT (ML), olive brown, very stiff, wet, very fine sand, micaceous.	37						
	+165.0	CLAY (CL), reddish brown, stiff, very moist, fine sand, some silt.	39	S-8	CR	18	3 7 10		
	+161.0	Sandy CLAY (CL), reddish brown, stiff, very moist, fine sand.	43						
			45						

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Log of Boring **FP-2** Sheet 3 of 3

Project	Project No.
3163 East Vernon Avenue	721040501
Location	**Elevation and Datum**
3163 East Vernon Avenue	Approx. 204

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
	159.0		45						
	158.0	Clayey SAND (SC), reddish brown, very dense, very moist, fine sand.	46	S-9	CR	17	21 36 50/5"		
	156.0	SAND with Silt (SP-SM), yellow to off-white and black mottled, very dense, moist, fine to medium sand.	47 48 49 50						
	152.5	Total Depth = 51.5 feet Groundwater not encountered. Boring converted to a percolation test well. Boring backfilled with bentonite cement grout and topped with soil cuttings and asphalt patched after percolation test.	51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70	S-10	CR	17	7 37 50/5"		

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SUMMA CANISTER SAMPLING FIELD DATA SHEET

Site:	3163 East Vernon Avnue
Samplers:	M. Che
Date:	5/9/2023

Sample Type	SVP	SVP	SVP	SVP	--
Sample #	B13-SG-10	B13-SG-30	B3-SG-30	B3-SG-10	--
Location	B-13	B-13	B-3	B-3	--
Summa Canister ID	5431	R3559	R3599	N1438	--
Flow Controller ID	DE41	DE9	DE-17	DE-19	--
Successful Shut-In Test?	YES	YES	YES	YES	--
Total Purge Time (min)	11	12	134	135	--
Purge Volume	--	--	--	--	--
Initial Tracer Gas Results in sampling line	0	0	0	0	--
Minimum Tracer Gas Results in shroud	--	--	--	--	--
Maximum Tracer Gas Results in shroud	--	--	--	--	--
Successful Leak Test?	YES	YES	YES	YES	--
Pressure Gauge - before sampling ("Hg)	-26	-26	-27	-27	--
Sample Time (Start)	1358	1351	1704	1703	--
Sample Time (Stop)	1404	1357	1711	1709	--
Total Sample Time (min)	6	6	6	6	--
Pressure Gauge - after sampling ("Hg)	-5	-6	-5	-4	--
Sample Volume (Summa)	--	--	--	--	--
Canister Pressure Went to Ambient Pressure?	NO	NO	NO	NO	--
Duplicate Sample Collected?	NO	NO	NO	NO	--
Duplicate Sample Name/Summa	--	--	--	--	--
PID Reading	0	0	0	0	--
General Comments	Added all to COC				

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SUMMA CANISTER SAMPLING FIELD DATA SHEET

Site:	3163 East Vernon Avnue
Samplers:	M. Chambers
Date:	5/8/2023

Sample Type	SVP	SVP	SVP	SVP	--
Sample #	B1-SG-10	B1-SG-30	B7-SG-10	B7-SG-30	--
Location	B-1	B-1	B-7	B-7	--
Summa Canister ID	6112	A-7566	A-12197	6333	--
Flow Controller ID	DE-39	DE-58	DE-66	DE-45	--
Successful Shut-In Test?	YES	YES	YES	YES	--
Total Purge Time (min)	134	135	134	135	--
Purge Volume	--	--	--	--	--
Initial Tracer Gas Results in sampling line	0	0	0	0	--
Minimum Tracer Gas Results in shroud	--	--	--	--	--
Maximum Tracer Gas Results in shroud	--	--	--	--	--
Successful Leak Test?	YES	YES	YES	YES	--
Pressure Gauge - before sampling ("Hg)	-29	-29	-28	-28	--
Sample Time (Start)	1024	1306	1516	1524	--
Sample Time (Stop)	1031	1311	1522	1529	--
Total Sample Time (min)	7	6	6	5	--
Pressure Gauge - after sampling ("Hg)	-5	-6	-5	-5	--
Sample Volume (Summa)	--	--	--	--	--
Canister Pressure Went to Ambient Pressure?	NO	NO	NO	NO	--
Duplicate Sample Collected?	NO	NO	NO	NO	--
Duplicate Sample Name/Summa	--	--	--	--	--
PID Reading	0	0	0	0	--
General Comments	No PID on 5/8 and only one GilAir pump until approximately 12pm.				

LANGAN

SUMMA CANISTER SAMPLING FIELD DATA SHEET

Site:	3163 East Vernon Avnue
Samplers:	M. Chambers
Date:	5/9/2023

Sample Type	SVP	SVP	SVP	SVP	--
Sample #	B4-SG-10	B4-SG-30	B6-SG-10	B6-SG-30	--
Location	B-4	B-4	B-6	B-6	--
Summa Canister ID	A11715	R3585	DE-98	DE-72	--
Flow Controller ID	DE-44	DE-22	6336	R3560	--
Successful Shut-In Test?	YES	YES	YES	YES	--
Total Purge Time (min)	134	135	134	135	--
Purge Volume	--	--	--	--	--
Initial Tracer Gas Results in sampling line	0	0	850	1100	--
Minimum Tracer Gas Results in shroud	--	--	23.20%	23.20%	--
Maximum Tracer Gas Results in shroud	--	--	--	--	--
Successful Leak Test?	YES	YES	YES	YES	--
Pressure Gauge - before sampling ("Hg)	-28	-28	-26	-25	--
Sample Time (Start)	1010	1019	1320	1326	--
Sample Time (Stop)	1017	1025	1326	1332	--
Total Sample Time (min)	7	6	6	6	--
Pressure Gauge - after sampling ("Hg)	-5	-5	-5	-5	--
Sample Volume (Summa)	--	--	--	--	--
Canister Pressure Went to Ambient Pressure?	NO	NO	NO	NO	--
Duplicate Sample Collected?	NO	NO	NO	NO	--
Duplicate Sample Name/Summa	--	--	--	--	--
PID Reading	0	0	0.2	0.1	--
General Comments	One pump died in the field buyt connected to inverter to charge at approximately 12. Added all to COC				

LANGAN

SUMMA CANISTER SAMPLING FIELD DATA SHEET

Site:	3163 East Vernon Avnue
Samplers:	M. Che
Date:	5/9/2023

Sample Type	SVP	SVP	SVP	SVP	--
Sample #	B2-SG-10	B2-SG-30	B5-SG-10	B5-SG-30	B11-SG-10
Location	B-2	B-2	B-5	B-5	B-11
Summa Canister ID	N1442	6113	8392	R3580	A12212
Flow Controller ID	DE-35	DE-87	DE78	DE70	NO ID
Successful Shut-In Test?	YES	YES	YES	YES	YES
Total Purge Time (min)	11	12	11	12	11
Purge Volume	--	--	--	--	--
Initial Tracer Gas Results in sampling line	--	--	--	--	--
Minimum Tracer Gas Results in shroud	--	--	--	--	--
Maximum Tracer Gas Results in shroud	16.90%	16.90%	10.90%	10.90%	10.10%
Successful Leak Test?	YES	YES	YES	YES	YES
Pressure Gauge - before sampling ("Hg)	-27	-30	-30	-28	-28
Sample Time (Start)	0908	0908	1215	1212	1252
Sample Time (Stop)	0915	0917	1221	1218	1259
Total Sample Time (min)	7	9	6	6	7
Pressure Gauge - after sampling ("Hg)	-4	-4	-4	-4	-4
Sample Volume (Summa)	12	12	12	12	12
Canister Pressure Went to Ambient Pressure?	NO	NO	NO	NO	NO
Duplicate Sample Collected?	NO	NO	NO	YES	--
Duplicate Sample Name/Summa	--	--	--	DUP	--
PID Reading	0	0	0.2	0.4	0.5
General Comments					

LANGAN

SUMMA CANISTER SAMPLING FIELD DATA SHEET

Site:	3163 East Vernon Avnue
Samplers:	M. Che
Date:	5/9/2023

Sample Type	SVP	SVP	SVP	SVP	--
Sample #	B8-SG-10	B8-SG-30	B12-SG-10	B12-SG-30	--
Location	B-8	B-8	B-12	B-12	--
Summa Canister ID	N3993	A12167	N3947	8410	--
Flow Controller ID	DE-12	DE-69	DE93	DE26	--
Successful Shut-In Test?	YES	YES	--	--	--
Total Purge Time (min)	134	135	135	135	--
Purge Volume	--	--	--	--	--
Initial Tracer Gas Results in sampling line	0	0	0	0	--
Minimum Tracer Gas Results in shroud	--	--	--	--	--
Maximum Tracer Gas Results in shroud	10.80%	10.80%	18.90%	18.90%	--
Successful Leak Test?	YES	YES	YES	YES	--
Pressure Gauge - before sampling ("Hg)	-30	-30	-27	-28	--
Sample Time (Start)	1728	1726	1745	1743	--
Sample Time (Stop)	1734	1732	1751	1750	--
Total Sample Time (min)	6	6	6	7	--
Pressure Gauge - after sampling ("Hg)	-5	-5	-4	-4	--
Sample Volume (Summa)	--	--	--	--	--
Canister Pressure Went to Ambient Pressure?	NO	NO	NO	NO	--
Duplicate Sample Collected?	NO	NO	NO	NO	--
Duplicate Sample Name/Summa	--	--	--	--	--
PID Reading	0	0.3	0.1	0.5	--
General Comments					

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Log of Boring **ISB-01** Sheet 1 of 1

Project: 3163 East Vernon Avenue	Project No.: 721040501
Location: 3163 East Vernon Avenue	Elevation and Datum: Approx.
Drilling Company: ABC Liovin	Date Started: 05/09/2023 — Date Finished: 05/09/2023
Drilling Equipment: Hand Auger	Completion Depth: 10 ft — Rock Depth: -
Size and Type of Bit: 4-inch	Number of Samples: Disturbed 3 — Undisturbed - — Core
Casing Diameter (in): - — Casing Depth (ft): -	Water Level (ft.): First - — Completion - — 24 HR. -
Casing Hammer: - — Weight (lbs): - — Drop (in): -	Drilling Foreman: Angel Pedilla
Sampler: Hand Auger	Field Engineer: N. Mason
Sampler Hammer: - — Weight (lbs): - — Drop (in): -	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		Concrete slab	0						Started drilling at 5/9/2023 07:49
		Brown SILT with fine sand and trace clay, dry-moist	1	ISB-01-S$		12			Hanby = 10-50 ppm gas in soil
			2						
			3						
			4						
			5	ISB-01-5.0		12			Hanby = not detected
			6						
			7						
		Poorly graded fine SAND (SP), dry	8						
			9	ISB-01-10.0		12			
		Total Depth = 10 feet Groundwater not encountered	10						Hanby = not detected
			11						
			12						
			13						
			14						
			15						

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Log of Boring **ISB-02** Sheet 1 of 1

Project: 3163 East Vernon Avenue	Project No.: 721040501
Location: 3163 East Vernon Avenue	Elevation and Datum: Approx.
Drilling Company: ABC Liovin	Date Started: 05/09/2023 / Date Finished: 05/09/2023
Drilling Equipment: Hand Auger	Completion Depth: 4 ft / Rock Depth: 4 ft
Size and Type of Bit: 4-inch	Number of Samples: Disturbed 2 / Undisturbed - / Core
Casing Diameter (in): - / Casing Depth (ft): -	Water Level (ft.): First - / Completion - / 24 HR. -
Casing Hammer: - / Weight (lbs): - / Drop (in): -	Drilling Foreman: Angel Pedilla
Sampler: Hand Auger	Field Engineer: N. Mason
Sampler Hammer: - / Weight (lbs): - / Drop (in): -	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		Concrete slab	0						Started drilling at 5/9/2023 10:28
		Grey, well graded SAND (SW) with gravel and trace clay, moist	1	ISB-02-S$		12			Hanby = not detected
			2						
		Brownish-grey, well graded SAND to GRAVEL (SWG) with clay and trace silt, dry to moist	3	ISB-02-4.0		12			
		Dark to light brown, well graded SAND to GRAVEL (SWG), with silt and trace clay, dry to moist	4						Hanby = 100-200 ppm diesel
		Refusal encountered Total depth = 4 feet Groundwater not encountered	5						
			6						
			7						
			8						
			9						
			10						
			11						
			12						
			13						
			14						
			15						

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Log of Boring **ISB-03** Sheet 1 of 1

Project: 3163 East Vernon Avenue	Project No.: 721040501
Location: 3163 East Vernon Avenue	Elevation and Datum: Approx.
Drilling Company: ABC Liovin	Date Started: 05/08/2023 / Date Finished: 05/08/2023
Drilling Equipment: Hand Auger	Completion Depth: 1 ft / Rock Depth: 1 ft
Size and Type of Bit: 4-inch	Number of Samples: Disturbed 1 / Undisturbed - / Core
Casing Diameter (in): - / Casing Depth (ft): -	Water Level (ft.): First - / Completion - / 24 HR. -
Casing Hammer: - / Weight (lbs): - / Drop (in): -	Drilling Foreman: Angel Pedilla
Sampler: Hand Auger	Field Engineer: N. Mason
Sampler Hammer: - / Weight (lbs): - / Drop (in): -	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		Concrete slab	0	ISB-03-SS					Started drilling at 5/8/2023 10:06
		Foam				6		0.7	Hanby = 400 ppm PAH or 1,000 ppm #2 fuel oil
		Brown, silty SAND (SM), moist	1						
		Refusal encountered Total depth = 1 feet Groundwater not encountered	2						
			3						
			4						
			5						
			6						
			7						
			8						
			9						
			10						
			11						
			12						
			13						
			14						
			15						

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Log of Boring **ISB-04** Sheet 1 of 1

Project: 3163 East Vernon Avenue	Project No.: 721040501
Location: 3163 East Vernon Avenue	Elevation and Datum: Approx.
Drilling Company: ABC Liovin	Date Started: 05/08/2023 — Date Finished: 05/08/2023
Drilling Equipment: Hand Auger	Completion Depth: 10 ft — Rock Depth: -
Size and Type of Bit: 4-inch	Number of Samples: Disturbed 3 — Undisturbed - — Core
Casing Diameter (in): - — Casing Depth (ft): -	Water Level (ft.): First - — Completion - — 24 HR. -
Casing Hammer: - — Weight (lbs): - — Drop (in): -	Drilling Foreman: Angel Pedilla
Sampler: Hand Auger	Field Engineer: N. Mason
Sampler Hammer: - — Weight (lbs): - — Drop (in): -	

Material Symbol	Elev. (ft)	Sample Description	Depth Scale	Sample Data: Number	Type	Recov. (in)	Penetr. resist BL/6in	PID (ppm)	Remarks (Drilling Fluid, Depth of Casing, Fluid Loss, Drilling Resistance, etc.)
		Concrete slab	0						Started drilling at 5/8/2023 12:15
		Poorly graded, tan clean SAND (SP), moist	1	ISB-04-S$		12			Hanby = not detected
			2						
			3						
			4						
		Poorly graded, tan clean SAND (SP) with trace gravel, moist	5	ISB-04-5.0		12		0	Hanby = not detected
			6						
			7						
			8						
			9	ISB-04-10.0		12			
		Total depth = 10 feet Groundwater not encountered	10					0	Hanby = not detected
			11						
			12						
			13						
			14						
			15						

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Torrent
LABORATORY, INC.

Langan
135 Main Street, Suite 1500
San Francisco, California 94105
Tel: 415.955.5200

RE: VERNON

Work Order No.: 2305105 Rev: 2

Dear Nick Cutler:

Torrent Laboratory, Inc. received 22 sample(s) on May 12, 2023 for the analyses presented in the following Report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.

Torrent Laboratory, Inc. is certified by the State of California, ELAP #1991. If you have any questions regarding these test results, please feel free to contact the Project Management Team at (408)263-5258; ext 204.



Kathie Evans
Project Manager

May 19, 2023
Date

Date: 5/19/2023

Client: Langan

Project: VERNON

Work Order: 2305105

CASE NARRATIVE

Unless otherwise indicated in the following narrative, no issues encountered with the receiving, preparation, analysis or reporting of the results associated with this work order.

Unless otherwise indicated in the following narrative, no results have been method and/or field blank corrected.

Reported results relate only to the items/samples tested by the laboratory.

This report shall not be reproduced, except in full, without the written approval of Torrent Laboratory, Inc.

REVISIONS

Report revised to include additionally requested data.

Analytical Comments for method 6010B, 2305105-003 MS/MSD, QC Preparation Batch ID 1151065, Note:The % recoveries for Barium are outside of laboratory control limits but % RPD is within limits. The associated LCS/LCSD is within both % Recovery and % RPD limits. No corrective action required.

Analytical Comments for method 6010B, 2305105-003 MS/MSD, QC Preparation Batch ID 1151065, Note:The % recoveries for Mercury are outside of laboratory control limits but % RPD is within limits. The associated LCS/LCSD is within both % Recovery and % RPD limits. No corrective action required.

Rev. 1 (5/19/23)

Report revised to include additionally requested SVOC and VOC data.

Rev. 2 (5/23/23)

Torrent LABORATORY, INC.

Sample Result Summary

Report prepared for: Nick Cutler
Langan

Date Received: 05/12/23
Date Reported: 05/19/23

B-2-5 2305105-001

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	2.81	mg/Kg
Barium	SW6010B	1	0.055	5.00	148	mg/Kg
Chromium	SW6010B	1	0.075	5.00	21.8	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	12.9	mg/Kg
Copper	SW6010B	1	0.20	5.00	25.2	mg/Kg
Lead	SW6010B	1	0.10	3.00	6.25	mg/Kg
Nickel	SW6010B	1	0.50	5.00	14.3	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	54.0	mg/Kg
Zinc	SW6010B	1	0.30	5.00	63.5	mg/Kg

B-2 (9-10) 2305105-002

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

B-2 (14-15) 2305105-003

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Barium	SW6010B	1	0.055	5.00	55.5	mg/Kg
Chromium	SW6010B	1	0.075	5.00	5.30	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	14.2	mg/Kg
Zinc	SW6010B	1	0.30	5.00	17.6	mg/Kg

B-2 (29-30) 2305105-006

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

B-11-5 2305105-007

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	3.44	mg/Kg
Barium	SW6010B	1	0.055	5.00	105	mg/Kg
Chromium	SW6010B	1	0.075	5.00	13.9	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	8.00	mg/Kg
Copper	SW6010B	1	0.20	5.00	45.8	mg/Kg
Lead	SW6010B	1	0.10	3.00	89.5	mg/Kg
Nickel	SW6010B	1	0.50	5.00	11.3	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	40.3	mg/Kg
Zinc	SW6010B	1	0.30	5.00	93.5	mg/Kg

Torrent LABORATORY, INC.

Sample Result Summary

Report prepared for: Nick Cutler
Langan

Date Received: 05/12/23
Date Reported: 05/19/23

B-11 (9-10) 2305105-008

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Antimony	SW6010B	1	0.050	5.00	24.4	mg/Kg
Arsenic	SW6010B	1	0.15	1.30	34.4	mg/Kg
Barium	SW6010B	1	0.055	5.00	1020	mg/Kg
Cadmium	SW6010B	1	0.10	0.750	3.64	mg/Kg
Chromium	SW6010B	1	0.075	5.00	42.9	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	13.9	mg/Kg
Copper	SW6010B	1	0.20	5.00	800	mg/Kg
Lead	SW6010B	1	0.10	3.00	1110	mg/Kg
Nickel	SW6010B	1	0.50	5.00	136	mg/Kg
Silver	SW6010B	1	0.15	0.500	2.89	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	69.5	mg/Kg
Zinc	SW6010B	1	0.30	5.00	1150	mg/Kg
Hexavalent Chromium	SW7199	1	3.1	10	249	ug/Kg
Mercury	SW7471B	1	0.083	0.50	0.61	mg/Kg

B-12-5 2305105-009

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Barium	SW6010B	1	0.055	5.00	55.5	mg/Kg
Chromium	SW6010B	1	0.075	5.00	8.35	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	5.05	mg/Kg
Copper	SW6010B	1	0.20	5.00	7.60	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	25.3	mg/Kg
Zinc	SW6010B	1	0.30	5.00	24.6	mg/Kg

B-12 (9-10) 2305105-010

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

B-12 (14-15) 2305105-011

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Barium	SW6010B	1	0.055	5.00	42.3	mg/Kg
Chromium	SW6010B	1	0.075	5.00	14.7	mg/Kg
Copper	SW6010B	1	0.20	5.00	5.00	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	21.1	mg/Kg
Zinc	SW6010B	1	0.30	5.00	18.8	mg/Kg

Torrent LABORATORY, INC.

Sample Result Summary

Report prepared for: Nick Cutler
Langan

Date Received: 05/12/23
Date Reported: 05/19/23

B-13-5 2305105-014

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Barium	SW6010B	1	0.055	5.00	61.5	mg/Kg
Chromium	SW6010B	1	0.075	5.00	8.30	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	5.50	mg/Kg
Copper	SW6010B	1	0.20	5.00	6.85	mg/Kg
Nickel	SW6010B	1	0.50	5.00	5.15	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	26.3	mg/Kg
Zinc	SW6010B	1	0.30	5.00	26.9	mg/Kg

B-13 (9-10) 2305105-015

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

B-13 (14-15) 2305105-016

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Barium	SW6010B	1	0.055	5.00	45.5	mg/Kg
Chromium	SW6010B	1	0.075	5.00	6.15	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	19.1	mg/Kg
Zinc	SW6010B	1	0.30	5.00	19.8	mg/Kg

B-13 (29-30) 2305105-019

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

B-12 (29-30.5) 2305105-022

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2-5	**Lab Sample ID:**	2305105-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:03		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151158	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	12:37	PH	474858

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2-5	**Lab Sample ID:**	2305105-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:03		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/16/23	12:20:00PM
Prep Batch ID:	1150991	**Prep Analyst:**	AJNG	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/17/23	13:24	BJAY	474739

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2-5	**Lab Sample ID:**	2305105-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:03		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/16/23 12:15:00PM
Prep Batch ID:	1150990	**Prep Analyst:**	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/16/23	20:39	AT	474758
Arsenic	SW6010B	1	0.15	1.30	**2.81**		mg/Kg	05/16/23	20:39	AT	474758
Barium	SW6010B	1	0.055	5.00	**148**		mg/Kg	05/16/23	20:39	AT	474758
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/16/23	20:39	AT	474758
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/16/23	20:39	AT	474758
Chromium	SW6010B	1	0.075	5.00	**21.8**		mg/Kg	05/16/23	20:39	AT	474758
Cobalt	SW6010B	1	0.070	5.00	**12.9**		mg/Kg	05/16/23	20:39	AT	474758
Copper	SW6010B	1	0.20	5.00	**25.2**		mg/Kg	05/16/23	20:39	AT	474758
Lead	SW6010B	1	0.10	3.00	**6.25**		mg/Kg	05/16/23	20:39	AT	474758
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/16/23	20:39	AT	474758
Nickel	SW6010B	1	0.50	5.00	**14.3**		mg/Kg	05/16/23	20:39	AT	474758
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/16/23	20:39	AT	474758
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/16/23	20:39	AT	474758
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/16/23	20:39	AT	474758
Vanadium	SW6010B	1	0.10	5.00	**54.0**		mg/Kg	05/16/23	20:39	AT	474758
Zinc	SW6010B	1	0.30	5.00	**63.5**		mg/Kg	05/16/23	20:39	AT	474758

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2-5	**Lab Sample ID:**	2305105-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:03		
SDG:			

Prep Method:	3546_PCB	**Prep Batch Date/Time:**	5/16/23 9:41:00AM
Prep Batch ID:	1150974	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Aroclor1016	SW8082A	1	35.0	100	ND		ug/Kg	05/16/23	11:46	AK	474707
Aroclor1221	SW8082A	1	5.00	100	ND		ug/Kg	05/16/23	11:46	AK	474707
Aroclor1232	SW8082A	1	17.0	100	ND		ug/Kg	05/16/23	11:46	AK	474707
Aroclor1242	SW8082A	1	3.00	100	ND		ug/Kg	05/16/23	11:46	AK	474707
Aroclor1248	SW8082A	1	2.00	100	ND		ug/Kg	05/16/23	11:46	AK	474707
Aroclor1254	SW8082A	1	14.0	100	ND		ug/Kg	05/16/23	11:46	AK	474707
Aroclor1260	SW8082A	1	24.0	100	ND		ug/Kg	05/16/23	11:46	AK	474707
			Acceptance Limits								
TCMX (S)	SW8082A		48 - 125		**99.0**		%	05/16/23	11:46	AK	474707
DCBP (S)	SW8082A		48 - 135		**93.0**		%	05/16/23	11:46	AK	474707

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2-5	**Lab Sample ID:**	2305105-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:03		
SDG:			

Prep Method:	3546_OCP	**Prep Batch Date/Time:**	5/13/23 10:20:00AM
Prep Batch ID:	1150929	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
alpha-BHC	SW8081B	1	0.25	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
gamma-BHC (Lindane)	SW8081B	1	0.71	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
beta-BHC	SW8081B	1	0.44	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
delta-BHC	SW8081B	1	0.65	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
Heptachlor	SW8081B	1	0.27	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
Aldrin	SW8081B	1	0.29	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
Heptachlor Epoxide	SW8081B	1	0.31	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
gamma-Chlordane	SW8081B	1	1.5	3.0	ND		ug/Kg	05/13/23	21:05	LA	474648
alpha-Chlordane	SW8081B	1	0.36	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
4,4'-DDE	SW8081B	1	0.61	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
Endosulfan I	SW8081B	1	0.29	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
Dieldrin	SW8081B	1	0.25	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
Endrin	SW8081B	1	0.79	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
4,4'-DDD	SW8081B	1	0.64	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
Endosulfan II	SW8081B	1	0.34	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
4,4'-DDT	SW8081B	1	0.74	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
Endrin Aldehyde	SW8081B	1	0.51	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
Methoxychlor	SW8081B	1	2.6	6.0	ND		ug/Kg	05/13/23	21:05	LA	474648
Endosulfan Sulfate	SW8081B	1	0.51	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
Endrin Ketone	SW8081B	1	0.43	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
Chlordane, Technical	SW8081B	1	2.7	20	ND		ug/Kg	05/13/23	21:05	LA	474648
Toxaphene	SW8081B	1	22	50	ND		ug/Kg	05/13/23	21:05	LA	474648
			Acceptance Limits								
Tetrachloro-M-Xylene (S)	SW8081B		48 - 125		**84.0**		%	05/13/23	21:05	LA	474648
Decachlorobiphenyl (S)	SW8081B		38 - 135		**82.7**		%	05/13/23	21:05	LA	474648

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2 (9-10)	**Lab Sample ID:**	2305105-002A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:14		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
N-Nitrosodimethylamine	SW8270C	1	46.9	720	ND		ug/Kg	05/22/23	15:11	MT	474888
Phenol	SW8270C	1	43.8	288	ND		ug/Kg	05/22/23	15:11	MT	474888
Bis(2-chloroethyl)ether	SW8270C	1	13.3	144	ND		ug/Kg	05/22/23	15:11	MT	474888
2-Chlorophenol	SW8270C	1	47.7	288	ND		ug/Kg	05/22/23	15:11	MT	474888
1,3-Dichlorobenzene	SW8270C	1	13.1	144	ND		ug/Kg	05/22/23	15:11	MT	474888
1,4-Dichlorobenzene	SW8270C	1	14.6	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Benzyl Alcohol	SW8270C	1	20.5	288	ND		ug/Kg	05/22/23	15:11	MT	474888
1,2-Dichlorobenzene	SW8270C	1	13.5	144	ND		ug/Kg	05/22/23	15:11	MT	474888
2-Methylphenol (o-Cresol)	SW8270C	1	29.3	288	ND		ug/Kg	05/22/23	15:11	MT	474888
N-Methyl-2-Pyrrolidone (NMP)	SW8270C	1	68.0	720	ND		ug/Kg	05/22/23	15:11	MT	474888
3-/4-Methylphenol (p-/m-Cresol)	SW8270C	1	31.3	288	ND		ug/Kg	05/22/23	15:11	MT	474888
N-nitroso-di-n-propylamine	SW8270C	1	13.2	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Hexachloroethane	SW8270C	1	17.1	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Nitrobenzene	SW8270C	1	12.8	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Isophorone	SW8270C	1	12.2	144	ND		ug/Kg	05/22/23	15:11	MT	474888
2-Nitrophenol	SW8270C	1	25.4	288	ND		ug/Kg	05/22/23	15:11	MT	474888
2,4-Dimethylphenol	SW8270C	1	22.8	288	ND		ug/Kg	05/22/23	15:11	MT	474888
Benzoic Acid	SW8270C	1	41.7	288	ND		ug/Kg	05/22/23	15:11	MT	474888
Bis(2-Chloroethoxy)methane	SW8270C	1	9.79	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Bis(2-chloroisopropyl)ether	SW8270C	1	12.6	144	ND		ug/Kg	05/22/23	15:11	MT	474888
2,4-Dichlorophenol	SW8270C	1	39.3	288	ND		ug/Kg	05/22/23	15:11	MT	474888
1,2,4-Trichlorobenzene	SW8270C	1	11.8	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Naphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/22/23	15:11	MT	474888
2,6-Dichlorophenol	SW8270C	1	35.8	288	ND		ug/Kg	05/22/23	15:11	MT	474888
Hexachloro-1,3-butadiene	SW8270C	1	8.34	144	ND		ug/Kg	05/22/23	15:11	MT	474888
4-Chloro-3-methylphenol	SW8270C	1	33.8	288	ND		ug/Kg	05/22/23	15:11	MT	474888
2-Methylnaphthalene	SW8270C	1	10.4	144	ND		ug/Kg	05/22/23	15:11	MT	474888
1-Methylnaphthalene	SW8270C	1	12.2	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Hexachlorocyclopentadiene	SW8270C	1	12.9	144	ND		ug/Kg	05/22/23	15:11	MT	474888
2,4,6-Trichlorophenol	SW8270C	1	35.9	288	ND		ug/Kg	05/22/23	15:11	MT	474888
2,4,5-Trichlorophenol	SW8270C	1	33.4	288	ND		ug/Kg	05/22/23	15:11	MT	474888
2-Chloronaphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/22/23	15:11	MT	474888
1,4-Dinitrobenzene	SW8270C	1	10.3	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Dimethyl phthalate	SW8270C	1	14.2	720	ND		ug/Kg	05/22/23	15:11	MT	474888
1,3-Dinitrobenzene	SW8270C	1	10.4	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Acenaphthylene	SW8270C	1	8.28	144	ND		ug/Kg	05/22/23	15:11	MT	474888
2,6-Dinitrotoluene	SW8270C	1	11.3	144	ND		ug/Kg	05/22/23	15:11	MT	474888
1,2-Dinitrobenzene	SW8270C	1	15.8	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Acenaphthene	SW8270C	1	10.7	144	ND		ug/Kg	05/22/23	15:11	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2 (9-10)	**Lab Sample ID:**	2305105-002A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:14		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2,4-Dinitrophenol	SW8270C	1	77.6	720	ND		ug/Kg	05/22/23	15:11	MT	474888
4-Nitrophenol	SW8270C	1	54.7	720	ND		ug/Kg	05/22/23	15:11	MT	474888
Dibenzofuran	SW8270C	1	11.2	144	ND		ug/Kg	05/22/23	15:11	MT	474888
2,4-Dinitrotoluene	SW8270C	1	12.1	144	ND		ug/Kg	05/22/23	15:11	MT	474888
2,3,5,6-Tetrachlorophenol	SW8270C	1	27.6	288	ND		ug/Kg	05/22/23	15:11	MT	474888
2,3,4,6-Tetrachlorophenol	SW8270C	1	31.5	288	ND		ug/Kg	05/22/23	15:11	MT	474888
Diethylphthalate	SW8270C	1	13.6	720	ND		ug/Kg	05/22/23	15:11	MT	474888
Fluorene	SW8270C	1	10.3	144	ND		ug/Kg	05/22/23	15:11	MT	474888
4-Chlorophenyl-phenylether	SW8270C	1	9.32	144	ND		ug/Kg	05/22/23	15:11	MT	474888
4,6-Dinitro-2-methylphenol	SW8270C	1	13.4	288	ND		ug/Kg	05/22/23	15:11	MT	474888
Diphenylamine	SW8270C	1	13.0	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Azobenzene	SW8270C	1	114	144	ND		ug/Kg	05/22/23	15:11	MT	474888
4-Bromophenyl-phenylether	SW8270C	1	8.23	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Hexachlorobenzene	SW8270C	1	8.66	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Pentachlorophenol	SW8270C	1	25.0	288	ND		ug/Kg	05/22/23	15:11	MT	474888
Phenanthrene	SW8270C	1	9.32	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Anthracene	SW8270C	1	8.91	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Carbazole	SW8270C	1	10.7	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Di-n-butylphthalate	SW8270C	1	13.5	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Fluoranthene	SW8270C	1	10.0	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Benzidine	SW8270C	1	147	147	ND		ug/Kg	05/22/23	15:11	MT	474888
Pyrene	SW8270C	1	12.0	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Butylbenzylphthalate	SW8270C	1	21.0	720	ND		ug/Kg	05/22/23	15:11	MT	474888
Benzo(a)anthracene	SW8270C	1	9.80	144	ND		ug/Kg	05/22/23	15:11	MT	474888
3,3-Dichlorobenzidine	SW8270C	1	118	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Chrysene	SW8270C	1	15.2	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Bis(2-Ethylhexyl)phthalate	SW8270C	1	15.3	720	ND		ug/Kg	05/22/23	15:11	MT	474888
Di-n-Octylphthalate	SW8270C	1	12.3	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Benzo(b)fluorathene	SW8270C	1	12.0	144	ND		ug/Kg	05/22/23	15:11	MT	474888
benzo(k)fluorathene	SW8270C	1	8.16	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Benzo(a)pyrene	SW8270C	1	9.80	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Indeno(1,2,3-c,d)pyrene	SW8270C	1	13.8	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Dibenzo(a,h)anthracene	SW8270C	1	12.7	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Benzo(g,h,i)perylene	SW8270C	1	16.7	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Pyridine	SW8270C	1	43.8	720	ND		ug/Kg	05/22/23	15:11	MT	474888
			Acceptance Limits								
2-Fluorophenol (S)	SW8270C		25 - 121		**72.3**		%	05/22/23	15:11	MT	474888
Phenol-d6 (S)	SW8270C		24 - 113		**63.1**		%	05/22/23	15:11	MT	474888
2,4,6-Tribromophenol (S)	SW8270C		19 - 122		**70.1**		%	05/22/23	15:11	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2 (9-10)	**Lab Sample ID:**	2305105-002A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:14		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2-Fluorobiphenyl (S)	SW8270C		45 - 143		**75.9**		%	05/22/23	15:11	MT	474888
Nitrobenzene-d5 (S)	SW8270C		23 - 120		**61.7**		%	05/22/23	15:11	MT	474888
p-Terphenyl-d14 (S)	SW8270C		18 - 137		**84.5**		%	05/22/23	15:11	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2 (9-10)	**Lab Sample ID:**	2305105-002A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:14		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/20/23 11:00:00AM
Prep Batch ID:	1151199	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	1.2	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Chloromethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Vinyl Chloride	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Bromomethane	SW8260B	1	2.7	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Chloroethane	SW8260B	1	3.0	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Trichlorofluoromethane	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,1-Dichloroethene	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Freon 113	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Methylene Chloride	SW8260B	1	7.1	10	ND		ug/Kg	05/20/23	19:32	BP	474889
trans-1,2-Dichloroethene	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	19:32	BP	474889
MTBE	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	19:32	BP	474889
TBA	SW8260B	1	12	50	ND		ug/Kg	05/20/23	19:32	BP	474889
Diisopropyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,1-Dichloroethane	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Ethyl tert-Butyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	19:32	BP	474889
cis-1,2-Dichloroethene	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	19:32	BP	474889
2,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Bromochloromethane	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Chloroform	SW8260B	1	2.4	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Carbon Tetrachloride	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,1,1-Trichloroethane	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,1-Dichloropropene	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Benzene	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	19:32	BP	474889
TAME	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,2-Dichloroethane	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Trichloroethene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Dibromomethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Bromodichloromethane	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	19:32	BP	474889
cis-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Toluene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Tetrachloroethene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	19:32	BP	474889
trans-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,1,2-Trichloroethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Dibromochloromethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,3-Dichloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,2-Dibromoethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Chlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Ethylbenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	19:32	BP	474889

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2 (9-10)	**Lab Sample ID:**	2305105-002A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:14		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/20/23 11:00:00AM
Prep Batch ID:	1151199	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	19:32	BP	474889
m,p-Xylene	SW8260B	1	3.2	10	ND		ug/Kg	05/20/23	19:32	BP	474889
o-Xylene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Styrene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Bromoform	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Isopropyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	19:32	BP	474889
n-Propylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Bromobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,1,2,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	19:32	BP	474889
2-Chlorotoluene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,3,5-Trimethylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,2,3-Trichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	19:32	BP	474889
4-Chlorotoluene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	19:32	BP	474889
tert-Butylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,2,4-Trimethylbenzene	SW8260B	1	1.4	10	ND		ug/Kg	05/20/23	19:32	BP	474889
sec-Butyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	19:32	BP	474889
p-Isopropyltoluene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,3-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,4-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	19:32	BP	474889
n-Butylbenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,2-Dichlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,2-Dibromo-3-Chloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Hexachlorobutadiene	SW8260B	1	1.4	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,2,4-Trichlorobenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Naphthalene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,2,3-Trichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	19:32	BP	474889
2-Butanone	SW8260B	1	2.3	10.0	ND		ug/Kg	05/20/23	19:32	BP	474889
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**121**		%	05/20/23	19:32	BP	474889
(S) Toluene-d8	SW8260B		55.2 - 133		**104**		%	05/20/23	19:32	BP	474889
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**100**		%	05/20/23	19:32	BP	474889

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2 (14-15)	**Lab Sample ID:**	2305105-003A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:20		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	7:17	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2 (14-15)	**Lab Sample ID:**	2305105-003A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:20		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/17/23	7:15:00PM
Prep Batch ID:	1151067	**Prep Analyst:**	TNGO	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/18/23	13:15	BJAY	474773

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2 (14-15)	**Lab Sample ID:**	2305105-003A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:20		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/17/23 7:00:00PM
Prep Batch ID:	1151065	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:09	AT	474846
Arsenic	SW6010B	1	0.15	1.30	ND		mg/Kg	05/18/23	20:09	AT	474846
Barium	SW6010B	1	0.055	5.00	**55.5**		mg/Kg	05/18/23	20:09	AT	474846
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/18/23	20:09	AT	474846
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/18/23	20:09	AT	474846
Chromium	SW6010B	1	0.075	5.00	**5.30**		mg/Kg	05/18/23	20:09	AT	474846
Cobalt	SW6010B	1	0.070	5.00	ND		mg/Kg	05/18/23	20:09	AT	474846
Copper	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:09	AT	474846
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/18/23	20:09	AT	474846
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:09	AT	474846
Nickel	SW6010B	1	0.50	5.00	ND		mg/Kg	05/18/23	20:09	AT	474846
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/18/23	20:09	AT	474846
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/18/23	20:09	AT	474846
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:09	AT	474846
Vanadium	SW6010B	1	0.10	5.00	**14.2**		mg/Kg	05/18/23	20:09	AT	474846
Zinc	SW6010B	1	0.30	5.00	**17.6**		mg/Kg	05/18/23	20:09	AT	474846

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2 (29-30)	**Lab Sample ID:**	2305105-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:32		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
N-Nitrosodimethylamine	SW8270C	1	46.9	720	ND		ug/Kg	05/22/23	15:41	MT	474888
Phenol	SW8270C	1	43.8	288	ND		ug/Kg	05/22/23	15:41	MT	474888
Bis(2-chloroethyl)ether	SW8270C	1	13.3	144	ND		ug/Kg	05/22/23	15:41	MT	474888
2-Chlorophenol	SW8270C	1	47.7	288	ND		ug/Kg	05/22/23	15:41	MT	474888
1,3-Dichlorobenzene	SW8270C	1	13.1	144	ND		ug/Kg	05/22/23	15:41	MT	474888
1,4-Dichlorobenzene	SW8270C	1	14.6	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Benzyl Alcohol	SW8270C	1	20.5	288	ND		ug/Kg	05/22/23	15:41	MT	474888
1,2-Dichlorobenzene	SW8270C	1	13.5	144	ND		ug/Kg	05/22/23	15:41	MT	474888
2-Methylphenol (o-Cresol)	SW8270C	1	29.3	288	ND		ug/Kg	05/22/23	15:41	MT	474888
N-Methyl-2-Pyrrolidone (NMP)	SW8270C	1	68.0	720	ND		ug/Kg	05/22/23	15:41	MT	474888
3-/4-Methylphenol (p-/m-Cresol)	SW8270C	1	31.3	288	ND		ug/Kg	05/22/23	15:41	MT	474888
N-nitroso-di-n-propylamine	SW8270C	1	13.2	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Hexachloroethane	SW8270C	1	17.1	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Nitrobenzene	SW8270C	1	12.8	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Isophorone	SW8270C	1	12.2	144	ND		ug/Kg	05/22/23	15:41	MT	474888
2-Nitrophenol	SW8270C	1	25.4	288	ND		ug/Kg	05/22/23	15:41	MT	474888
2,4-Dimethylphenol	SW8270C	1	22.8	288	ND		ug/Kg	05/22/23	15:41	MT	474888
Benzoic Acid	SW8270C	1	41.7	288	ND		ug/Kg	05/22/23	15:41	MT	474888
Bis(2-Chloroethoxy)methane	SW8270C	1	9.79	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Bis(2-chloroisopropyl)ether	SW8270C	1	12.6	144	ND		ug/Kg	05/22/23	15:41	MT	474888
2,4-Dichlorophenol	SW8270C	1	39.3	288	ND		ug/Kg	05/22/23	15:41	MT	474888
1,2,4-Trichlorobenzene	SW8270C	1	11.8	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Naphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/22/23	15:41	MT	474888
2,6-Dichlorophenol	SW8270C	1	35.8	288	ND		ug/Kg	05/22/23	15:41	MT	474888
Hexachloro-1,3-butadiene	SW8270C	1	8.34	144	ND		ug/Kg	05/22/23	15:41	MT	474888
4-Chloro-3-methylphenol	SW8270C	1	33.8	288	ND		ug/Kg	05/22/23	15:41	MT	474888
2-Methylnaphthalene	SW8270C	1	10.4	144	ND		ug/Kg	05/22/23	15:41	MT	474888
1-Methylnaphthalene	SW8270C	1	12.2	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Hexachlorocyclopentadiene	SW8270C	1	12.9	144	ND		ug/Kg	05/22/23	15:41	MT	474888
2,4,6-Trichlorophenol	SW8270C	1	35.9	288	ND		ug/Kg	05/22/23	15:41	MT	474888
2,4,5-Trichlorophenol	SW8270C	1	33.4	288	ND		ug/Kg	05/22/23	15:41	MT	474888
2-Chloronaphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/22/23	15:41	MT	474888
1,4-Dinitrobenzene	SW8270C	1	10.3	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Dimethyl phthalate	SW8270C	1	14.2	720	ND		ug/Kg	05/22/23	15:41	MT	474888
1,3-Dinitrobenzene	SW8270C	1	10.4	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Acenaphthylene	SW8270C	1	8.28	144	ND		ug/Kg	05/22/23	15:41	MT	474888
2,6-Dinitrotoluene	SW8270C	1	11.3	144	ND		ug/Kg	05/22/23	15:41	MT	474888
1,2-Dinitrobenzene	SW8270C	1	15.8	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Acenaphthene	SW8270C	1	10.7	144	ND		ug/Kg	05/22/23	15:41	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2 (29-30)	**Lab Sample ID:**	2305105-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:32		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2,4-Dinitrophenol	SW8270C	1	77.6	720	ND		ug/Kg	05/22/23	15:41	MT	474888
4-Nitrophenol	SW8270C	1	54.7	720	ND		ug/Kg	05/22/23	15:41	MT	474888
Dibenzofuran	SW8270C	1	11.2	144	ND		ug/Kg	05/22/23	15:41	MT	474888
2,4-Dinitrotoluene	SW8270C	1	12.1	144	ND		ug/Kg	05/22/23	15:41	MT	474888
2,3,5,6-Tetrachlorophenol	SW8270C	1	27.6	288	ND		ug/Kg	05/22/23	15:41	MT	474888
2,3,4,6-Tetrachlorophenol	SW8270C	1	31.5	288	ND		ug/Kg	05/22/23	15:41	MT	474888
Diethylphthalate	SW8270C	1	13.6	720	ND		ug/Kg	05/22/23	15:41	MT	474888
Fluorene	SW8270C	1	10.3	144	ND		ug/Kg	05/22/23	15:41	MT	474888
4-Chlorophenyl-phenylether	SW8270C	1	9.32	144	ND		ug/Kg	05/22/23	15:41	MT	474888
4,6-Dinitro-2-methylphenol	SW8270C	1	13.4	288	ND		ug/Kg	05/22/23	15:41	MT	474888
Diphenylamine	SW8270C	1	13.0	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Azobenzene	SW8270C	1	114	144	ND		ug/Kg	05/22/23	15:41	MT	474888
4-Bromophenyl-phenylether	SW8270C	1	8.23	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Hexachlorobenzene	SW8270C	1	8.66	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Pentachlorophenol	SW8270C	1	25.0	288	ND		ug/Kg	05/22/23	15:41	MT	474888
Phenanthrene	SW8270C	1	9.32	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Anthracene	SW8270C	1	8.91	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Carbazole	SW8270C	1	10.7	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Di-n-butylphthalate	SW8270C	1	13.5	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Fluoranthene	SW8270C	1	10.0	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Benzidine	SW8270C	1	147	147	ND		ug/Kg	05/22/23	15:41	MT	474888
Pyrene	SW8270C	1	12.0	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Butylbenzylphthalate	SW8270C	1	21.0	720	ND		ug/Kg	05/22/23	15:41	MT	474888
Benzo(a)anthracene	SW8270C	1	9.80	144	ND		ug/Kg	05/22/23	15:41	MT	474888
3,3-Dichlorobenzidine	SW8270C	1	118	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Chrysene	SW8270C	1	15.2	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Bis(2-Ethylhexyl)phthalate	SW8270C	1	15.3	720	ND		ug/Kg	05/22/23	15:41	MT	474888
Di-n-Octylphthalate	SW8270C	1	12.3	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Benzo(b)fluorathene	SW8270C	1	12.0	144	ND		ug/Kg	05/22/23	15:41	MT	474888
benzo(k)fluorathene	SW8270C	1	8.16	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Benzo(a)pyrene	SW8270C	1	9.80	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Indeno(1,2,3-c,d)pyrene	SW8270C	1	13.8	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Dibenzo(a,h)anthracene	SW8270C	1	12.7	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Benzo(g,h,i)perylene	SW8270C	1	16.7	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Pyridine	SW8270C	1	43.8	720	ND		ug/Kg	05/22/23	15:41	MT	474888
			Acceptance Limits								
2-Fluorophenol (S)	SW8270C		25 - 121		**48.0**		%	05/22/23	15:41	MT	474888
Phenol-d6 (S)	SW8270C		24 - 113		**43.1**		%	05/22/23	15:41	MT	474888
2,4,6-Tribromophenol (S)	SW8270C		19 - 122		**42.4**		%	05/22/23	15:41	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2 (29-30)	**Lab Sample ID:**	2305105-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:32		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23	11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2-Fluorobiphenyl (S)	SW8270C		45 - 143		**57.5**		%	05/22/23	15:41	MT	474888
Nitrobenzene-d5 (S)	SW8270C		23 - 120		**47.5**		%	05/22/23	15:41	MT	474888
p-Terphenyl-d14 (S)	SW8270C		18 - 137		**63.7**		%	05/22/23	15:41	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2 (29-30)	**Lab Sample ID:**	2305105-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:32		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/20/23 11:00:00AM
Prep Batch ID:	1151199	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	1.2	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Chloromethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Vinyl Chloride	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Bromomethane	SW8260B	1	2.7	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Chloroethane	SW8260B	1	3.0	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Trichlorofluoromethane	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,1-Dichloroethene	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Freon 113	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Methylene Chloride	SW8260B	1	7.1	10	ND		ug/Kg	05/20/23	20:07	BP	474889
trans-1,2-Dichloroethene	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	20:07	BP	474889
MTBE	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	20:07	BP	474889
TBA	SW8260B	1	12	50	ND		ug/Kg	05/20/23	20:07	BP	474889
Diisopropyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,1-Dichloroethane	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Ethyl tert-Butyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	20:07	BP	474889
cis-1,2-Dichloroethene	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	20:07	BP	474889
2,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Bromochloromethane	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Chloroform	SW8260B	1	2.4	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Carbon Tetrachloride	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,1,1-Trichloroethane	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,1-Dichloropropene	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Benzene	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	20:07	BP	474889
TAME	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,2-Dichloroethane	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Trichloroethene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Dibromomethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Bromodichloromethane	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	20:07	BP	474889
cis-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Toluene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Tetrachloroethene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:07	BP	474889
trans-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,1,2-Trichloroethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Dibromochloromethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,3-Dichloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,2-Dibromoethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Chlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Ethylbenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:07	BP	474889

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2 (29-30)	**Lab Sample ID:**	2305105-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:32		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/20/23 11:00:00AM
Prep Batch ID:	1151199	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	20:07	BP	474889
m,p-Xylene	SW8260B	1	3.2	10	ND		ug/Kg	05/20/23	20:07	BP	474889
o-Xylene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Styrene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Bromoform	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Isopropyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:07	BP	474889
n-Propylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Bromobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,1,2,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	20:07	BP	474889
2-Chlorotoluene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,3,5-Trimethylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,2,3-Trichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	20:07	BP	474889
4-Chlorotoluene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:07	BP	474889
tert-Butylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,2,4-Trimethylbenzene	SW8260B	1	1.4	10	ND		ug/Kg	05/20/23	20:07	BP	474889
sec-Butyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:07	BP	474889
p-Isopropyltoluene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,3-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,4-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:07	BP	474889
n-Butylbenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,2-Dichlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,2-Dibromo-3-Chloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Hexachlorobutadiene	SW8260B	1	1.4	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,2,4-Trichlorobenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Naphthalene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,2,3-Trichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:07	BP	474889
2-Butanone	SW8260B	1	2.3	10.0	ND		ug/Kg	05/20/23	20:07	BP	474889
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**122**		%	05/20/23	20:07	BP	474889
(S) Toluene-d8	SW8260B		55.2 - 133		**101**		%	05/20/23	20:07	BP	474889
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**99.7**		%	05/20/23	20:07	BP	474889

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-11-5	**Lab Sample ID:**	2305105-007A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 9:47		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151158	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	12:58	PH	474858

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-11-5	**Lab Sample ID:**	2305105-007A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 9:47		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/16/23	12:20:00PM
Prep Batch ID:	1150991	**Prep Analyst:**	AJNG	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/17/23	13:26	BJAY	474739

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-11-5	**Lab Sample ID:**	2305105-007A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 9:47		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/16/23 12:15:00PM
Prep Batch ID:	1150990	**Prep Analyst:**	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/16/23	20:41	AT	474758
Arsenic	SW6010B	1	0.15	1.30	**3.44**		mg/Kg	05/16/23	20:41	AT	474758
Barium	SW6010B	1	0.055	5.00	**105**		mg/Kg	05/16/23	20:41	AT	474758
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/16/23	20:41	AT	474758
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/16/23	20:41	AT	474758
Chromium	SW6010B	1	0.075	5.00	**13.9**		mg/Kg	05/16/23	20:41	AT	474758
Cobalt	SW6010B	1	0.070	5.00	**8.00**		mg/Kg	05/16/23	20:41	AT	474758
Copper	SW6010B	1	0.20	5.00	**45.8**		mg/Kg	05/16/23	20:41	AT	474758
Lead	SW6010B	1	0.10	3.00	**89.5**		mg/Kg	05/16/23	20:41	AT	474758
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/16/23	20:41	AT	474758
Nickel	SW6010B	1	0.50	5.00	**11.3**		mg/Kg	05/16/23	20:41	AT	474758
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/16/23	20:41	AT	474758
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/16/23	20:41	AT	474758
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/16/23	20:41	AT	474758
Vanadium	SW6010B	1	0.10	5.00	**40.3**		mg/Kg	05/16/23	20:41	AT	474758
Zinc	SW6010B	1	0.30	5.00	**93.5**		mg/Kg	05/16/23	20:41	AT	474758

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-11-5	**Lab Sample ID:**	2305105-007A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 9:47		
SDG:			

Prep Method:	3546_PCB	**Prep Batch Date/Time:**	5/16/23	9:41:00AM
Prep Batch ID:	1150974	**Prep Analyst:**	NDUM	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Aroclor1016	SW8082A	1	35.0	100	ND		ug/Kg	05/16/23	12:03	AK	474707
Aroclor1221	SW8082A	1	5.00	100	ND		ug/Kg	05/16/23	12:03	AK	474707
Aroclor1232	SW8082A	1	17.0	100	ND		ug/Kg	05/16/23	12:03	AK	474707
Aroclor1242	SW8082A	1	3.00	100	ND		ug/Kg	05/16/23	12:03	AK	474707
Aroclor1248	SW8082A	1	2.00	100	ND		ug/Kg	05/16/23	12:03	AK	474707
Aroclor1254	SW8082A	1	14.0	100	ND		ug/Kg	05/16/23	12:03	AK	474707
Aroclor1260	SW8082A	1	24.0	100	ND		ug/Kg	05/16/23	12:03	AK	474707
			Acceptance Limits								
TCMX (S)	SW8082A		48 - 125		**99.0**		%	05/16/23	12:03	AK	474707
DCBP (S)	SW8082A		48 - 135		**95.0**		%	05/16/23	12:03	AK	474707

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-11-5	**Lab Sample ID:**	2305105-007A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 9:47		
SDG:			

Prep Method:	3546_OCP	**Prep Batch Date/Time:**	5/13/23 10:20:00AM
Prep Batch ID:	1150929	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
The results shown below are reported using their MDL.											
alpha-BHC	SW8081B	20	5.0	40	ND		ug/Kg	05/13/23	21:19	LA	474648
gamma-BHC (Lindane)	SW8081B	20	14	40	ND		ug/Kg	05/13/23	21:19	LA	474648
beta-BHC	SW8081B	20	8.7	40	ND		ug/Kg	05/13/23	21:19	LA	474648
delta-BHC	SW8081B	20	13	40	ND		ug/Kg	05/13/23	21:19	LA	474648
Heptachlor	SW8081B	20	5.4	40	ND		ug/Kg	05/13/23	21:19	LA	474648
Aldrin	SW8081B	20	5.9	40	ND		ug/Kg	05/13/23	21:19	LA	474648
Heptachlor Epoxide	SW8081B	20	6.1	40	ND		ug/Kg	05/13/23	21:19	LA	474648
gamma-Chlordane	SW8081B	20	29	60	ND		ug/Kg	05/13/23	21:19	LA	474648
alpha-Chlordane	SW8081B	20	7.2	40	ND		ug/Kg	05/13/23	21:19	LA	474648
4,4'-DDE	SW8081B	20	12	40	ND		ug/Kg	05/13/23	21:19	LA	474648
Endosulfan I	SW8081B	20	5.7	40	ND		ug/Kg	05/13/23	21:19	LA	474648
Dieldrin	SW8081B	20	5.0	40	ND		ug/Kg	05/13/23	21:19	LA	474648
Endrin	SW8081B	20	16	40	ND		ug/Kg	05/13/23	21:19	LA	474648
4,4'-DDD	SW8081B	20	13	40	ND		ug/Kg	05/13/23	21:19	LA	474648
Endosulfan II	SW8081B	20	6.8	40	ND		ug/Kg	05/13/23	21:19	LA	474648
4,4'-DDT	SW8081B	20	15	40	ND		ug/Kg	05/13/23	21:19	LA	474648
Endrin Aldehyde	SW8081B	20	10	40	ND		ug/Kg	05/13/23	21:19	LA	474648
Methoxychlor	SW8081B	20	52	120	ND		ug/Kg	05/13/23	21:19	LA	474648
Endosulfan Sulfate	SW8081B	20	10	40	ND		ug/Kg	05/13/23	21:19	LA	474648
Endrin Ketone	SW8081B	20	8.7	40	ND		ug/Kg	05/13/23	21:19	LA	474648
Chlordane, Technical	SW8081B	20	53	400	ND		ug/Kg	05/13/23	21:19	LA	474648
Toxaphene	SW8081B	20	440	1000	ND		ug/Kg	05/13/23	21:19	LA	474648
			Acceptance Limits								
Tetrachloro-M-Xylene (S)	SW8081B		48 - 125		**0.000**	D	%	05/13/23	21:19	LA	474648
Decachlorobiphenyl (S)	SW8081B		38 - 135		**0.000**	D	%	05/13/23	21:19	LA	474648

NOTE: Sample diluted due to the nature of the sample matrix (dark colored extract)

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-11 (9-10)	**Lab Sample ID:**	2305105-008A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 9:50		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151158	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	**249**		ug/Kg	05/19/23	10:50	PH	474858

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-11 (9-10)	**Lab Sample ID:**	2305105-008A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 9:50		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/17/23 7:15:00PM
Prep Batch ID:	1151067	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	**0.61**		mg/Kg	05/18/23	13:28	BJAY	474773

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-11 (9-10)	**Lab Sample ID:**	2305105-008A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 9:50		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/17/23 7:00:00PM
Prep Batch ID:	1151065	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	**24.4**		mg/Kg	05/18/23	20:14	AT	474846
Arsenic	SW6010B	1	0.15	1.30	**34.4**		mg/Kg	05/18/23	20:14	AT	474846
Barium	SW6010B	1	0.055	5.00	**1020**		mg/Kg	05/18/23	20:14	AT	474846
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/18/23	20:14	AT	474846
Cadmium	SW6010B	1	0.10	0.750	**3.64**		mg/Kg	05/18/23	20:14	AT	474846
Chromium	SW6010B	1	0.075	5.00	**42.9**		mg/Kg	05/18/23	20:14	AT	474846
Cobalt	SW6010B	1	0.070	5.00	**13.9**		mg/Kg	05/18/23	20:14	AT	474846
Copper	SW6010B	1	0.20	5.00	**800**		mg/Kg	05/18/23	20:14	AT	474846
Lead	SW6010B	1	0.10	3.00	**1110**		mg/Kg	05/18/23	20:14	AT	474846
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:14	AT	474846
Nickel	SW6010B	1	0.50	5.00	**136**		mg/Kg	05/18/23	20:14	AT	474846
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/18/23	20:14	AT	474846
Silver	SW6010B	1	0.15	0.500	**2.89**		mg/Kg	05/18/23	20:14	AT	474846
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:14	AT	474846
Vanadium	SW6010B	1	0.10	5.00	**69.5**		mg/Kg	05/18/23	20:14	AT	474846
Zinc	SW6010B	1	0.30	5.00	**1150**		mg/Kg	05/18/23	20:14	AT	474846

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12-5	**Lab Sample ID:**	2305105-009A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 10:55		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	7:38	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12-5	**Lab Sample ID:**	2305105-009A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 10:55		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/16/23	12:20:00PM
Prep Batch ID:	1150991	**Prep Analyst:**	AJNG	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/17/23	13:28	BJAY	474739

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12-5	**Lab Sample ID:**	2305105-009A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 10:55		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/16/23 12:15:00PM
Prep Batch ID:	1150990	**Prep Analyst:**	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/16/23	20:42	AT	474758
Arsenic	SW6010B	1	0.15	1.30	ND		mg/Kg	05/16/23	20:42	AT	474758
Barium	SW6010B	1	0.055	5.00	**55.5**		mg/Kg	05/16/23	20:42	AT	474758
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/16/23	20:42	AT	474758
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/16/23	20:42	AT	474758
Chromium	SW6010B	1	0.075	5.00	**8.35**		mg/Kg	05/16/23	20:42	AT	474758
Cobalt	SW6010B	1	0.070	5.00	**5.05**		mg/Kg	05/16/23	20:42	AT	474758
Copper	SW6010B	1	0.20	5.00	**7.60**		mg/Kg	05/16/23	20:42	AT	474758
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/16/23	20:42	AT	474758
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/16/23	20:42	AT	474758
Nickel	SW6010B	1	0.50	5.00	ND		mg/Kg	05/16/23	20:42	AT	474758
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/16/23	20:42	AT	474758
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/16/23	20:42	AT	474758
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/16/23	20:42	AT	474758
Vanadium	SW6010B	1	0.10	5.00	**25.3**		mg/Kg	05/16/23	20:42	AT	474758
Zinc	SW6010B	1	0.30	5.00	**24.6**		mg/Kg	05/16/23	20:42	AT	474758

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12-5	**Lab Sample ID:**	2305105-009A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 10:55		
SDG:			

Prep Method:	3546_PCB	**Prep Batch Date/Time:**	5/16/23 9:41:00AM
Prep Batch ID:	1150974	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Aroclor1016	SW8082A	1	35.0	100	ND		ug/Kg	05/16/23	12:19	AK	474707
Aroclor1221	SW8082A	1	5.00	100	ND		ug/Kg	05/16/23	12:19	AK	474707
Aroclor1232	SW8082A	1	17.0	100	ND		ug/Kg	05/16/23	12:19	AK	474707
Aroclor1242	SW8082A	1	3.00	100	ND		ug/Kg	05/16/23	12:19	AK	474707
Aroclor1248	SW8082A	1	2.00	100	ND		ug/Kg	05/16/23	12:19	AK	474707
Aroclor1254	SW8082A	1	14.0	100	ND		ug/Kg	05/16/23	12:19	AK	474707
Aroclor1260	SW8082A	1	24.0	100	ND		ug/Kg	05/16/23	12:19	AK	474707
			Acceptance Limits								
TCMX (S)	SW8082A		48 - 125		**114**		%	05/16/23	12:19	AK	474707
DCBP (S)	SW8082A		48 - 135		**107**		%	05/16/23	12:19	AK	474707

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12 (9-10)	**Lab Sample ID:**	2305105-010A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 10:59		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
N-Nitrosodimethylamine	SW8270C	1	46.9	720	ND		ug/Kg	05/22/23	16:12	MT	474888
Phenol	SW8270C	1	43.8	288	ND		ug/Kg	05/22/23	16:12	MT	474888
Bis(2-chloroethyl)ether	SW8270C	1	13.3	144	ND		ug/Kg	05/22/23	16:12	MT	474888
2-Chlorophenol	SW8270C	1	47.7	288	ND		ug/Kg	05/22/23	16:12	MT	474888
1,3-Dichlorobenzene	SW8270C	1	13.1	144	ND		ug/Kg	05/22/23	16:12	MT	474888
1,4-Dichlorobenzene	SW8270C	1	14.6	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Benzyl Alcohol	SW8270C	1	20.5	288	ND		ug/Kg	05/22/23	16:12	MT	474888
1,2-Dichlorobenzene	SW8270C	1	13.5	144	ND		ug/Kg	05/22/23	16:12	MT	474888
2-Methylphenol (o-Cresol)	SW8270C	1	29.3	288	ND		ug/Kg	05/22/23	16:12	MT	474888
N-Methyl-2-Pyrrolidone (NMP)	SW8270C	1	68.0	720	ND		ug/Kg	05/22/23	16:12	MT	474888
3-/4-Methylphenol (p-/m-Cresol)	SW8270C	1	31.3	288	ND		ug/Kg	05/22/23	16:12	MT	474888
N-nitroso-di-n-propylamine	SW8270C	1	13.2	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Hexachloroethane	SW8270C	1	17.1	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Nitrobenzene	SW8270C	1	12.8	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Isophorone	SW8270C	1	12.2	144	ND		ug/Kg	05/22/23	16:12	MT	474888
2-Nitrophenol	SW8270C	1	25.4	288	ND		ug/Kg	05/22/23	16:12	MT	474888
2,4-Dimethylphenol	SW8270C	1	22.8	288	ND		ug/Kg	05/22/23	16:12	MT	474888
Benzoic Acid	SW8270C	1	41.7	288	ND		ug/Kg	05/22/23	16:12	MT	474888
Bis(2-Chloroethoxy)methane	SW8270C	1	9.79	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Bis(2-chloroisopropyl)ether	SW8270C	1	12.6	144	ND		ug/Kg	05/22/23	16:12	MT	474888
2,4-Dichlorophenol	SW8270C	1	39.3	288	ND		ug/Kg	05/22/23	16:12	MT	474888
1,2,4-Trichlorobenzene	SW8270C	1	11.8	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Naphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/22/23	16:12	MT	474888
2,6-Dichlorophenol	SW8270C	1	35.8	288	ND		ug/Kg	05/22/23	16:12	MT	474888
Hexachloro-1,3-butadiene	SW8270C	1	8.34	144	ND		ug/Kg	05/22/23	16:12	MT	474888
4-Chloro-3-methylphenol	SW8270C	1	33.8	288	ND		ug/Kg	05/22/23	16:12	MT	474888
2-Methylnaphthalene	SW8270C	1	10.4	144	ND		ug/Kg	05/22/23	16:12	MT	474888
1-Methylnaphthalene	SW8270C	1	12.2	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Hexachlorocyclopentadiene	SW8270C	1	12.9	144	ND		ug/Kg	05/22/23	16:12	MT	474888
2,4,6-Trichlorophenol	SW8270C	1	35.9	288	ND		ug/Kg	05/22/23	16:12	MT	474888
2,4,5-Trichlorophenol	SW8270C	1	33.4	288	ND		ug/Kg	05/22/23	16:12	MT	474888
2-Chloronaphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/22/23	16:12	MT	474888
1,4-Dinitrobenzene	SW8270C	1	10.3	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Dimethyl phthalate	SW8270C	1	14.2	720	ND		ug/Kg	05/22/23	16:12	MT	474888
1,3-Dinitrobenzene	SW8270C	1	10.4	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Acenaphthylene	SW8270C	1	8.28	144	ND		ug/Kg	05/22/23	16:12	MT	474888
2,6-Dinitrotoluene	SW8270C	1	11.3	144	ND		ug/Kg	05/22/23	16:12	MT	474888
1,2-Dinitrobenzene	SW8270C	1	15.8	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Acenaphthene	SW8270C	1	10.7	144	ND		ug/Kg	05/22/23	16:12	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12 (9-10)	**Lab Sample ID:**	2305105-010A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 10:59		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2,4-Dinitrophenol	SW8270C	1	77.6	720	ND		ug/Kg	05/22/23	16:12	MT	474888
4-Nitrophenol	SW8270C	1	54.7	720	ND		ug/Kg	05/22/23	16:12	MT	474888
Dibenzofuran	SW8270C	1	11.2	144	ND		ug/Kg	05/22/23	16:12	MT	474888
2,4-Dinitrotoluene	SW8270C	1	12.1	144	ND		ug/Kg	05/22/23	16:12	MT	474888
2,3,5,6-Tetrachlorophenol	SW8270C	1	27.6	288	ND		ug/Kg	05/22/23	16:12	MT	474888
2,3,4,6-Tetrachlorophenol	SW8270C	1	31.5	288	ND		ug/Kg	05/22/23	16:12	MT	474888
Diethylphthalate	SW8270C	1	13.6	720	ND		ug/Kg	05/22/23	16:12	MT	474888
Fluorene	SW8270C	1	10.3	144	ND		ug/Kg	05/22/23	16:12	MT	474888
4-Chlorophenyl-phenylether	SW8270C	1	9.32	144	ND		ug/Kg	05/22/23	16:12	MT	474888
4,6-Dinitro-2-methylphenol	SW8270C	1	13.4	288	ND		ug/Kg	05/22/23	16:12	MT	474888
Diphenylamine	SW8270C	1	13.0	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Azobenzene	SW8270C	1	114	144	ND		ug/Kg	05/22/23	16:12	MT	474888
4-Bromophenyl-phenylether	SW8270C	1	8.23	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Hexachlorobenzene	SW8270C	1	8.66	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Pentachlorophenol	SW8270C	1	25.0	288	ND		ug/Kg	05/22/23	16:12	MT	474888
Phenanthrene	SW8270C	1	9.32	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Anthracene	SW8270C	1	8.91	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Carbazole	SW8270C	1	10.7	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Di-n-butylphthalate	SW8270C	1	13.5	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Fluoranthene	SW8270C	1	10.0	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Benzidine	SW8270C	1	147	147	ND		ug/Kg	05/22/23	16:12	MT	474888
Pyrene	SW8270C	1	12.0	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Butylbenzylphthalate	SW8270C	1	21.0	720	ND		ug/Kg	05/22/23	16:12	MT	474888
Benzo(a)anthracene	SW8270C	1	9.80	144	ND		ug/Kg	05/22/23	16:12	MT	474888
3,3-Dichlorobenzidine	SW8270C	1	118	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Chrysene	SW8270C	1	15.2	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Bis(2-Ethylhexyl)phthalate	SW8270C	1	15.3	720	ND		ug/Kg	05/22/23	16:12	MT	474888
Di-n-Octylphthalate	SW8270C	1	12.3	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Benzo(b)fluorathene	SW8270C	1	12.0	144	ND		ug/Kg	05/22/23	16:12	MT	474888
benzo(k)fluorathene	SW8270C	1	8.16	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Benzo(a)pyrene	SW8270C	1	9.80	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Indeno(1,2,3-c,d)pyrene	SW8270C	1	13.8	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Dibenzo(a,h)anthracene	SW8270C	1	12.7	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Benzo(g,h,i)perylene	SW8270C	1	16.7	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Pyridine	SW8270C	1	43.8	720	ND		ug/Kg	05/22/23	16:12	MT	474888
			Acceptance Limits								
2-Fluorophenol (S)	SW8270C		25 - 121		**58.5**		%	05/22/23	16:12	MT	474888
Phenol-d6 (S)	SW8270C		24 - 113		**49.9**		%	05/22/23	16:12	MT	474888
2,4,6-Tribromophenol (S)	SW8270C		19 - 122		**45.2**		%	05/22/23	16:12	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12 (9-10)	**Lab Sample ID:**	2305105-010A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 10:59		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23	11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2-Fluorobiphenyl (S)	SW8270C		45 - 143		**61.9**		%	05/22/23	16:12	MT	474888
Nitrobenzene-d5 (S)	SW8270C		23 - 120		**48.2**		%	05/22/23	16:12	MT	474888
p-Terphenyl-d14 (S)	SW8270C		18 - 137		**73.3**		%	05/22/23	16:12	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12 (9-10)	**Lab Sample ID:**	2305105-010A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 10:59		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/20/23 11:00:00AM
Prep Batch ID:	1151199	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	1.2	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Chloromethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Vinyl Chloride	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Bromomethane	SW8260B	1	2.7	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Chloroethane	SW8260B	1	3.0	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Trichlorofluoromethane	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,1-Dichloroethene	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Freon 113	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Methylene Chloride	SW8260B	1	7.1	10	ND		ug/Kg	05/20/23	20:42	BP	474889
trans-1,2-Dichloroethene	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	20:42	BP	474889
MTBE	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	20:42	BP	474889
TBA	SW8260B	1	12	50	ND		ug/Kg	05/20/23	20:42	BP	474889
Diisopropyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,1-Dichloroethane	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Ethyl tert-Butyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	20:42	BP	474889
cis-1,2-Dichloroethene	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	20:42	BP	474889
2,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Bromochloromethane	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Chloroform	SW8260B	1	2.4	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Carbon Tetrachloride	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,1,1-Trichloroethane	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,1-Dichloropropene	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Benzene	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	20:42	BP	474889
TAME	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,2-Dichloroethane	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Trichloroethene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Dibromomethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Bromodichloromethane	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	20:42	BP	474889
cis-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Toluene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Tetrachloroethene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:42	BP	474889
trans-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,1,2-Trichloroethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Dibromochloromethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,3-Dichloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,2-Dibromoethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Chlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Ethylbenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:42	BP	474889

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12 (9-10)	**Lab Sample ID:**	2305105-010A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 10:59		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/20/23 11:00:00AM
Prep Batch ID:	1151199	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	20:42	BP	474889
m,p-Xylene	SW8260B	1	3.2	10	ND		ug/Kg	05/20/23	20:42	BP	474889
o-Xylene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Styrene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Bromoform	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Isopropyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:42	BP	474889
n-Propylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Bromobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,1,2,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	20:42	BP	474889
2-Chlorotoluene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,3,5-Trimethylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,2,3-Trichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	20:42	BP	474889
4-Chlorotoluene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:42	BP	474889
tert-Butylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,2,4-Trimethylbenzene	SW8260B	1	1.4	10	ND		ug/Kg	05/20/23	20:42	BP	474889
sec-Butyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:42	BP	474889
p-Isopropyltoluene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,3-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,4-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:42	BP	474889
n-Butylbenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,2-Dichlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,2-Dibromo-3-Chloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Hexachlorobutadiene	SW8260B	1	1.4	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,2,4-Trichlorobenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Naphthalene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,2,3-Trichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:42	BP	474889
2-Butanone	SW8260B	1	2.3	10.0	ND		ug/Kg	05/20/23	20:42	BP	474889
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**103**		%	05/20/23	20:42	BP	474889
(S) Toluene-d8	SW8260B		55.2 - 133		**104**		%	05/20/23	20:42	BP	474889
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**99.7**		%	05/20/23	20:42	BP	474889

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12 (14-15)	**Lab Sample ID:**	2305105-011A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 11:08		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	8:00	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12 (14-15)	**Lab Sample ID:**	2305105-011A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 11:08		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/17/23 7:15:00PM
Prep Batch ID:	1151067	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/18/23	13:30	BJAY	474773

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12 (14-15)	**Lab Sample ID:**	2305105-011A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 11:08		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/17/23 7:00:00PM
Prep Batch ID:	1151065	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:16	AT	474846
Arsenic	SW6010B	1	0.15	1.30	ND		mg/Kg	05/18/23	20:16	AT	474846
Barium	SW6010B	1	0.055	5.00	**42.3**		mg/Kg	05/18/23	20:16	AT	474846
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/18/23	20:16	AT	474846
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/18/23	20:16	AT	474846
Chromium	SW6010B	1	0.075	5.00	**14.7**		mg/Kg	05/18/23	20:16	AT	474846
Cobalt	SW6010B	1	0.070	5.00	ND		mg/Kg	05/18/23	20:16	AT	474846
Copper	SW6010B	1	0.20	5.00	**5.00**		mg/Kg	05/18/23	20:16	AT	474846
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/18/23	20:16	AT	474846
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:16	AT	474846
Nickel	SW6010B	1	0.50	5.00	ND		mg/Kg	05/18/23	20:16	AT	474846
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/18/23	20:16	AT	474846
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/18/23	20:16	AT	474846
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:16	AT	474846
Vanadium	SW6010B	1	0.10	5.00	**21.1**		mg/Kg	05/18/23	20:16	AT	474846
Zinc	SW6010B	1	0.30	5.00	**18.8**		mg/Kg	05/18/23	20:16	AT	474846

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13-5	**Lab Sample ID:**	2305105-014A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:10		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151158	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	13:20	PH	474858

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13-5	**Lab Sample ID:**	2305105-014A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:10		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/16/23	12:20:00PM
Prep Batch ID:	1150991	**Prep Analyst:**	AJNG	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/17/23	13:34	BJAY	474739

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13-5	**Lab Sample ID:**	2305105-014A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:10		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/16/23 12:15:00PM
Prep Batch ID:	1150990	**Prep Analyst:**	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/16/23	20:44	AT	474758
Arsenic	SW6010B	1	0.15	1.30	ND		mg/Kg	05/16/23	20:44	AT	474758
Barium	SW6010B	1	0.055	5.00	**61.5**		mg/Kg	05/16/23	20:44	AT	474758
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/16/23	20:44	AT	474758
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/16/23	20:44	AT	474758
Chromium	SW6010B	1	0.075	5.00	**8.30**		mg/Kg	05/16/23	20:44	AT	474758
Cobalt	SW6010B	1	0.070	5.00	**5.50**		mg/Kg	05/16/23	20:44	AT	474758
Copper	SW6010B	1	0.20	5.00	**6.85**		mg/Kg	05/16/23	20:44	AT	474758
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/16/23	20:44	AT	474758
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/16/23	20:44	AT	474758
Nickel	SW6010B	1	0.50	5.00	**5.15**		mg/Kg	05/16/23	20:44	AT	474758
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/16/23	20:44	AT	474758
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/16/23	20:44	AT	474758
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/16/23	20:44	AT	474758
Vanadium	SW6010B	1	0.10	5.00	**26.3**		mg/Kg	05/16/23	20:44	AT	474758
Zinc	SW6010B	1	0.30	5.00	**26.9**		mg/Kg	05/16/23	20:44	AT	474758

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13-5	**Lab Sample ID:**	2305105-014A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:10		
SDG:			

Prep Method:	3546_PCB	**Prep Batch Date/Time:**	5/16/23 9:41:00AM
Prep Batch ID:	1150974	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Aroclor1016	SW8082A	1	35.0	100	ND		ug/Kg	05/16/23	12:36	AK	474707
Aroclor1221	SW8082A	1	5.00	100	ND		ug/Kg	05/16/23	12:36	AK	474707
Aroclor1232	SW8082A	1	17.0	100	ND		ug/Kg	05/16/23	12:36	AK	474707
Aroclor1242	SW8082A	1	3.00	100	ND		ug/Kg	05/16/23	12:36	AK	474707
Aroclor1248	SW8082A	1	2.00	100	ND		ug/Kg	05/16/23	12:36	AK	474707
Aroclor1254	SW8082A	1	14.0	100	ND		ug/Kg	05/16/23	12:36	AK	474707
Aroclor1260	SW8082A	1	24.0	100	ND		ug/Kg	05/16/23	12:36	AK	474707
			Acceptance Limits								
TCMX (S)	SW8082A		48 - 125		**112**		%	05/16/23	12:36	AK	474707
DCBP (S)	SW8082A		48 - 135		**108**		%	05/16/23	12:36	AK	474707

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13 (9-10)	**Lab Sample ID:**	2305105-015A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:15		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/20/23 10:17:00AM
Prep Batch ID:	1151171	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
N-Nitrosodimethylamine	SW8270C	1	46.9	720	ND		ug/Kg	05/21/23	22:13	MT	474904
Phenol	SW8270C	1	43.8	288	ND		ug/Kg	05/21/23	22:13	MT	474904
Bis(2-chloroethyl)ether	SW8270C	1	13.3	144	ND		ug/Kg	05/21/23	22:13	MT	474904
2-Chlorophenol	SW8270C	1	47.7	288	ND		ug/Kg	05/21/23	22:13	MT	474904
1,3-Dichlorobenzene	SW8270C	1	13.1	144	ND		ug/Kg	05/21/23	22:13	MT	474904
1,4-Dichlorobenzene	SW8270C	1	14.6	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Benzyl Alcohol	SW8270C	1	20.5	288	ND		ug/Kg	05/21/23	22:13	MT	474904
1,2-Dichlorobenzene	SW8270C	1	13.5	144	ND		ug/Kg	05/21/23	22:13	MT	474904
2-Methylphenol (o-Cresol)	SW8270C	1	29.3	288	ND		ug/Kg	05/21/23	22:13	MT	474904
N-Methyl-2-Pyrrolidone (NMP)	SW8270C	1	68.0	720	ND		ug/Kg	05/21/23	22:13	MT	474904
3-/4-Methylphenol (p-/m-Cresol)	SW8270C	1	31.3	288	ND		ug/Kg	05/21/23	22:13	MT	474904
N-nitroso-di-n-propylamine	SW8270C	1	13.2	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Hexachloroethane	SW8270C	1	17.1	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Nitrobenzene	SW8270C	1	12.8	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Isophorone	SW8270C	1	12.2	144	ND		ug/Kg	05/21/23	22:13	MT	474904
2-Nitrophenol	SW8270C	1	25.4	288	ND		ug/Kg	05/21/23	22:13	MT	474904
2,4-Dimethylphenol	SW8270C	1	22.8	288	ND		ug/Kg	05/21/23	22:13	MT	474904
Benzoic Acid	SW8270C	1	41.7	288	ND		ug/Kg	05/21/23	22:13	MT	474904
Bis(2-Chloroethoxy)methane	SW8270C	1	9.79	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Bis(2-chloroisopropyl)ether	SW8270C	1	12.6	144	ND		ug/Kg	05/21/23	22:13	MT	474904
2,4-Dichlorophenol	SW8270C	1	39.3	288	ND		ug/Kg	05/21/23	22:13	MT	474904
1,2,4-Trichlorobenzene	SW8270C	1	11.8	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Naphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/21/23	22:13	MT	474904
2,6-Dichlorophenol	SW8270C	1	35.8	288	ND		ug/Kg	05/21/23	22:13	MT	474904
Hexachloro-1,3-butadiene	SW8270C	1	8.34	144	ND		ug/Kg	05/21/23	22:13	MT	474904
4-Chloro-3-methylphenol	SW8270C	1	33.8	288	ND		ug/Kg	05/21/23	22:13	MT	474904
2-Methylnaphthalene	SW8270C	1	10.4	144	ND		ug/Kg	05/21/23	22:13	MT	474904
1-Methylnaphthalene	SW8270C	1	12.2	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Hexachlorocyclopentadiene	SW8270C	1	12.9	144	ND		ug/Kg	05/21/23	22:13	MT	474904
2,4,6-Trichlorophenol	SW8270C	1	35.9	288	ND		ug/Kg	05/21/23	22:13	MT	474904
2,4,5-Trichlorophenol	SW8270C	1	33.4	288	ND		ug/Kg	05/21/23	22:13	MT	474904
2-Chloronaphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/21/23	22:13	MT	474904
1,4-Dinitrobenzene	SW8270C	1	10.3	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Dimethyl phthalate	SW8270C	1	14.2	720	ND		ug/Kg	05/21/23	22:13	MT	474904
1,3-Dinitrobenzene	SW8270C	1	10.4	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Acenaphthylene	SW8270C	1	8.28	144	ND		ug/Kg	05/21/23	22:13	MT	474904
2,6-Dinitrotoluene	SW8270C	1	11.3	144	ND		ug/Kg	05/21/23	22:13	MT	474904
1,2-Dinitrobenzene	SW8270C	1	15.8	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Acenaphthene	SW8270C	1	10.7	144	ND		ug/Kg	05/21/23	22:13	MT	474904

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13 (9-10)	**Lab Sample ID:**	2305105-015A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:15		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/20/23 10:17:00AM
Prep Batch ID:	1151171	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2,4-Dinitrophenol	SW8270C	1	77.6	720	ND		ug/Kg	05/21/23	22:13	MT	474904
4-Nitrophenol	SW8270C	1	54.7	720	ND		ug/Kg	05/21/23	22:13	MT	474904
Dibenzofuran	SW8270C	1	11.2	144	ND		ug/Kg	05/21/23	22:13	MT	474904
2,4-Dinitrotoluene	SW8270C	1	12.1	144	ND		ug/Kg	05/21/23	22:13	MT	474904
2,3,5,6-Tetrachlorophenol	SW8270C	1	27.6	288	ND		ug/Kg	05/21/23	22:13	MT	474904
2,3,4,6-Tetrachlorophenol	SW8270C	1	31.5	288	ND		ug/Kg	05/21/23	22:13	MT	474904
Diethylphthalate	SW8270C	1	13.6	720	ND		ug/Kg	05/21/23	22:13	MT	474904
Fluorene	SW8270C	1	10.3	144	ND		ug/Kg	05/21/23	22:13	MT	474904
4-Chlorophenyl-phenylether	SW8270C	1	9.32	144	ND		ug/Kg	05/21/23	22:13	MT	474904
4,6-Dinitro-2-methylphenol	SW8270C	1	13.4	288	ND		ug/Kg	05/21/23	22:13	MT	474904
Diphenylamine	SW8270C	1	13.0	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Azobenzene	SW8270C	1	114	144	ND		ug/Kg	05/21/23	22:13	MT	474904
4-Bromophenyl-phenylether	SW8270C	1	8.23	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Hexachlorobenzene	SW8270C	1	8.66	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Pentachlorophenol	SW8270C	1	25.0	288	ND		ug/Kg	05/21/23	22:13	MT	474904
Phenanthrene	SW8270C	1	9.32	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Anthracene	SW8270C	1	8.91	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Carbazole	SW8270C	1	10.7	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Di-n-butylphthalate	SW8270C	1	13.5	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Fluoranthene	SW8270C	1	10.0	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Benzidine	SW8270C	1	147	147	ND		ug/Kg	05/21/23	22:13	MT	474904
Pyrene	SW8270C	1	12.0	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Butylbenzylphthalate	SW8270C	1	21.0	720	ND		ug/Kg	05/21/23	22:13	MT	474904
Benzo(a)anthracene	SW8270C	1	9.80	144	ND		ug/Kg	05/21/23	22:13	MT	474904
3,3-Dichlorobenzidine	SW8270C	1	118	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Chrysene	SW8270C	1	15.2	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Bis(2-Ethylhexyl)phthalate	SW8270C	1	15.3	720	ND		ug/Kg	05/21/23	22:13	MT	474904
Di-n-Octylphthalate	SW8270C	1	12.3	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Benzo(b)fluorathene	SW8270C	1	12.0	144	ND		ug/Kg	05/21/23	22:13	MT	474904
benzo(k)fluorathene	SW8270C	1	8.16	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Benzo(a)pyrene	SW8270C	1	9.80	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Indeno(1,2,3-c,d)pyrene	SW8270C	1	13.8	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Dibenzo(a,h)anthracene	SW8270C	1	12.7	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Benzo(g,h,i)perylene	SW8270C	1	16.7	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Pyridine	SW8270C	1	43.8	720	ND		ug/Kg	05/21/23	22:13	MT	474904
			Acceptance Limits								
2-Fluorophenol (S)	SW8270C		25 - 121		**54.7**		%	05/21/23	22:13	MT	474904
Phenol-d6 (S)	SW8270C		24 - 113		**57.6**		%	05/21/23	22:13	MT	474904
2,4,6-Tribromophenol (S)	SW8270C		19 - 122		**56.8**		%	05/21/23	22:13	MT	474904

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13 (9-10)	**Lab Sample ID:**	2305105-015A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:15		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/20/23 10:17:00AM
Prep Batch ID:	1151171	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2-Fluorobiphenyl (S)	SW8270C		45 - 143		**56.3**		%	05/21/23	22:13	MT	474904
Nitrobenzene-d5 (S)	SW8270C		23 - 120		**52.4**		%	05/21/23	22:13	MT	474904
p-Terphenyl-d14 (S)	SW8270C		18 - 137		**74.7**		%	05/21/23	22:13	MT	474904

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13 (9-10)	**Lab Sample ID:**	2305105-015A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:15		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/20/23 11:00:00AM
Prep Batch ID:	1151199	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	1.2	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Chloromethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Vinyl Chloride	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Bromomethane	SW8260B	1	2.7	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Chloroethane	SW8260B	1	3.0	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Trichlorofluoromethane	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,1-Dichloroethene	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Freon 113	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Methylene Chloride	SW8260B	1	7.1	10	ND		ug/Kg	05/20/23	21:17	BP	474889
trans-1,2-Dichloroethene	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	21:17	BP	474889
MTBE	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	21:17	BP	474889
TBA	SW8260B	1	12	50	ND		ug/Kg	05/20/23	21:17	BP	474889
Diisopropyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,1-Dichloroethane	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Ethyl tert-Butyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	21:17	BP	474889
cis-1,2-Dichloroethene	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	21:17	BP	474889
2,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Bromochloromethane	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Chloroform	SW8260B	1	2.4	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Carbon Tetrachloride	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,1,1-Trichloroethane	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,1-Dichloropropene	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Benzene	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	21:17	BP	474889
TAME	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,2-Dichloroethane	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Trichloroethene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Dibromomethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Bromodichloromethane	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	21:17	BP	474889
cis-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Toluene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Tetrachloroethene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:17	BP	474889
trans-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,1,2-Trichloroethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Dibromochloromethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,3-Dichloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,2-Dibromoethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Chlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Ethylbenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:17	BP	474889

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13 (9-10)	**Lab Sample ID:**	2305105-015A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:15		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/20/23 11:00:00AM
Prep Batch ID:	1151199	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	21:17	BP	474889
m,p-Xylene	SW8260B	1	3.2	10	ND		ug/Kg	05/20/23	21:17	BP	474889
o-Xylene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Styrene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Bromoform	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Isopropyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:17	BP	474889
n-Propylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Bromobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,1,2,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	21:17	BP	474889
2-Chlorotoluene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,3,5-Trimethylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,2,3-Trichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	21:17	BP	474889
4-Chlorotoluene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:17	BP	474889
tert-Butylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,2,4-Trimethylbenzene	SW8260B	1	1.4	10	ND		ug/Kg	05/20/23	21:17	BP	474889
sec-Butyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:17	BP	474889
p-Isopropyltoluene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,3-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,4-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:17	BP	474889
n-Butylbenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,2-Dichlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,2-Dibromo-3-Chloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Hexachlorobutadiene	SW8260B	1	1.4	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,2,4-Trichlorobenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Naphthalene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,2,3-Trichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:17	BP	474889
2-Butanone	SW8260B	1	2.3	10.0	ND		ug/Kg	05/20/23	21:17	BP	474889
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**128**		%	05/20/23	21:17	BP	474889
(S) Toluene-d8	SW8260B		55.2 - 133		**104**		%	05/20/23	21:17	BP	474889
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**100**		%	05/20/23	21:17	BP	474889

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13 (14-15)	**Lab Sample ID:**	2305105-016A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:17		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	8:21	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13 (14-15)	**Lab Sample ID:**	2305105-016A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:17		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/17/23 7:15:00PM
Prep Batch ID:	1151067	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/18/23	13:32	BJAY	474773

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13 (14-15)	**Lab Sample ID:**	2305105-016A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:17		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/17/23 7:00:00PM
Prep Batch ID:	1151065	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:17	AT	474846
Arsenic	SW6010B	1	0.15	1.30	ND		mg/Kg	05/18/23	20:17	AT	474846
Barium	SW6010B	1	0.055	5.00	**45.5**		mg/Kg	05/18/23	20:17	AT	474846
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/18/23	20:17	AT	474846
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/18/23	20:17	AT	474846
Chromium	SW6010B	1	0.075	5.00	**6.15**		mg/Kg	05/18/23	20:17	AT	474846
Cobalt	SW6010B	1	0.070	5.00	ND		mg/Kg	05/18/23	20:17	AT	474846
Copper	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:17	AT	474846
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/18/23	20:17	AT	474846
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:17	AT	474846
Nickel	SW6010B	1	0.50	5.00	ND		mg/Kg	05/18/23	20:17	AT	474846
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/18/23	20:17	AT	474846
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/18/23	20:17	AT	474846
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:17	AT	474846
Vanadium	SW6010B	1	0.10	5.00	**19.1**		mg/Kg	05/18/23	20:17	AT	474846
Zinc	SW6010B	1	0.30	5.00	**19.8**		mg/Kg	05/18/23	20:17	AT	474846

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13 (29-30)	**Lab Sample ID:**	2305105-019A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:24		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/20/23 10:17:00AM
Prep Batch ID:	1151171	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
N-Nitrosodimethylamine	SW8270C	1	46.9	720	ND		ug/Kg	05/21/23	22:42	MT	474904
Phenol	SW8270C	1	43.8	288	ND		ug/Kg	05/21/23	22:42	MT	474904
Bis(2-chloroethyl)ether	SW8270C	1	13.3	144	ND		ug/Kg	05/21/23	22:42	MT	474904
2-Chlorophenol	SW8270C	1	47.7	288	ND		ug/Kg	05/21/23	22:42	MT	474904
1,3-Dichlorobenzene	SW8270C	1	13.1	144	ND		ug/Kg	05/21/23	22:42	MT	474904
1,4-Dichlorobenzene	SW8270C	1	14.6	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Benzyl Alcohol	SW8270C	1	20.5	288	ND		ug/Kg	05/21/23	22:42	MT	474904
1,2-Dichlorobenzene	SW8270C	1	13.5	144	ND		ug/Kg	05/21/23	22:42	MT	474904
2-Methylphenol (o-Cresol)	SW8270C	1	29.3	288	ND		ug/Kg	05/21/23	22:42	MT	474904
N-Methyl-2-Pyrrolidone (NMP)	SW8270C	1	68.0	720	ND		ug/Kg	05/21/23	22:42	MT	474904
3-/4-Methylphenol (p-/m-Cresol)	SW8270C	1	31.3	288	ND		ug/Kg	05/21/23	22:42	MT	474904
N-nitroso-di-n-propylamine	SW8270C	1	13.2	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Hexachloroethane	SW8270C	1	17.1	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Nitrobenzene	SW8270C	1	12.8	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Isophorone	SW8270C	1	12.2	144	ND		ug/Kg	05/21/23	22:42	MT	474904
2-Nitrophenol	SW8270C	1	25.4	288	ND		ug/Kg	05/21/23	22:42	MT	474904
2,4-Dimethylphenol	SW8270C	1	22.8	288	ND		ug/Kg	05/21/23	22:42	MT	474904
Benzoic Acid	SW8270C	1	41.7	288	ND		ug/Kg	05/21/23	22:42	MT	474904
Bis(2-Chloroethoxy)methane	SW8270C	1	9.79	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Bis(2-chloroisopropyl)ether	SW8270C	1	12.6	144	ND		ug/Kg	05/21/23	22:42	MT	474904
2,4-Dichlorophenol	SW8270C	1	39.3	288	ND		ug/Kg	05/21/23	22:42	MT	474904
1,2,4-Trichlorobenzene	SW8270C	1	11.8	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Naphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/21/23	22:42	MT	474904
2,6-Dichlorophenol	SW8270C	1	35.8	288	ND		ug/Kg	05/21/23	22:42	MT	474904
Hexachloro-1,3-butadiene	SW8270C	1	8.34	144	ND		ug/Kg	05/21/23	22:42	MT	474904
4-Chloro-3-methylphenol	SW8270C	1	33.8	288	ND		ug/Kg	05/21/23	22:42	MT	474904
2-Methylnaphthalene	SW8270C	1	10.4	144	ND		ug/Kg	05/21/23	22:42	MT	474904
1-Methylnaphthalene	SW8270C	1	12.2	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Hexachlorocyclopentadiene	SW8270C	1	12.9	144	ND		ug/Kg	05/21/23	22:42	MT	474904
2,4,6-Trichlorophenol	SW8270C	1	35.9	288	ND		ug/Kg	05/21/23	22:42	MT	474904
2,4,5-Trichlorophenol	SW8270C	1	33.4	288	ND		ug/Kg	05/21/23	22:42	MT	474904
2-Chloronaphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/21/23	22:42	MT	474904
1,4-Dinitrobenzene	SW8270C	1	10.3	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Dimethyl phthalate	SW8270C	1	14.2	720	ND		ug/Kg	05/21/23	22:42	MT	474904
1,3-Dinitrobenzene	SW8270C	1	10.4	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Acenaphthylene	SW8270C	1	8.28	144	ND		ug/Kg	05/21/23	22:42	MT	474904
2,6-Dinitrotoluene	SW8270C	1	11.3	144	ND		ug/Kg	05/21/23	22:42	MT	474904
1,2-Dinitrobenzene	SW8270C	1	15.8	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Acenaphthene	SW8270C	1	10.7	144	ND		ug/Kg	05/21/23	22:42	MT	474904

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13 (29-30)	**Lab Sample ID:**	2305105-019A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:24		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/20/23 10:17:00AM
Prep Batch ID:	1151171	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2,4-Dinitrophenol	SW8270C	1	77.6	720	ND		ug/Kg	05/21/23	22:42	MT	474904
4-Nitrophenol	SW8270C	1	54.7	720	ND		ug/Kg	05/21/23	22:42	MT	474904
Dibenzofuran	SW8270C	1	11.2	144	ND		ug/Kg	05/21/23	22:42	MT	474904
2,4-Dinitrotoluene	SW8270C	1	12.1	144	ND		ug/Kg	05/21/23	22:42	MT	474904
2,3,5,6-Tetrachlorophenol	SW8270C	1	27.6	288	ND		ug/Kg	05/21/23	22:42	MT	474904
2,3,4,6-Tetrachlorophenol	SW8270C	1	31.5	288	ND		ug/Kg	05/21/23	22:42	MT	474904
Diethylphthalate	SW8270C	1	13.6	720	ND		ug/Kg	05/21/23	22:42	MT	474904
Fluorene	SW8270C	1	10.3	144	ND		ug/Kg	05/21/23	22:42	MT	474904
4-Chlorophenyl-phenylether	SW8270C	1	9.32	144	ND		ug/Kg	05/21/23	22:42	MT	474904
4,6-Dinitro-2-methylphenol	SW8270C	1	13.4	288	ND		ug/Kg	05/21/23	22:42	MT	474904
Diphenylamine	SW8270C	1	13.0	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Azobenzene	SW8270C	1	114	144	ND		ug/Kg	05/21/23	22:42	MT	474904
4-Bromophenyl-phenylether	SW8270C	1	8.23	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Hexachlorobenzene	SW8270C	1	8.66	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Pentachlorophenol	SW8270C	1	25.0	288	ND		ug/Kg	05/21/23	22:42	MT	474904
Phenanthrene	SW8270C	1	9.32	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Anthracene	SW8270C	1	8.91	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Carbazole	SW8270C	1	10.7	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Di-n-butylphthalate	SW8270C	1	13.5	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Fluoranthene	SW8270C	1	10.0	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Benzidine	SW8270C	1	147	147	ND		ug/Kg	05/21/23	22:42	MT	474904
Pyrene	SW8270C	1	12.0	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Butylbenzylphthalate	SW8270C	1	21.0	720	ND		ug/Kg	05/21/23	22:42	MT	474904
Benzo(a)anthracene	SW8270C	1	9.80	144	ND		ug/Kg	05/21/23	22:42	MT	474904
3,3-Dichlorobenzidine	SW8270C	1	118	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Chrysene	SW8270C	1	15.2	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Bis(2-Ethylhexyl)phthalate	SW8270C	1	15.3	720	ND		ug/Kg	05/21/23	22:42	MT	474904
Di-n-Octylphthalate	SW8270C	1	12.3	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Benzo(b)fluorathene	SW8270C	1	12.0	144	ND		ug/Kg	05/21/23	22:42	MT	474904
benzo(k)fluorathene	SW8270C	1	8.16	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Benzo(a)pyrene	SW8270C	1	9.80	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Indeno(1,2,3-c,d)pyrene	SW8270C	1	13.8	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Dibenzo(a,h)anthracene	SW8270C	1	12.7	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Benzo(g,h,i)perylene	SW8270C	1	16.7	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Pyridine	SW8270C	1	43.8	720	ND		ug/Kg	05/21/23	22:42	MT	474904
			Acceptance Limits								
2-Fluorophenol (S)	SW8270C		25 - 121		**66.9**		%	05/21/23	22:42	MT	474904
Phenol-d6 (S)	SW8270C		24 - 113		**70.2**		%	05/21/23	22:42	MT	474904
2,4,6-Tribromophenol (S)	SW8270C		19 - 122		**68.7**		%	05/21/23	22:42	MT	474904

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13 (29-30)	**Lab Sample ID:**	2305105-019A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:24		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/20/23	10:17:00AM
Prep Batch ID:	1151171	**Prep Analyst:**	NDUM	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2-Fluorobiphenyl (S)	SW8270C		45 - 143		**70.7**		%	05/21/23	22:42	MT	474904
Nitrobenzene-d5 (S)	SW8270C		23 - 120		**64.9**		%	05/21/23	22:42	MT	474904
p-Terphenyl-d14 (S)	SW8270C		18 - 137		**86.9**		%	05/21/23	22:42	MT	474904

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13 (29-30)	**Lab Sample ID:**	2305105-019A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:24		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/20/23 11:00:00AM
Prep Batch ID:	1151199	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	1.2	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Chloromethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Vinyl Chloride	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Bromomethane	SW8260B	1	2.7	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Chloroethane	SW8260B	1	3.0	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Trichlorofluoromethane	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,1-Dichloroethene	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Freon 113	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Methylene Chloride	SW8260B	1	7.1	10	ND		ug/Kg	05/20/23	21:52	BP	474889
trans-1,2-Dichloroethene	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	21:52	BP	474889
MTBE	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	21:52	BP	474889
TBA	SW8260B	1	12	50	ND		ug/Kg	05/20/23	21:52	BP	474889
Diisopropyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,1-Dichloroethane	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Ethyl tert-Butyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	21:52	BP	474889
cis-1,2-Dichloroethene	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	21:52	BP	474889
2,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Bromochloromethane	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Chloroform	SW8260B	1	2.4	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Carbon Tetrachloride	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,1,1-Trichloroethane	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,1-Dichloropropene	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Benzene	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	21:52	BP	474889
TAME	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,2-Dichloroethane	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Trichloroethene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Dibromomethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Bromodichloromethane	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	21:52	BP	474889
cis-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Toluene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Tetrachloroethene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:52	BP	474889
trans-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,1,2-Trichloroethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Dibromochloromethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,3-Dichloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,2-Dibromoethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Chlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Ethylbenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:52	BP	474889

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13 (29-30)	**Lab Sample ID:**	2305105-019A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:24		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/20/23 11:00:00AM
Prep Batch ID:	1151199	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	21:52	BP	474889
m,p-Xylene	SW8260B	1	3.2	10	ND		ug/Kg	05/20/23	21:52	BP	474889
o-Xylene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Styrene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Bromoform	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Isopropyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:52	BP	474889
n-Propylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Bromobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,1,2,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	21:52	BP	474889
2-Chlorotoluene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,3,5-Trimethylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,2,3-Trichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	21:52	BP	474889
4-Chlorotoluene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:52	BP	474889
tert-Butylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,2,4-Trimethylbenzene	SW8260B	1	1.4	10	ND		ug/Kg	05/20/23	21:52	BP	474889
sec-Butyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:52	BP	474889
p-Isopropyltoluene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,3-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,4-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:52	BP	474889
n-Butylbenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,2-Dichlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,2-Dibromo-3-Chloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Hexachlorobutadiene	SW8260B	1	1.4	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,2,4-Trichlorobenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Naphthalene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,2,3-Trichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:52	BP	474889
2-Butanone	SW8260B	1	2.3	10.0	ND		ug/Kg	05/20/23	21:52	BP	474889
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**125**		%	05/20/23	21:52	BP	474889
(S) Toluene-d8	SW8260B		55.2 - 133		**102**		%	05/20/23	21:52	BP	474889
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**101**		%	05/20/23	21:52	BP	474889

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12 (29-30.5)	**Lab Sample ID:**	2305105-022A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 11:20		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/20/23 10:17:00AM
Prep Batch ID:	1151171	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
N-Nitrosodimethylamine	SW8270C	1	46.9	720	ND		ug/Kg	05/21/23	23:12	MT	474904
Phenol	SW8270C	1	43.8	288	ND		ug/Kg	05/21/23	23:12	MT	474904
Bis(2-chloroethyl)ether	SW8270C	1	13.3	144	ND		ug/Kg	05/21/23	23:12	MT	474904
2-Chlorophenol	SW8270C	1	47.7	288	ND		ug/Kg	05/21/23	23:12	MT	474904
1,3-Dichlorobenzene	SW8270C	1	13.1	144	ND		ug/Kg	05/21/23	23:12	MT	474904
1,4-Dichlorobenzene	SW8270C	1	14.6	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Benzyl Alcohol	SW8270C	1	20.5	288	ND		ug/Kg	05/21/23	23:12	MT	474904
1,2-Dichlorobenzene	SW8270C	1	13.5	144	ND		ug/Kg	05/21/23	23:12	MT	474904
2-Methylphenol (o-Cresol)	SW8270C	1	29.3	288	ND		ug/Kg	05/21/23	23:12	MT	474904
N-Methyl-2-Pyrrolidone (NMP)	SW8270C	1	68.0	720	ND		ug/Kg	05/21/23	23:12	MT	474904
3-/4-Methylphenol (p-/m-Cresol)	SW8270C	1	31.3	288	ND		ug/Kg	05/21/23	23:12	MT	474904
N-nitroso-di-n-propylamine	SW8270C	1	13.2	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Hexachloroethane	SW8270C	1	17.1	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Nitrobenzene	SW8270C	1	12.8	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Isophorone	SW8270C	1	12.2	144	ND		ug/Kg	05/21/23	23:12	MT	474904
2-Nitrophenol	SW8270C	1	25.4	288	ND		ug/Kg	05/21/23	23:12	MT	474904
2,4-Dimethylphenol	SW8270C	1	22.8	288	ND		ug/Kg	05/21/23	23:12	MT	474904
Benzoic Acid	SW8270C	1	41.7	288	ND		ug/Kg	05/21/23	23:12	MT	474904
Bis(2-Chloroethoxy)methane	SW8270C	1	9.79	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Bis(2-chloroisopropyl)ether	SW8270C	1	12.6	144	ND		ug/Kg	05/21/23	23:12	MT	474904
2,4-Dichlorophenol	SW8270C	1	39.3	288	ND		ug/Kg	05/21/23	23:12	MT	474904
1,2,4-Trichlorobenzene	SW8270C	1	11.8	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Naphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/21/23	23:12	MT	474904
2,6-Dichlorophenol	SW8270C	1	35.8	288	ND		ug/Kg	05/21/23	23:12	MT	474904
Hexachloro-1,3-butadiene	SW8270C	1	8.34	144	ND		ug/Kg	05/21/23	23:12	MT	474904
4-Chloro-3-methylphenol	SW8270C	1	33.8	288	ND		ug/Kg	05/21/23	23:12	MT	474904
2-Methylnaphthalene	SW8270C	1	10.4	144	ND		ug/Kg	05/21/23	23:12	MT	474904
1-Methylnaphthalene	SW8270C	1	12.2	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Hexachlorocyclopentadiene	SW8270C	1	12.9	144	ND		ug/Kg	05/21/23	23:12	MT	474904
2,4,6-Trichlorophenol	SW8270C	1	35.9	288	ND		ug/Kg	05/21/23	23:12	MT	474904
2,4,5-Trichlorophenol	SW8270C	1	33.4	288	ND		ug/Kg	05/21/23	23:12	MT	474904
2-Chloronaphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/21/23	23:12	MT	474904
1,4-Dinitrobenzene	SW8270C	1	10.3	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Dimethyl phthalate	SW8270C	1	14.2	720	ND		ug/Kg	05/21/23	23:12	MT	474904
1,3-Dinitrobenzene	SW8270C	1	10.4	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Acenaphthylene	SW8270C	1	8.28	144	ND		ug/Kg	05/21/23	23:12	MT	474904
2,6-Dinitrotoluene	SW8270C	1	11.3	144	ND		ug/Kg	05/21/23	23:12	MT	474904
1,2-Dinitrobenzene	SW8270C	1	15.8	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Acenaphthene	SW8270C	1	10.7	144	ND		ug/Kg	05/21/23	23:12	MT	474904

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12 (29-30.5)	**Lab Sample ID:**	2305105-022A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 11:20		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/20/23 10:17:00AM
Prep Batch ID:	1151171	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2,4-Dinitrophenol	SW8270C	1	77.6	720	ND		ug/Kg	05/21/23	23:12	MT	474904
4-Nitrophenol	SW8270C	1	54.7	720	ND		ug/Kg	05/21/23	23:12	MT	474904
Dibenzofuran	SW8270C	1	11.2	144	ND		ug/Kg	05/21/23	23:12	MT	474904
2,4-Dinitrotoluene	SW8270C	1	12.1	144	ND		ug/Kg	05/21/23	23:12	MT	474904
2,3,5,6-Tetrachlorophenol	SW8270C	1	27.6	288	ND		ug/Kg	05/21/23	23:12	MT	474904
2,3,4,6-Tetrachlorophenol	SW8270C	1	31.5	288	ND		ug/Kg	05/21/23	23:12	MT	474904
Diethylphthalate	SW8270C	1	13.6	720	ND		ug/Kg	05/21/23	23:12	MT	474904
Fluorene	SW8270C	1	10.3	144	ND		ug/Kg	05/21/23	23:12	MT	474904
4-Chlorophenyl-phenylether	SW8270C	1	9.32	144	ND		ug/Kg	05/21/23	23:12	MT	474904
4,6-Dinitro-2-methylphenol	SW8270C	1	13.4	288	ND		ug/Kg	05/21/23	23:12	MT	474904
Diphenylamine	SW8270C	1	13.0	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Azobenzene	SW8270C	1	114	144	ND		ug/Kg	05/21/23	23:12	MT	474904
4-Bromophenyl-phenylether	SW8270C	1	8.23	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Hexachlorobenzene	SW8270C	1	8.66	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Pentachlorophenol	SW8270C	1	25.0	288	ND		ug/Kg	05/21/23	23:12	MT	474904
Phenanthrene	SW8270C	1	9.32	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Anthracene	SW8270C	1	8.91	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Carbazole	SW8270C	1	10.7	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Di-n-butylphthalate	SW8270C	1	13.5	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Fluoranthene	SW8270C	1	10.0	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Benzidine	SW8270C	1	147	147	ND		ug/Kg	05/21/23	23:12	MT	474904
Pyrene	SW8270C	1	12.0	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Butylbenzylphthalate	SW8270C	1	21.0	720	ND		ug/Kg	05/21/23	23:12	MT	474904
Benzo(a)anthracene	SW8270C	1	9.80	144	ND		ug/Kg	05/21/23	23:12	MT	474904
3,3-Dichlorobenzidine	SW8270C	1	118	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Chrysene	SW8270C	1	15.2	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Bis(2-Ethylhexyl)phthalate	SW8270C	1	15.3	720	ND		ug/Kg	05/21/23	23:12	MT	474904
Di-n-Octylphthalate	SW8270C	1	12.3	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Benzo(b)fluorathene	SW8270C	1	12.0	144	ND		ug/Kg	05/21/23	23:12	MT	474904
benzo(k)fluorathene	SW8270C	1	8.16	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Benzo(a)pyrene	SW8270C	1	9.80	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Indeno(1,2,3-c,d)pyrene	SW8270C	1	13.8	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Dibenzo(a,h)anthracene	SW8270C	1	12.7	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Benzo(g,h,i)perylene	SW8270C	1	16.7	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Pyridine	SW8270C	1	43.8	720	ND		ug/Kg	05/21/23	23:12	MT	474904
			Acceptance Limits								
2-Fluorophenol (S)	SW8270C		25 - 121		**72.3**		%	05/21/23	23:12	MT	474904
Phenol-d6 (S)	SW8270C		24 - 113		**77.5**		%	05/21/23	23:12	MT	474904
2,4,6-Tribromophenol (S)	SW8270C		19 - 122		**75.7**		%	05/21/23	23:12	MT	474904

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12 (29-30.5)	**Lab Sample ID:**	2305105-022A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 11:20		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/20/23	10:17:00AM
Prep Batch ID:	1151171	**Prep Analyst:**	NDUM	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2-Fluorobiphenyl (S)	SW8270C		45 - 143		**76.9**		%	05/21/23	23:12	MT	474904
Nitrobenzene-d5 (S)	SW8270C		23 - 120		**71.4**		%	05/21/23	23:12	MT	474904
p-Terphenyl-d14 (S)	SW8270C		18 - 137		**91.6**		%	05/21/23	23:12	MT	474904

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12 (29-30.5)	**Lab Sample ID:**	2305105-022A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 11:20		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/22/23 9:55:00AM
Prep Batch ID:	1151218	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	1.2	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Chloromethane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Vinyl Chloride	SW8260B	1	2.0	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Bromomethane	SW8260B	1	2.7	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Chloroethane	SW8260B	1	3.0	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Trichlorofluoromethane	SW8260B	1	2.1	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,1-Dichloroethene	SW8260B	1	2.0	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Freon 113	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Methylene Chloride	SW8260B	1	7.1	10	ND		ug/Kg	05/22/23	14:29	BP	474921
trans-1,2-Dichloroethene	SW8260B	1	2.1	10	ND		ug/Kg	05/22/23	14:29	BP	474921
MTBE	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	14:29	BP	474921
TBA	SW8260B	1	12	50	ND		ug/Kg	05/22/23	14:29	BP	474921
Diisopropyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,1-Dichloroethane	SW8260B	1	2.2	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Ethyl tert-Butyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	14:29	BP	474921
cis-1,2-Dichloroethene	SW8260B	1	2.2	10	ND		ug/Kg	05/22/23	14:29	BP	474921
2,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Bromochloromethane	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Chloroform	SW8260B	1	2.4	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Carbon Tetrachloride	SW8260B	1	2.1	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,1,1-Trichloroethane	SW8260B	1	2.1	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,1-Dichloropropene	SW8260B	1	2.0	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Benzene	SW8260B	1	2.2	10	ND		ug/Kg	05/22/23	14:29	BP	474921
TAME	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,2-Dichloroethane	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Trichloroethene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Dibromomethane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Bromodichloromethane	SW8260B	1	2.0	10	ND		ug/Kg	05/22/23	14:29	BP	474921
cis-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Toluene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Tetrachloroethene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	14:29	BP	474921
trans-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,1,2-Trichloroethane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Dibromochloromethane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,3-Dichloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,2-Dibromoethane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Chlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Ethylbenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	14:29	BP	474921

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12 (29-30.5)	**Lab Sample ID:**	2305105-022A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 11:20		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/22/23 9:55:00AM
Prep Batch ID:	1151218	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	14:29	BP	474921
m,p-Xylene	SW8260B	1	3.2	10	ND		ug/Kg	05/22/23	14:29	BP	474921
o-Xylene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Styrene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Bromoform	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Isopropyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	14:29	BP	474921
n-Propylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Bromobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,1,2,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	14:29	BP	474921
2-Chlorotoluene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,3,5-Trimethylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,2,3-Trichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	14:29	BP	474921
4-Chlorotoluene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	14:29	BP	474921
tert-Butylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,2,4-Trimethylbenzene	SW8260B	1	1.4	10	ND		ug/Kg	05/22/23	14:29	BP	474921
sec-Butyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	14:29	BP	474921
p-Isopropyltoluene	SW8260B	1	1.5	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,3-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,4-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	14:29	BP	474921
n-Butylbenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,2-Dichlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,2-Dibromo-3-Chloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Hexachlorobutadiene	SW8260B	1	1.4	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,2,4-Trichlorobenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Naphthalene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,2,3-Trichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	14:29	BP	474921
2-Butanone	SW8260B	1	2.3	10.0	ND		ug/Kg	05/22/23	14:29	BP	474921
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**116**		%	05/22/23	14:29	BP	474921
(S) Toluene-d8	SW8260B		55.2 - 133		**104**		%	05/22/23	14:29	BP	474921
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**98.7**		%	05/22/23	14:29	BP	474921

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305105	**Prep Method:**	3546_OCP	**Prep Date:**	05/13/23	**Prep Batch:**	1150929
Matrix:	Soil	**Analytical Method:**	SW8081B	**Analyzed Date:**	5/13/2023	**Analytical Batch:**	474648
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
alpha-BHC	0.25	2.0	ND	
gamma-BHC (Lindane)	0.71	2.0	ND	
beta-BHC	0.44	2.0	ND	
delta-BHC	0.65	2.0	ND	
Heptachlor	0.27	2.0	ND	
Aldrin	0.29	2.0	ND	
Heptachlor Epoxide	0.31	2.0	ND	
gamma-Chlordane	1.5	3.0	ND	
alpha-Chlordane	0.36	2.0	ND	
4,4'-DDE	0.61	2.0	1.97	
Endosulfan I	0.29	2.0	ND	
Dieldrin	0.25	2.0	ND	
Endrin	0.79	2.0	ND	
4,4'-DDD	0.64	2.0	ND	
Endosulfan II	0.34	2.0	ND	
4,4'-DDT	0.74	2.0	ND	
Endrin Aldehyde	0.51	2.0	ND	
Methoxychlor	2.6	6.0	ND	
Endosulfan Sulfate	0.51	2.0	ND	
Endrin Ketone	0.43	2.0	ND	
Chlordane, Technical	2.7	20	ND	
Toxaphene	22	50	ND	
Tetrachloro-M-Xylene (S)			89.6	
Decachlorobiphenyl (S)			92.9	

Work Order:	2305105	**Prep Method:**	3546_PCB	**Prep Date:**	05/16/23	**Prep Batch:**	1150974
Matrix:	Soil	**Analytical Method:**	SW8082A	**Analyzed Date:**	5/16/2023	**Analytical Batch:**	474707
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Aroclor1016	35.0	100	ND	
Aroclor1221	5.00	100	ND	
Aroclor1232	17.0	100	ND	
Aroclor1242	3.00	100	ND	
Aroclor1248	2.00	100	ND	
Aroclor1254	14.0	100	ND	
Aroclor1260	24.0	100	ND	
TCMX (S)			103	
DCBP (S)			87.0	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305105	**Prep Method:**	3050B	**Prep Date:**	05/16/23	**Prep Batch:**	1150990
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/16/2023	**Analytical Batch:**	474758
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Antimony	0.050	5.00	0.24	J
Arsenic	0.15	1.30	0.15	
Barium	0.055	5.00	ND	
Beryllium	0.055	5.00	ND	
Cadmium	0.10	0.750	ND	
Chromium	0.075	5.00	0.11	J
Cobalt	0.070	5.00	ND	
Copper	0.20	5.00	ND	
Lead	0.10	3.00	ND	
Molybdenum	0.050	5.00	0.18	J
Nickel	0.50	5.00	ND	
Selenium	0.35	1.10	ND	
Silver	0.15	0.500	ND	
Thallium	0.55	5.00	ND	
Vanadium	0.10	5.00	ND	
Zinc	0.30	5.00	1.4	J

Work Order:	2305105	**Prep Method:**	7471BP	**Prep Date:**	05/16/23	**Prep Batch:**	1150991
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/17/2023	**Analytical Batch:**	474739
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Mercury	0.083	0.50	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305105	**Prep Method:**	3050B	**Prep Date:**	05/17/23	**Prep Batch:**	1151065
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474846
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Antimony	0.050	5.00	0.065	
Arsenic	0.15	1.30	ND	
Barium	0.055	5.00	0.19	
Beryllium	0.055	5.00	ND	
Cadmium	0.10	0.750	ND	
Chromium	0.075	5.00	0.16	
Cobalt	0.070	5.00	ND	
Copper	0.20	5.00	ND	
Lead	0.10	3.00	ND	
Molybdenum	0.050	5.00	0.15	
Nickel	0.50	5.00	ND	
Selenium	0.35	1.10	ND	
Silver	0.15	0.500	ND	
Thallium	0.55	5.00	ND	
Vanadium	0.10	5.00	ND	
Zinc	0.30	5.00	ND	

Work Order:	2305105	**Prep Method:**	7471BP	**Prep Date:**	05/17/23	**Prep Batch:**	1151067
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474773
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Mercury	0.083	0.50	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305105	**Prep Method:**	3546_BNA	**Prep Date:**	05/19/23	**Prep Batch:**	1151137
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474887
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
N-Nitrosodimethylamine	46.9	720	ND	
Phenol	43.8	288	ND	
Bis(2-chloroethyl)ether	13.3	144	ND	
2-Chlorophenol	47.7	288	ND	
1,3-Dichlorobenzene	13.1	144	ND	
1,4-Dichlorobenzene	14.6	144	ND	
Benzyl Alcohol	20.5	288	ND	
1,2-Dichlorobenzene	13.5	144	ND	
2-Methylphenol (o-Cresol)	29.3	288	ND	
N-Methyl-2-Pyrrolidone (NMP)	68.0	720	ND	
	12.6	144	ND	
3-/4-Methylphenol (p-/m-Cresol)	31.3	288	ND	
N-nitroso-di-n-propylamine	13.2	144	ND	
Hexachloroethane	17.1	144	ND	
Nitrobenzene	12.8	144	ND	
Isophorone	12.2	144	ND	
2-Nitrophenol	25.4	288	ND	
2,4-Dimethylphenol	22.8	288	ND	
Benzoic Acid	41.7	288	ND	
Bis(2-Chloroethoxy)methane	9.79	144	ND	
Bis(2-chloroisopropyl)ether	12.6	144	ND	
2,4-Dichlorophenol	39.3	288	ND	
1,2,4-Trichlorobenzene	11.8	144	ND	
Naphthalene	10.6	144	ND	
2,6-Dichlorophenol	35.8	288	ND	
Hexachloro-1,3-butadiene	8.34	144	ND	
4-Chloro-3-methylphenol	33.8	288	ND	
2-Methylnaphthalene	10.4	144	ND	
1-Methylnaphthalene	12.2	144	ND	
Hexachlorocyclopentadiene	12.9	144	ND	
2,4,6-Trichlorophenol	35.9	288	ND	
2,4,5-Trichlorophenol	33.4	288	ND	
2-Chloronaphthalene	10.6	144	ND	
1,4-Dinitrobenzene	10.3	144	ND	
Dimethyl phthalate	14.2	720	ND	
1,3-Dinitrobenzene	10.4	144	ND	
Acenaphthylene	8.28	144	ND	
2,6-Dinitrotoluene	11.3	144	ND	
1,2-Dinitrobenzene	15.8	144	ND	
Acenaphthene	10.7	144	ND	
2,4-Dinitrophenol	77.6	720	ND	
4-Nitrophenol	54.7	720	ND	
Dibenzofuran	11.2	144	ND	
2,4-Dinitrotoluene	12.1	144	ND	
2,3,5,6-Tetrachlorophenol	27.6	288	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305105	**Prep Method:**	3546_BNA	**Prep Date:**	05/19/23	**Prep Batch:**	1151137
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474887
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
2,3,4,6-Tetrachlorophenol	31.5	288	ND	
Diethylphthalate	13.6	720	79.2	
Fluorene	10.3	144	ND	
4-Chlorophenyl-phenylether	9.32	144	ND	
4,6-Dinitro-2-methylphenol	13.4	288	ND	
Diphenylamine	13.0	144	ND	
Azobenzene	114	144	ND	
4-Bromophenyl-phenylether	8.23	144	ND	
Hexachlorobenzene	8.66	144	ND	
Pentachlorophenol	25.0	288	ND	
Phenanthrene	9.32	144	ND	
Anthracene	8.91	144	ND	
Carbazole	10.7	144	ND	
Di-n-butylphthalate	13.5	144	ND	
Fluoranthene	10.0	147	ND	
Benzidine	147	144	ND	
Pyrene	12.0	144	ND	
Butylbenzylphthalate	21.0	720	ND	
Benzo(a)anthracene	9.80	144	ND	
3,3-Dichlorobenzidine	118	144	ND	
Chrysene	15.2	144	ND	
Bis(2-Ethylhexyl)phthalate	15.3	720	ND	
Di-n-Octylphthalate	12.3	144	ND	
Benzo(b)fluorathene	12.0	144	ND	
benzo(k)fluorathene	8.16	144	ND	
Benzo(a)pyrene	9.80	144	ND	
Indeno(1,2,3-c,d)pyrene	13.8	144	ND	
Dibenzo(a,h)anthracene	12.7	144	ND	
Benzo(g,h,i)perylene	12.7	144	ND	
Pyridine	43.8	720	ND	
2-Fluorophenol (S)			88.1	
Phenol-d6 (S)			105	
2,4,6-Tribromophenol (S)			96.0	
2-Fluorobiphenyl (S)			80.2	
Nitrobenzene-d5 (S)			88.9	
p-Terphenyl-d14 (S)			91.7	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305105	**Prep Method:**	7199MP	**Prep Date:**	05/18/23	**Prep Batch:**	1151157
Matrix:	Soil	**Analytical Method:**	SW7199	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474857
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Hexavalent Chromium	3.1	10	ND		

Work Order:	2305105	**Prep Method:**	7199MP	**Prep Date:**	05/18/23	**Prep Batch:**	1151158
Matrix:	Soil	**Analytical Method:**	SW7199	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474858
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Hexavalent Chromium	3.1	10	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305105	**Prep Method:**	3546_BNA	**Prep Date:**	05/20/23	**Prep Batch:**	1151171
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/21/2023	**Analytical Batch:**	474904
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
N-Nitrosodimethylamine	46.9	720	ND		
Phenol	43.8	288	ND		
Bis(2-chloroethyl)ether	13.3	144	ND		
2-Chlorophenol	47.7	288	ND		
1,3-Dichlorobenzene	13.1	144	ND		
1,4-Dichlorobenzene	14.6	144	ND		
Benzyl Alcohol	20.5	288	ND		
1,2-Dichlorobenzene	13.5	144	ND		
2-Methylphenol (o-Cresol)	29.3	288	ND		
N-Methyl-2-Pyrrolidone (NMP)	68.0	720	ND		
	12.6	144	ND		
3-/4-Methylphenol (p-/m-Cresol)	31.3	288	ND		
N-nitroso-di-n-propylamine	13.2	144	ND		
Hexachloroethane	17.1	144	ND		
Nitrobenzene	12.8	144	ND		
Isophorone	12.2	144	ND		
2-Nitrophenol	25.4	288	ND		
2,4-Dimethylphenol	22.8	288	ND		
Benzoic Acid	41.7	288	ND		
Bis(2-Chloroethoxy)methane	9.79	144	ND		
Bis(2-chloroisopropyl)ether	12.6	144	ND		
2,4-Dichlorophenol	39.3	288	ND		
1,2,4-Trichlorobenzene	11.8	144	ND		
Naphthalene	10.6	144	ND		
2,6-Dichlorophenol	35.8	288	ND		
Hexachloro-1,3-butadiene	8.34	144	ND		
4-Chloro-3-methylphenol	33.8	288	ND		
2-Methylnaphthalene	10.4	144	ND		
1-Methylnaphthalene	12.2	144	ND		
Hexachlorocyclopentadiene	12.9	144	ND		
2,4,6-Trichlorophenol	35.9	288	ND		
2,4,5-Trichlorophenol	33.4	288	ND		
2-Chloronaphthalene	10.6	144	ND		
1,4-Dinitrobenzene	10.3	144	ND		
Dimethyl phthalate	14.2	720	ND		
1,3-Dinitrobenzene	10.4	144	ND		
Acenaphthylene	8.28	144	ND		
2,6-Dinitrotoluene	11.3	144	ND		
1,2-Dinitrobenzene	15.8	144	ND		
Acenaphthene	10.7	144	ND		
2,4-Dinitrophenol	77.6	720	ND		
4-Nitrophenol	54.7	720	ND		
Dibenzofuran	11.2	144	ND		
2,4-Dinitrotoluene	12.1	144	ND		
2,3,5,6-Tetrachlorophenol	27.6	288	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305105	**Prep Method:**	3546_BNA	**Prep Date:**	05/20/23	**Prep Batch:**	1151171
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/21/2023	**Analytical Batch:**	474904
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
2,3,4,6-Tetrachlorophenol	31.5	288	ND	
Diethylphthalate	13.6	720	ND	
Fluorene	10.3	144	ND	
4-Chlorophenyl-phenylether	9.32	144	ND	
4,6-Dinitro-2-methylphenol	13.4	288	ND	
Diphenylamine	13.0	144	ND	
Azobenzene	114	144	ND	
4-Bromophenyl-phenylether	8.23	144	ND	
Hexachlorobenzene	8.66	144	ND	
Pentachlorophenol	25.0	288	ND	
Phenanthrene	9.32	144	ND	
Anthracene	8.91	144	ND	
Carbazole	10.7	144	ND	
Di-n-butylphthalate	13.5	144	ND	
Fluoranthene	10.0	147	ND	
Benzidine	147	144	ND	
Pyrene	12.0	144	ND	
Butylbenzylphthalate	21.0	720	ND	
Benzo(a)anthracene	9.80	144	ND	
3,3-Dichlorobenzidine	118	144	ND	
Chrysene	15.2	144	ND	
Bis(2-Ethylhexyl)phthalate	15.3	720	ND	
Di-n-Octylphthalate	12.3	144	ND	
Benzo(b)fluorathene	12.0	144	ND	
benzo(k)fluorathene	8.16	144	ND	
Benzo(a)pyrene	9.80	144	ND	
Indeno(1,2,3-c,d)pyrene	13.8	144	ND	
Dibenzo(a,h)anthracene	12.7	144	ND	
Benzo(g,h,i)perylene	12.7	144	ND	
Pyridine	43.8	720	ND	
2-Fluorophenol (S)			96.9	
Phenol-d6 (S)			106	
2,4,6-Tribromophenol (S)			73.4	
2-Fluorobiphenyl (S)			97.9	
Nitrobenzene-d5 (S)			94.1	
p-Terphenyl-d14 (S)			106	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305105	**Prep Method:**	5035	**Prep Date:**	05/20/23	**Prep Batch:**	1151199
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/20/2023	**Analytical Batch:**	474889
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Dichlorodifluoromethane	1.2	10	ND	
Chloromethane	1.8	10	ND	
Vinyl Chloride	2.0	10	ND	
Bromomethane	2.7	10	ND	
Chloroethane	3.0	10	ND	
Trichlorofluoromethane	2.1	10	ND	
1,1-Dichloroethene	2.0	10	ND	
Freon 113	1.9	10	ND	
Methylene Chloride	7.1	10	ND	
trans-1,2-Dichloroethene	2.1	10	ND	
MTBE	2.3	10	ND	
TBA	12	50	ND	
Diisopropyl ether	2.3	10	ND	
1,1-Dichloroethane	2.2	10	ND	
Ethyl tert-Butyl ether	2.3	10	ND	
cis-1,2-Dichloroethene	2.2	10	ND	
2,2-Dichloropropane	1.9	10	ND	
Bromochloromethane	2.3	10	ND	
Chloroform	2.4	10	ND	
Carbon Tetrachloride	2.1	10	ND	
1,1,1-Trichloroethane	2.1	10	ND	
1,1-Dichloropropene	2.0	10	ND	
Benzene	2.2	10	ND	
TAME	2.3	10	ND	
1,2-Dichloroethane	2.3	10	ND	
Trichloroethene	1.8	10	ND	
Dibromomethane	1.8	10	ND	
1,2-Dichloropropane	1.9	10	ND	
Bromodichloromethane	2.0	10	ND	
cis-1,3-Dichloropropene	1.6	10	ND	
Toluene	1.8	10	ND	
Tetrachloroethene	1.7	10	ND	
trans-1,3-Dichloropropene	1.6	10	ND	
1,1,2-Trichloroethane	1.8	10	ND	
Dibromochloromethane	1.9	10	ND	
1,3-Dichloropropane	1.8	10	ND	
1,2-Dibromoethane	1.8	10	ND	
Chlorobenzene	1.8	10	ND	
Ethylbenzene	1.7	10	ND	
1,1,1,2-Tetrachloroethane	1.9	10	ND	
m,p-Xylene	3.2	10	ND	
o-Xylene	1.7	10	ND	
Styrene	1.6	10	ND	
Bromoform	1.7	10	ND	
Isopropyl Benzene	1.6	10	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305105	**Prep Method:**	5035	**Prep Date:**	05/20/23	**Prep Batch:**	1151199
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/20/2023	**Analytical Batch:**	474889
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
n-Propylbenzene	1.6	10	ND	
Bromobenzene	1.8	10	ND	
1,1,2,2-Tetrachloroethane	1.9	10	ND	
2-Chlorotoluene	1.8	10	ND	
1,3,5-Trimethylbenzene	1.6	10	ND	
1,2,3-Trichloropropane	1.9	10	ND	
4-Chlorotoluene	1.6	10	ND	
tert-Butylbenzene	1.6	10	ND	
1,2,4-Trimethylbenzene	1.4	10	ND	
sec-Butyl Benzene	1.6	10	ND	
p-Isopropyltoluene	1.5	10	ND	
1,3-Dichlorobenzene	1.7	10	ND	
1,4-Dichlorobenzene	1.7	10	ND	
n-Butylbenzene	1.5	10	ND	
1,2-Dichlorobenzene	1.8	10	ND	
1,2-Dibromo-3-Chloropropane	1.8	10	ND	
Hexachlorobutadiene	1.4	10	ND	
1,2,4-Trichlorobenzene	1.5	10	ND	
Naphthalene	1.7	10	2.5	
1,2,3-Trichlorobenzene	1.7	10	ND	
2-Butanone	2.3	10	ND	
(S) Dibromofluoromethane			115	
(S) Toluene-d8			103	
(S) 4-Bromofluorobenzene			102	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305105	**Prep Method:**	5035	**Prep Date:**	05/22/23	**Prep Batch:**	1151218
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/22/2023	**Analytical Batch:**	474921
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Dichlorodifluoromethane	1.2	10	ND	
Chloromethane	1.8	10	ND	
Vinyl Chloride	2.0	10	ND	
Bromomethane	2.7	10	ND	
Chloroethane	3.0	10	ND	
Trichlorofluoromethane	2.1	10	ND	
1,1-Dichloroethene	2.0	10	ND	
Freon 113	1.9	10	ND	
Methylene Chloride	7.1	10	ND	
trans-1,2-Dichloroethene	2.1	10	ND	
MTBE	2.3	10	ND	
TBA	12	50	ND	
Diisopropyl ether	2.3	10	ND	
1,1-Dichloroethane	2.2	10	ND	
Ethyl tert-Butyl ether	2.3	10	ND	
cis-1,2-Dichloroethene	2.2	10	ND	
2,2-Dichloropropane	1.9	10	ND	
Bromochloromethane	2.3	10	ND	
Chloroform	2.4	10	ND	
Carbon Tetrachloride	2.1	10	ND	
1,1,1-Trichloroethane	2.1	10	ND	
1,1-Dichloropropene	2.0	10	ND	
Benzene	2.2	10	ND	
TAME	2.3	10	ND	
1,2-Dichloroethane	2.3	10	ND	
Trichloroethene	1.8	10	ND	
Dibromomethane	1.8	10	ND	
1,2-Dichloropropane	1.9	10	ND	
Bromodichloromethane	2.0	10	ND	
cis-1,3-Dichloropropene	1.6	10	ND	
Toluene	1.8	10	ND	
Tetrachloroethene	1.7	10	ND	
trans-1,3-Dichloropropene	1.6	10	ND	
1,1,2-Trichloroethane	1.8	10	ND	
Dibromochloromethane	1.9	10	ND	
1,3-Dichloropropane	1.8	10	ND	
1,2-Dibromoethane	1.8	10	ND	
Chlorobenzene	1.8	10	ND	
Ethylbenzene	1.7	10	ND	
1,1,1,2-Tetrachloroethane	1.9	10	ND	
m,p-Xylene	3.2	10	ND	
o-Xylene	1.7	10	ND	
Styrene	1.6	10	ND	
Bromoform	1.7	10	ND	
Isopropyl Benzene	1.6	10	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305105	**Prep Method:**	5035	**Prep Date:**	05/22/23	**Prep Batch:**	1151218
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/22/2023	**Analytical Batch:**	474921
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
n-Propylbenzene	1.6	10	ND	
Bromobenzene	1.8	10	ND	
1,1,2,2-Tetrachloroethane	1.9	10	ND	
2-Chlorotoluene	1.8	10	ND	
1,3,5-Trimethylbenzene	1.6	10	ND	
1,2,3-Trichloropropane	1.9	10	ND	
4-Chlorotoluene	1.6	10	ND	
tert-Butylbenzene	1.6	10	ND	
1,2,4-Trimethylbenzene	1.4	10	ND	
sec-Butyl Benzene	1.6	10	ND	
p-Isopropyltoluene	1.5	10	ND	
1,3-Dichlorobenzene	1.7	10	ND	
1,4-Dichlorobenzene	1.7	10	ND	
n-Butylbenzene	1.5	10	ND	
1,2-Dichlorobenzene	1.8	10	ND	
1,2-Dibromo-3-Chloropropane	1.8	10	ND	
Hexachlorobutadiene	1.4	10	ND	
1,2,4-Trichlorobenzene	1.5	10	ND	
Naphthalene	1.7	10	2.5	
1,2,3-Trichlorobenzene	1.7	10	ND	
2-Butanone	2.3	10	ND	
(S) Dibromofluoromethane			114	
(S) Toluene-d8			103	
(S) 4-Bromofluorobenzene			98.7	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305105	**Prep Method:**	3546_OCP	**Prep Date:**	05/13/23	**Prep Batch:**	1150929
Matrix:	Soil	**Analytical Method:**	SW8081B	**Analyzed Date:**	5/13/2023	**Analytical Batch:**	474648
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
gamma-BHC (Lindane)	0.16	2.0	ND	40	81.7	85.6	4.78	25 - 135	30	
Heptachlor	0.11	2.0	ND	40	85.9	90.8	5.37	40 - 130	30	
Aldrin	0.20	2.0	ND	40	86.6	90.2	3.95	25 - 140	30	
delta-BHC	0.15	2.0	ND	40	86.3	91.6	5.91	60 - 130	30	
Heptachlor	0.19	2.0	ND	40	87.4	92.2	5.29	55 - 135	30	
4,4'-DDT	0.13	2.0	ND	40	88.1	94.2	6.86	45 - 140	30	
Tetrachloro-M-Xylene (S)				100	82.9	83.0		48 - 125		
Decachlorobiphenyl (S)				100	93.1	94.9		38 - 135		

Work Order:	2305105	**Prep Method:**	3546_PCB	**Prep Date:**	05/16/23	**Prep Batch:**	1150974
Matrix:	Soil	**Analytical Method:**	SW8082A	**Analyzed Date:**	5/16/2023	**Analytical Batch:**	474707
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Aroclor1016	53	100	ND	600	137	145	5.43	25 - 145	30	
Aroclor1260	36	100	ND	600	126	132	4.77	30 - 145	30	
TCMX (S)				0.10	125	124		48 - 125		
DCBP (S)				0.10	114	120		48 - 135		

Work Order:	2305105	**Prep Method:**	3050B	**Prep Date:**	05/16/23	**Prep Batch:**	1150990
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/17/2023	**Analytical Batch:**	474758
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony	0.050	5.00	0.24	50	103	103	0.000	80 - 120	30	
Arsenic	0.15	1.30	0.15	50	101	101	0.000	80 - 120	30	
Barium	0.055	5.00	ND	50	106	105	0.948	80 - 120	30	
Beryllium	0.055	5.00	ND	50	105	105	0.000	80 - 120	30	
Cadmium	0.10	0.750	ND	50	104	102	1.94	80 - 120	30	
Chromium	0.075	5.00	0.11	50	106	105	0.948	80 - 120	30	
Cobalt	0.070	5.00	ND	50	106	103	2.87	80 - 120	30	
Copper	0.20	5.00	ND	50	108	108	0.000	80 - 120	30	
Lead	0.10	3.00	ND	50	104	102	1.94	80 - 120	30	
Molybdenum	0.050	5.00	0.18	50	105	104	0.957	80 - 120	30	
Nickel	0.50	5.00	ND	50	105	104	0.957	80 - 120	30	
Selenium	0.22	5.00	ND	50	93.6	93.3	0.214	80 - 120	30	
Silver	0.15	5.00	ND	50	103	103	0.000	80 - 120	30	
Thallium	0.20	5.00	ND	50	104	104	0.000	80 - 120	30	
Vanadium	0.10	5.00	ND	50	106	105	0.948	80 - 120	30	
Zinc	0.30	5.00	1.4	50	103	103	0.000	80 - 120	30	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305105	**Prep Method:**	7471BP	**Prep Date:**	05/16/23	**Prep Batch:**	1150991
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/17/2023	**Analytical Batch:**	474739
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury	0.047	0.50	ND	1.25	114	104	9.52	80 - 120	20	

Work Order:	2305105	**Prep Method:**	3050B	**Prep Date:**	05/17/23	**Prep Batch:**	1151065
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474846
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony	0.050	5.00	0.065	50	99.7	100	0.200	80 - 120	30	
Arsenic	0.15	1.30	ND	50	98.4	98.7	0.406	80 - 120	30	
Barium	0.055	5.00	0.19	50	103	103	0.000	80 - 120	30	
Beryllium	0.055	5.00	ND	50	102	102	0.000	80 - 120	30	
Cadmium	0.10	0.750	ND	50	101	101	0.000	80 - 120	30	
Chromium	0.075	5.00	0.16	50	103	103	0.000	80 - 120	30	
Cobalt	0.070	5.00	ND	50	102	102	0.000	80 - 120	30	
Copper	0.20	5.00	ND	50	105	105	0.000	80 - 120	30	
Lead	0.10	3.00	ND	50	102	102	0.000	80 - 120	30	
Molybdenum	0.050	5.00	0.15	50	103	103	0.000	80 - 120	30	
Nickel	0.50	5.00	ND	50	102	102	0.000	80 - 120	30	
Selenium	0.22	5.00	ND	50	91.8	92.4	0.651	80 - 120	30	
Silver	0.15	5.00	ND	50	100	101	0.995	80 - 120	30	
Thallium	0.20	5.00	ND	50	99.7	101	1.20	80 - 120	30	
Vanadium	0.10	5.00	ND	50	103	103	0.000	80 - 120	30	
Zinc	0.30	5.00	ND	50	100	101	0.995	80 - 120	30	

Work Order:	2305105	**Prep Method:**	7471BP	**Prep Date:**	05/17/23	**Prep Batch:**	1151067
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474773
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury	0.047	0.50	ND	1.25	117	117	0.000	80 - 120	20	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305105	**Prep Method:**	3546_BNA	**Prep Date:**	05/19/23	**Prep Batch:**	1151137
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474887
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Phenol	43.8	288	ND	1200	92.5	94.2	1.79	40 - 100	30	
2-Chlorophenol	47.7	288	ND	1200	92.4	88.8	3.67	45 - 105	30	
Bis(2-chloroethyl)ether	14.6	144	ND	400	76.2	75.7	0.658	35 - 105	30	
N-nitroso-di-n-propylamine	13.2	144	ND	400	107	109	1.85	40 - 115	30	
1,2,4-Trichlorobenzene	11.8	144	ND	400	78.7	75.4	4.21	45 - 110	30	
1,4-Dichlorobenzene	33.8	288	ND	1200	103	95.8	7.53	45 - 110	30	
Acenaphthene	10.7	144	ND	400	93.0	86.2	7.53	45 - 110	30	
4-Nitrophenol	54.7	720	ND	1200	87.3	81.4	7.31	15 - 140	30	
2,4-Dinitrotoluene	12.1	144	ND	400	91.9	91.3	0.819	50 - 115	30	
N-Methyl-2-Pyrrolidone (NMP)	12.0	144	ND	1200	68.3	70.5	3.12	25 - 120	30	
Pyrene	12.0	144	ND	400	90.7	87.6	3.65	45 - 145	30	
2-Fluorophenol (S)				11100	86.8	84.7		25 - 121		
Phenol-d6 (S)				11100	95.7	98.5		24 - 113		
2,4,6-Tribromophenol (S)				11100	107	97.9		19 - 122		
2-Fluorobiphenyl (S)				5560	89.1	81.3		30 - 143		
Nitrobenzene-d5 (S)				5560	93.6	77.9		23 - 120		
p-Terphenyl-d14 (S)				5560	86.3	79.5		18 - 137		

Work Order:	2305105	**Prep Method:**	7199MP	**Prep Date:**	05/18/23	**Prep Batch:**	1151157
Matrix:	Soil	**Analytical Method:**	SW7199	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474857
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Hexavalent Chromium	3.1	10	ND	100	101	103	1.96	80 - 120	20	

Work Order:	2305105	**Prep Method:**	7199MP	**Prep Date:**	05/18/23	**Prep Batch:**	1151158
Matrix:	Soil	**Analytical Method:**	SW7199	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474858
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Hexavalent Chromium	3.1	10	ND	100	99.6	99.9	0.301	80 - 120	20	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305105	**Prep Method:**	3546_BNA	**Prep Date:**	05/20/23	**Prep Batch:**	1151171
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/21/2023	**Analytical Batch:**	474904
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Phenol	43.8	288	ND	1200	99.0	97.6	1.69	40 - 100	30	
2-Chlorophenol	47.7	288	ND	1200	100	98.6	1.68	45 - 105	30	
Bis(2-chloroethyl)ether	14.6	144	ND	400	91.7	90.5	1.37	35 - 105	30	
N-nitroso-di-n-propylamine	13.2	144	ND	400	93.9	98.1	4.17	40 - 115	30	
1,2,4-Trichlorobenzene	11.8	144	ND	400	103	102	0.244	45 - 110	30	
1,4-Dichlorobenzene	33.8	288	ND	1200	107	106	0.784	45 - 110	30	
Acenaphthene	10.7	144	ND	400	105	103	1.92	45 - 110	30	
4-Nitrophenol	54.7	720	ND	1200	114	111	2.96	15 - 140	30	
2,4-Dinitrotoluene	12.1	144	ND	400	89.5	106	16.6	50 - 115	30	
N-Methyl-2-Pyrrolidone (NMP)	12.0	144	ND	1200	117	114	2.90	25 - 120	30	
Pyrene	12.0	144	ND	400	112	111	0.224	45 - 145	30	
2-Fluorophenol (S)				11100	91.2	90.1		25 - 121		
Phenol-d6 (S)				11100	98.7	96.1		24 - 113		
2,4,6-Tribromophenol (S)				11100	111	121		19 - 122		
2-Fluorobiphenyl (S)				5560	105	102		30 - 143		
Nitrobenzene-d5 (S)				5560	102	101		23 - 120		
p-Terphenyl-d14 (S)				5560	112	109		18 - 137		

Work Order:	2305105	**Prep Method:**	5035	**Prep Date:**	05/20/23	**Prep Batch:**	1151199
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/20/2023	**Analytical Batch:**	474889
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
1,1-Dichloroethene	2.0	10	ND	50.0	101	97.1	4.44	53.7 - 139	30	
Benzene	2.2	10	ND	50.0	107	103	3.43	66.5 - 135	30	
Trichloroethene	1.8	10	ND	50.0	93.4	93.7	0.214	57.5 - 150	30	
Toluene	1.8	10	ND	50.0	101	96.7	4.05	56.8 - 134	30	
Chlorobenzene	1.8	10	ND	50.0	97.7	94.3	3.55	57.4 - 134	30	
(S) Dibromofluoromethane				50.0	106	103		59.8 - 148		
(S) Toluene-d8				50.0	103	99.5		55.2 - 133		
(S) 4-Bromofluorobenzene				50.0	111	108		55.8 - 141		

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305105	**Prep Method:**	5035	**Prep Date:**	05/22/23	**Prep Batch:**	1151218
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/22/2023	**Analytical Batch:**	474921
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
1,1-Dichloroethene	2.0	10	ND	50.0	113	113	0.000	53.7 - 139	30	
Benzene	2.2	10	ND	50.0	111	110	0.544	66.5 - 135	30	
Trichloroethene	1.8	10	ND	50.0	97.9	94.7	3.33	57.5 - 150	30	
Toluene	1.8	10	ND	50.0	102	98.9	2.99	56.8 - 134	30	
Chlorobenzene	1.8	10	ND	50.0	98.7	98.6	0.000	57.4 - 134	30	
(S) Dibromofluoromethane				50.0	113	110		59.8 - 148		
(S) Toluene-d8				50.0	104	103		55.2 - 133		
(S) 4-Bromofluorobenzene				50.0	108	109		55.8 - 141		

Torrent LABORATORY, INC.

MS/MSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305105	**Prep Method:**	3050B	**Prep Date:**	05/17/23	**Prep Batch:**	1151065
Matrix:	**Soil**	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474846
Spiked Sample:	2305105-003A						
Units:	mg/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony	0.050	5.00	ND	50	96.0	99.2	3.28	30.7 - 130	30	
Arsenic	0.15	1.30	ND	50	98.1	101	2.96	71.0 - 121	30	
Barium	0.055	5.00	55.5	50	40.0	37.0	2.01	70.2 - 130	30	S
Beryllium	0.055	5.00	ND	50	102	104	1.94	73.3 - 115	30	
Cadmium	0.10	0.750	ND	50	99.6	102	2.38	80.0 - 110	30	
Chromium	0.075	5.00	5.30	50	104	100	3.54	76.0 - 116	30	
Cobalt	0.070	5.00	ND	50	99.8	102	1.87	57.4 - 122	30	
Copper	0.20	5.00	ND	50	107	108	0.866	74.8 - 119	30	
Lead	0.10	3.00	ND	50	100	101	0.966	57.9 - 118	30	
Molybdenum	0.050	5.00	ND	50	103	105	1.92	62.9 - 123	30	
Nickel	0.50	5.00	ND	50	99.7	101	0.948	61.5 - 122	30	
Selenium	0.22	5.00	ND	50	92.9	94.9	2.13	62.0 - 111	30	
Silver	0.15	5.00	ND	50	103	105	1.92	75 - 125	30	
Thallium	0.20	5.00	ND	50	99.9	102	1.98	39.2 - 125	30	
Vanadium	0.10	5.00	14.2	50	104	101	2.30	65.8 - 122	30	
Zinc	0.30	5.00	17.6	50	89.8	86.8	2.43	59.9 - 122	30	

Work Order:	2305105	**Prep Method:**	7471BP	**Prep Date:**	05/17/23	**Prep Batch:**	1151067
Matrix:	**Soil**	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474773
Spiked Sample:	2305105-003A						
Units:	mg/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury	0.047	0.50	ND	1.25	79.6	73.1	8.60	80 - 120	20	S

Work Order:	2305105	**Prep Method:**	7199MP	**Prep Date:**	05/18/23	**Prep Batch:**	1151158
Matrix:	**Soil**	**Analytical Method:**	SW7199	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474858
Spiked Sample:	2305105-008A						
Units:	ug/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Hexavalent Chromium	3.1	10	249	100	96.3	93.7	0.581	75 - 125	20	

Laboratory Qualifiers and Definitions

DEFINITIONS:

Accuracy/Bias (% Recovery) - The closeness of agreement between an observed value and an accepted reference value.
Blank (Method/Preparation Blank) -MB/PB - An analyte-free matrix to which all reagents are added in the same volumes/proportions as used in sample processing. The method blank is used to document contamination resulting from the analytical process.
Duplicate - a field sample and/or laboratory QC sample prepared in duplicate following all of the same processes and procedures used on the original sample (sample duplicate, LCSD, MSD)
Laboratory Control Sample (LCS ad LCSD) - A known matrix spiked with compounds representative of the target analyte(s). This is used to document laboratory performance.
Matrix - the component or substrate that contains the analyte of interest (e.g., - groundwater, sediment, soil, waste water, etc)
Matrix Spike (MS/MSD) - Client sample spiked with identical concentrations of target analyte (s). The spiking occurs prior to the sample preparation and analysis. They are used to document the precision and bias of a method in a given sample matrix.
Method Detection Limit (MDL) - the minimum concentration of a substance that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero
Practical Quantitation Limit/Reporting Limit/Limit of Quantitation (PQL/RL/LOQ) - a laboratory determined value at 2 to 5 times above the MDL that can be reproduced in a manner that results in a 99% confidence level that the result is both accurate and precise. PQLs/RLs/LODs reflect all preparation factors and/or dilution factors that have been applied to the sample during the preparation and/or analytical processes.
Precision (%RPD) - The agreement among a set of replicate/duplicate measurements without regard to known value of the replicates
Surrogate (S) or (Surr) - An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. Surrogates are used in most organic analysis to demonstrate matrix compatibility with the chosen method of analysis
Tentatively Identified Compound (TIC) - A compound not contained within the analytical calibration standards but present in the GCMS library of defined compounds. When the library is searched for an unknown compound, it can frequently give a tentative identification to the compound based on retention time and primary and secondary ion match. TICs are reported as estimates and are candidates for further investigation.
Units: the unit of measure used to express the reported result - **mg/L** and ***mg/Kg*** (equivalent to PPM - parts per million in **liquid** and ***solid***), **ug/L** and ***ug/Kg*** (equivalent to PPB - parts per billion in **liquid** and ***solid***), **ug/m3**, ***mg/m3***, **ppbv** and ***ppmv*** (all units of measure for reporting concentrations in air), **%** (equivalent to 10000 ppm or 1,000,000 ppb), **ug/Wipe** (concentration found on the surface of a single Wipe usually taken over a 100cm2 surface)

LABORATORY QUALIFIERS

B - Indicates when the analyte is found in the associated method or preparation blank
D - Surrogate is not recoverable due to the necessary dilution of the sample
E - Indicates the reportable value is outside of the calibration range of the instrument but within the linear range of the instrument (unless otherwise noted) Values reported with an E qualifier should be considered as estimated.
H- Indicates that the recommended holding time for the analyte or compound has been exceeded
J- Indicates a value between the method MDL and PQL and that the reported concentration should be considered as estimated rather the quantitative
NA - Not Analyzed
N/A - Not Applicable
ND - Not Detected at a concentration greater than the PQL/RL or, if reported to the MDL, at greater than the MDL.
NR - Not recoverable - a matrix spike concentration is not recoverable due to a concentration within the original sample that is greater than four times the spike concentration added
R- The % RPD between a duplicate set of samples is outside of the absolute values established by laboratory control charts
S- Spike recovery is outside of established method and/or laboratory control limits. Further explanation of the use of this qualifier should be included within a case narrative
X -Used to indicate that a value based on pattern identification is within the pattern range but not typical of the pattern found in standards. Further explanation may or may not be provided within the sample footnote and/or the case narrative.

Sample Receipt Checklist

Client Name: Langan

Project Name: VERNON

Work Order No.: 2305105

Date and Time Received: 5/12/2023 10:20:00AM

Received By: Katherene Evans

Physically Logged By: Katherene Evans

Checklist Completed By: Katherene Evans

Carrier Name: FedEx

Chain of Custody (COC) Information

Chain of custody present?	Yes
Chain of custody signed when relinquished and received?	Yes
Chain of custody agrees with sample labels?	Yes
Custody seals intact on sample bottles?	Not Present

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Not Present
Shipping Container/Cooler In Good Condition?	Yes
Samples in proper container/bottle?	Yes
Samples containers intact?	Yes
Sufficient sample volume for indicated test?	Yes

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes			
Container/Temp Blank temperature in compliance?	Yes	Temperature:	2.0	°C
Water-VOA vials have zero headspace?	No VOA vials submitted			
Water-pH acceptable upon receipt?	N/A			

pH Checked by: na

pH Adjusted by: na

Comments:

Rec'd 2 liners not on CoC. Placed on hold

Torrent LABORATORY, INC.

Login Summary Report

Client ID: TL5493 Langan
Project Name: VERNON
Project # : 721040501
Report Due Date: 5/23/2023

QC Level: II
TAT Requested: 3 Day Std:3
Date Received: 5/12/2023
Time Received: 10:20 am

Comments:

Work Order # : ***2305105***

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
2305105-001A	B-2-5	05/08/23 8:03	Soil	11/04/23			PCBs_S_8082A Cr6_S_7199Mod Pest_S_8081OCP Hg_S_7471B Met_S_6010B CAM17	
2305105-001B	B-2-5	05/08/23 8:03	Soil	11/04/23			Hold Samples 1633 DRAFT_S	
Sample Note:	PFAs due 5/26							
2305105-002A	B-2 (9-10)	05/08/23 8:14	Soil	11/04/23			Hold Samples SVO_S_8270CFull VOC_S_8260B	
Sample Note:	SVOC, VOCs results due 5/23							
2305105-003A	B-2 (14-15)	05/08/23 8:20	Soil	11/04/23			Hold Samples Met_S_6010B CAM17 Cr6_S_7199Mod Hg_S_7471B	
Sample Note:	Additional request for Cr VI & CAM17 due on 5/19							
2305105-004A	B-2 (19-20)	05/08/23 8:25	Soil	11/04/23			Hold Samples	
2305105-005A	B-2 (24-25)	05/08/23 8:30	Soil	11/04/23			Hold Samples	
2305105-006A	B-2 (29-30)	05/08/23 8:32	Soil	11/04/23			Hold Samples SVO_S_8270CFull VOC_S_8260B	
2305105-007A	B-11-5	05/08/23 9:47	Soil	11/04/23			PCBs_S_8082A Cr6_S_7199Mod Pest_S_8081OCP Hg_S_7471B Met_S_6010B CAM17	
2305105-008A	B-11 (9-10)	05/08/23 9:50	Soil	11/04/23			Hold Samples Cr6_S_7199Mod Met_S_6010B CAM17 Hg_S_7471B	

Torrent LABORATORY, INC.

Login Summary Report

Client ID:	TL5493	Langan	**QC Level:**	II
Project Name:	VERNON		**TAT Requested:**	3 Day Std:3
Project # :	721040501		**Date Received:**	5/12/2023
Report Due Date:	5/23/2023		**Time Received:**	10:20 am

Comments:

Work Order # : ***2305105***

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
2305105-009A	B-12-5	05/08/23 10:55	Soil	11/04/23			PCBs_S_8082A Cr6_S_7199Mod Hg_S_7471B Met_S_6010B CAM17	
2305105-009B	B-12-5	05/08/23 10:55	Soil	11/04/23			Hold Samples 1633 DRAFT_S	
2305105-010A	B-12 (9-10)	05/08/23 10:59	Soil	11/04/23			Hold Samples SVO_S_8270CFull VOC_S_8260B	
2305105-011A	B-12 (14-15)	05/08/23 11:08	Soil	11/04/23			Hold Samples Met_S_6010B CAM17 Cr6_S_7199Mod Hg_S_7471B	
2305105-012A	B-12 (17.5-20)	05/08/23 11:12	Soil	11/04/23			Hold Samples	
2305105-013A	B-12 (24-25)	05/08/23 11:17	Soil	11/04/23			Hold Samples	
2305105-014A	B-13-5	05/08/23 12:10	Soil	11/04/23			PCBs_S_8082A Cr6_S_7199Mod Hg_S_7471B Met_S_6010B CAM17	
2305105-014B	B-13-5	05/08/23 12:10	Soil	11/04/23			Hold Samples 1633 DRAFT_S	
2305105-015A	B-13 (9-10)	05/08/23 12:15	Soil	11/04/23			Hold Samples SVO_S_8270CFull VOC_S_8260B	
2305105-016A	B-13 (14-15)	05/08/23 12:17	Soil	11/04/23			Hold Samples Met_S_6010B CAM17 Cr6_S_7199Mod Hg_S_7471B	
2305105-017A	B-13 (19-20)	05/08/23 12:20	Soil	11/04/23			Hold Samples	
2305105-018A	B-13 (24-25)	05/08/23 12:22	Soil	11/04/23			Hold Samples	

Login Summary Report

Client ID:	TL5493	Langan	**QC Level:**	II
Project Name:	VERNON		**TAT Requested:**	3 Day Std:3
Project # :	721040501		**Date Received:**	5/12/2023
Report Due Date:	5/23/2023		**Time Received:**	10:20 am

Comments:

Work Order # : ***2305105***

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
2305105-019A	B-13 (29-30)	05/08/23 12:24	Soil	11/04/23			Hold Samples SVO_S_8270CFull VOC_S_8260B	
2305105-020A	PFAs-DUP	05/08/23	Soil	11/04/23			Hold Samples	
2305105-021A	B-12 (15-17.5)	05/08/23	Soil	11/04/23			Hold Samples	
2305105-022A	B-12 (29-30.5)	05/08/23 11:20	Soil	11/04/23			Hold Samples VOC_S_8260B SVO_S_8270CFull	

Torrent LABORATORY, INC.

Torrent LABORATORY, INC.
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

Reset

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 2305105

Company Name: LANGAN ☐ Env. ☐ Non Env.
Address: 515 S. FLOWER ST, SUITE 1060
City: LA State: CA Zip Code: 90071
Telephone: 213 280 9703 Cell:
REPORT TO: N. CUTLER BILL TO:

Project #: 721045501 PO#:
Project Name: VERNON
Comments: HOLD ALL SAMPLES
SAMPLER: M. CHE
EMAIL: NCUTLER ; MCHE@LANGAN.COM

TURNAROUND TIME:
☐ 2 - 8 Hours ☐ 2 Work Days ☐ 5 Work Days
☐ Noon - Nxt Day ☑ 3 Work Days ☐ 7 Work Days
☐ 1 Work Day ☐ 4 Work Days ☐ 10 Work Days

SAMPLE TYPE:
☐ Drinking Water ☐ Storm Water ☐ Air ☐ Waste Water ☐ Wipe ☐ Ground Water ☐ Other ☐ Soil ☐ Product / Bulk

REPORT FORMAT:
☐ Level II - Std.
☐ DoD/DoE Level III
☐ DoD/DoE Level III
☐ Excel - EDD ☐ EDF
☐ Client Specific EDD

ANALYSIS REQUESTED

LAB ID	CANISTER I.D.	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	VOC 8260B	SVOC 8270 SIM	CAM 17 6010B						REMARKS
001		B-2-5	5/8/23 0803	Soil	2	Glass/ plastic	✓	✓	✓						HOLD
002		B-2 (9-10)	5/8/23 0814	Soil	1	Plastic liner	✓	✓	✓						
003		B-2 (14-15)	5/8/23 0820	Soil	1	Plastic liner	✓	✓	✓						
004		B-2 (19-20)	5/8/23 0825	Soil	1	Plastic liner	✓	✓	✓						
005		B-2 (24-25)	5/8/23 0830	Soil	1	Plastic liner	✓	✓	✓						
006		B-2 (29-30)	5/8/23 0832	Soil	1	Plastic liner	✓	✓	✓						
007		B-11-5	5/8/23 0947	Soil	1	Glass	✓	✓	✓						
008		B-11 (9-10)	5/8/23 0950	Soil	1	Plastic liner	✓	✓	✓						
009		B-12-5	5/8/23 1055	Soil	2	Plastic liner Glass	✓	✓	✓						
010		B-12 (9-10)	5/8/23 1059	Soil	1	Plastic liner	✓	✓	✓						

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	Melody Che	MELODY CHE	5/11/23	1600	Katie	Evans	5-12-23	1012
2	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:

Cooler Temperature 2.4#3 °C Samples Received on ice? Yes ☒ No ☐ Method of Shipment Fed EX

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page of

Torrent LABORATORY, INC.

Torrent LABORATORY, INC.
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

Reset

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 2305105

Company Name: LANGAN ☐ Env. ☐ Non Env.
Address: 515 S. FLOWER ST, SUITE 1060
City: LA State: CA Zip Code: 90071
Telephone: 213 280 9903 Cell:
REPORT TO: BILL TO:

Project #: 721040501 PO#:
Project Name: VERNON
Comments: HOLD SAMPLES FOR ANALYSIS
SAMPLER: M. CHE
EMAIL: NCUTLER AND MCHE@LANGAN.COM

TURNAROUND TIME:
☐ 2 - 8 Hours ☐ 2 Work Days ☐ 5 Work Days
☐ Noon - Nxt Day ☑ 3 Work Days ☐ 7 Work Days
☐ 1 Work Day ☐ 4 Work Days ☐ 10 Work Days

SAMPLE TYPE:
☐ Drinking Water ☐ Storm Water ☐ Air ☐ Waste Water ☐ Wipe ☐ Ground Water ☐ Other ☐ Soil ☐ Product / Bulk

REPORT FORMAT:
☐ Level II - Std.
☐ DoD/DoE Level III
☐ DoD/DoE Level III
☐ Excel - EDD ☐ EDF
☐ Client Specific EDD

ANALYSIS REQUESTED: VOC 8260B; SVOC 8270 SIM; CAM 17 6010B

LAB ID	CANISTER I.D.	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	REMARKS
011		B-12 (14-15)	5/8/23 1108	Soil	1	Plastic liner	HOLD
012		B-12 (17.5-20)	5/8/23 1112	Soil	1	plastic liner	
013		B-12 (24-25)	5/8/23 1117	Soil	1	plastic liner	
014		B-13 - 5	5/8/23 1210	Soil	2	Glass/ plastic	
015		B-13 (9-10)	5/8/23 1215	Soil	1	Plastic liner	
016		B-13 (14-15)	5/8/23 1217	Soil	1	Plastic liner	
017		B-13 (19-20)	MC ~~5/8/23 1217~~ 1220	Soil	1	Plastic liner	
018		B-13 (24-25)	5/8/23 1222	Soil	1	Plastic liner	
019		B-13 (29-30)	5/8/23 1224	Soil	1	Plastic liner	
020		PFAS-DUP	—	Soil	1	Plastic vial	

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	Melody Che	MELODY CHE	5/11/23	1600	Kathie	Evans	5-12-23	10:20
2	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:

Cooler Temperature _____ °C Samples Received on ice? Yes ☐ No ☐ Method of Shipment _____

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page of

Gmail Torrent Laboratory, Inc. <pm@torrentlaboratory.com>

RE: [External] Re: Sample order for PO: 721040501

1 message

Nick Cutler <ncutler@langan.com> Wed, May 10, 2023 at 8:42 PM
To: "Torrent Laboratory, Inc." <pm@torrentlaboratory.com>, Katherine Thomas <kthomas@langan.com>
Cc: "melanie.moran@torrentlaboratory.com" <melanie.moran@torrentlaboratory.com>, Melody Che <mche@langan.com>

Hi Kathie –

Can you please run the analyses on a 3-day TAT per the table below?

Sample ID	Metals 6010B	Pesticides 8081A	PCBs 8082	ACM PLM
B-1-5	1	1		1
B-2-5	1	1	1	
B-3-5	1	1		
B-4-6	1			
B-5-5	1			
B-6-5	1			
B-7-6	1			
B-8-5	1	1		
B-9-5	1			
B-11-5	1	1	1	
B-12-5	1		1	
B-13-5	1		1	

Cordially,
Nick Cutler

483 Sinclair Frontage Rd., Milpitas, CA 95035 | tel: 408.263.5258 | fax: 408.263.8293 | www.torrentlab.com

Torrent
LABORATORY, INC.

Langan
135 Main Street, Suite 1500
San Francisco, California 94105
Tel: 415.955.5200

RE: VERNON

Work Order No.: 2305065 Rev: 2

Dear Nick Cutler:

Torrent Laboratory, Inc. received 20 sample(s) on May 09, 2023 for the analyses presented in the following Report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.

Torrent Laboratory, Inc. is certified by the State of California, ELAP #1991. If you have any questions regarding these test results, please feel free to contact the Project Management Team at (408)263-5258; ext 204.



Kathie Evans
Project Manager

May 19, 2023
Date

Torrent LABORATORY, INC.

Date: 5/19/2023

Client: Langan

Project: VERNON

Work Order: 2305065

CASE NARRATIVE

Unless otherwise indicated in the following narrative, no issues encountered with the receiving, preparation, analysis or reporting of the results associated with this work order.

Unless otherwise indicated in the following narrative, no results have been method and/or field blank corrected.

Reported results relate only to the items/samples tested by the laboratory.

This report shall not be reproduced, except in full, without the written approval of Torrent Laboratory, Inc.

REVISIONS

Report revised to include additionally requested data

Rev. 1 (5/19/23)

Report revised to include additionally requested SVOC and VOC data.

Rev. 2 (5/23/23)

Torrent LABORATORY, INC.

Sample Result Summary

Report prepared for: Nick Cutler
Langan

Date Received: 05/09/23
Date Reported: 05/19/23

B-4-6 2305065-001

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	1.83	mg/Kg
Barium	SW6010B	1	0.055	5.00	108	mg/Kg
Chromium	SW6010B	1	0.075	5.00	13.5	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	9.00	mg/Kg
Copper	SW6010B	1	0.20	5.00	12.1	mg/Kg
Nickel	SW6010B	1	0.50	5.00	8.50	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	36.2	mg/Kg
Zinc	SW6010B	1	0.30	5.00	45.6	mg/Kg

B-4-15 2305065-003

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	1.68	mg/Kg
Barium	SW6010B	1	0.055	5.00	84.5	mg/Kg
Chromium	SW6010B	1	0.075	5.00	14.1	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	7.75	mg/Kg
Copper	SW6010B	1	0.20	5.00	15.8	mg/Kg
Nickel	SW6010B	1	0.50	5.00	7.60	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	37.2	mg/Kg
Zinc	SW6010B	1	0.30	5.00	39.6	mg/Kg

B-5-5 2305065-007

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	2.23	mg/Kg
Barium	SW6010B	1	0.055	5.00	89.0	mg/Kg
Chromium	SW6010B	1	0.075	5.00	16.3	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	8.05	mg/Kg
Copper	SW6010B	1	0.20	5.00	21.4	mg/Kg
Lead	SW6010B	1	0.10	3.00	15.4	mg/Kg
Nickel	SW6010B	1	0.50	5.00	9.80	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	40.5	mg/Kg
Zinc	SW6010B	1	0.30	5.00	60.5	mg/Kg

B-5-15 2305065-009

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Barium	SW6010B	1	0.055	5.00	51.5	mg/Kg
Chromium	SW6010B	1	0.075	5.00	7.15	mg/Kg
Copper	SW6010B	1	0.20	5.00	5.50	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	27.9	mg/Kg
Zinc	SW6010B	1	0.30	5.00	22.6	mg/Kg

Torrent LABORATORY, INC.

Sample Result Summary

Report prepared for: Nick Cutler
Langan

Date Received: 05/09/23
Date Reported: 05/19/23

B-5-30 2305065-012

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

B-6-5 2305065-013

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	2.20	mg/Kg
Barium	SW6010B	1	0.055	5.00	103	mg/Kg
Chromium	SW6010B	1	0.075	5.00	15.9	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	9.05	mg/Kg
Copper	SW6010B	1	0.20	5.00	18.6	mg/Kg
Lead	SW6010B	1	0.10	3.00	6.95	mg/Kg
Nickel	SW6010B	1	0.50	5.00	9.15	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	42.2	mg/Kg
Zinc	SW6010B	1	0.30	5.00	53.5	mg/Kg
Hexavalent Chromium	SW7199	1	3.1	10	12.4	ug/Kg

B-6-15 2305065-015

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Barium	SW6010B	1	0.055	5.00	58.0	mg/Kg
Chromium	SW6010B	1	0.075	5.00	5.50	mg/Kg
Copper	SW6010B	1	0.20	5.00	5.80	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	20.2	mg/Kg
Zinc	SW6010B	1	0.30	5.00	23.6	mg/Kg

B-7-6 2305065-019

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	2.31	mg/Kg
Barium	SW6010B	1	0.055	5.00	105	mg/Kg
Chromium	SW6010B	1	0.075	5.00	16.6	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	8.80	mg/Kg
Copper	SW6010B	1	0.20	5.00	22.5	mg/Kg
Lead	SW6010B	1	0.10	3.00	24.1	mg/Kg
Nickel	SW6010B	1	0.50	5.00	10.7	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	38.5	mg/Kg
Zinc	SW6010B	1	0.30	5.00	66.0	mg/Kg

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-4-6	**Lab Sample ID:**	2305065-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 9:54		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/18/23	23:49	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-4-6	**Lab Sample ID:**	2305065-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 9:54		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/15/23	5:45:00PM
Prep Batch ID:	1150976	**Prep Analyst:**	AJNG	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/16/23	13:31	ERR	474697

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-4-6	**Lab Sample ID:**	2305065-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 9:54		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/15/23 5:15:00PM
Prep Batch ID:	1150962	**Prep Analyst:**	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	20:43	AT	474699
Arsenic	SW6010B	1	0.15	1.30	**1.83**		mg/Kg	05/15/23	20:43	AT	474699
Barium	SW6010B	1	0.055	5.00	**108**		mg/Kg	05/15/23	20:43	AT	474699
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/15/23	20:43	AT	474699
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/15/23	20:43	AT	474699
Chromium	SW6010B	1	0.075	5.00	**13.5**		mg/Kg	05/15/23	20:43	AT	474699
Cobalt	SW6010B	1	0.070	5.00	**9.00**		mg/Kg	05/15/23	20:43	AT	474699
Copper	SW6010B	1	0.20	5.00	**12.1**		mg/Kg	05/15/23	20:43	AT	474699
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/15/23	20:43	AT	474699
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	20:43	AT	474699
Nickel	SW6010B	1	0.50	5.00	**8.50**		mg/Kg	05/15/23	20:43	AT	474699
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/15/23	20:43	AT	474699
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/15/23	20:43	AT	474699
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/15/23	20:43	AT	474699
Vanadium	SW6010B	1	0.10	5.00	**36.2**		mg/Kg	05/15/23	20:43	AT	474699
Zinc	SW6010B	1	0.30	5.00	**45.6**		mg/Kg	05/15/23	20:43	AT	474699

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-4-15	**Lab Sample ID:**	2305065-003A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 10:00		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	0:10	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-4-15	**Lab Sample ID:**	2305065-003A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 10:00		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/17/23 7:15:00PM
Prep Batch ID:	1151067	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/18/23	13:54	BJAY	474773

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-4-15	**Lab Sample ID:**	2305065-003A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 10:00		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/17/23 7:00:00PM
Prep Batch ID:	1151065	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:34	AT	474846
Arsenic	SW6010B	1	0.15	1.30	**1.68**		mg/Kg	05/18/23	20:34	AT	474846
Barium	SW6010B	1	0.055	5.00	**84.5**		mg/Kg	05/18/23	20:34	AT	474846
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/18/23	20:34	AT	474846
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/18/23	20:34	AT	474846
Chromium	SW6010B	1	0.075	5.00	**14.1**		mg/Kg	05/18/23	20:34	AT	474846
Cobalt	SW6010B	1	0.070	5.00	**7.75**		mg/Kg	05/18/23	20:34	AT	474846
Copper	SW6010B	1	0.20	5.00	**15.8**		mg/Kg	05/18/23	20:34	AT	474846
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/18/23	20:34	AT	474846
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:34	AT	474846
Nickel	SW6010B	1	0.50	5.00	**7.60**		mg/Kg	05/18/23	20:34	AT	474846
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/18/23	20:34	AT	474846
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/18/23	20:34	AT	474846
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:34	AT	474846
Vanadium	SW6010B	1	0.10	5.00	**37.2**		mg/Kg	05/18/23	20:34	AT	474846
Zinc	SW6010B	1	0.30	5.00	**39.6**		mg/Kg	05/18/23	20:34	AT	474846

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-5-5	**Lab Sample ID:**	2305065-007A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 13:10		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	1:14	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-5-5	**Lab Sample ID:**	2305065-007A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 13:10		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/15/23	5:45:00PM
Prep Batch ID:	1150976	**Prep Analyst:**	AJNG	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/16/23	13:41	ERR	474697

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-5-5	**Lab Sample ID:**	2305065-007A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 13:10		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/15/23 5:15:00PM
Prep Batch ID:	1150962	**Prep Analyst:**	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	20:51	AT	474699
Arsenic	SW6010B	1	0.15	1.30	**2.23**		mg/Kg	05/15/23	20:51	AT	474699
Barium	SW6010B	1	0.055	5.00	**89.0**		mg/Kg	05/15/23	20:51	AT	474699
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/15/23	20:51	AT	474699
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/15/23	20:51	AT	474699
Chromium	SW6010B	1	0.075	5.00	**16.3**		mg/Kg	05/15/23	20:51	AT	474699
Cobalt	SW6010B	1	0.070	5.00	**8.05**		mg/Kg	05/15/23	20:51	AT	474699
Copper	SW6010B	1	0.20	5.00	**21.4**		mg/Kg	05/15/23	20:51	AT	474699
Lead	SW6010B	1	0.10	3.00	**15.4**		mg/Kg	05/15/23	20:51	AT	474699
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	20:51	AT	474699
Nickel	SW6010B	1	0.50	5.00	**9.80**		mg/Kg	05/15/23	20:51	AT	474699
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/15/23	20:51	AT	474699
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/15/23	20:51	AT	474699
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/15/23	20:51	AT	474699
Vanadium	SW6010B	1	0.10	5.00	**40.5**		mg/Kg	05/15/23	20:51	AT	474699
Zinc	SW6010B	1	0.30	5.00	**60.5**		mg/Kg	05/15/23	20:51	AT	474699

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-5-15	**Lab Sample ID:**	2305065-009A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 13:18		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	2:18	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-5-15	**Lab Sample ID:**	2305065-009A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 13:18		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/17/23 7:15:00PM
Prep Batch ID:	1151067	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/18/23	13:56	BJAY	474773

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-5-15	**Lab Sample ID:**	2305065-009A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 13:18		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/17/23 7:00:00PM
Prep Batch ID:	1151065	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:36	AT	474846
Arsenic	SW6010B	1	0.15	1.30	ND		mg/Kg	05/18/23	20:36	AT	474846
Barium	SW6010B	1	0.055	5.00	**51.5**		mg/Kg	05/18/23	20:36	AT	474846
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/18/23	20:36	AT	474846
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/18/23	20:36	AT	474846
Chromium	SW6010B	1	0.075	5.00	**7.15**		mg/Kg	05/18/23	20:36	AT	474846
Cobalt	SW6010B	1	0.070	5.00	ND		mg/Kg	05/18/23	20:36	AT	474846
Copper	SW6010B	1	0.20	5.00	**5.50**		mg/Kg	05/18/23	20:36	AT	474846
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/18/23	20:36	AT	474846
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:36	AT	474846
Nickel	SW6010B	1	0.50	5.00	ND		mg/Kg	05/18/23	20:36	AT	474846
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/18/23	20:36	AT	474846
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/18/23	20:36	AT	474846
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:36	AT	474846
Vanadium	SW6010B	1	0.10	5.00	**27.9**		mg/Kg	05/18/23	20:36	AT	474846
Zinc	SW6010B	1	0.30	5.00	**22.6**		mg/Kg	05/18/23	20:36	AT	474846

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-5-30	**Lab Sample ID:**	2305065-012A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 13:35		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
N-Nitrosodimethylamine	SW8270C	1	46.9	720	ND		ug/Kg	05/21/23	23:42	MT	474888
Phenol	SW8270C	1	43.8	288	ND		ug/Kg	05/21/23	23:42	MT	474888
Bis(2-chloroethyl)ether	SW8270C	1	13.3	144	ND		ug/Kg	05/21/23	23:42	MT	474888
2-Chlorophenol	SW8270C	1	47.7	288	ND		ug/Kg	05/21/23	23:42	MT	474888
1,3-Dichlorobenzene	SW8270C	1	13.1	144	ND		ug/Kg	05/21/23	23:42	MT	474888
1,4-Dichlorobenzene	SW8270C	1	14.6	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Benzyl Alcohol	SW8270C	1	20.5	288	ND		ug/Kg	05/21/23	23:42	MT	474888
1,2-Dichlorobenzene	SW8270C	1	13.5	144	ND		ug/Kg	05/21/23	23:42	MT	474888
2-Methylphenol (o-Cresol)	SW8270C	1	29.3	288	ND		ug/Kg	05/21/23	23:42	MT	474888
N-Methyl-2-Pyrrolidone (NMP)	SW8270C	1	68.0	720	ND		ug/Kg	05/21/23	23:42	MT	474888
3-/4-Methylphenol (p-/m-Cresol)	SW8270C	1	31.3	288	ND		ug/Kg	05/21/23	23:42	MT	474888
N-nitroso-di-n-propylamine	SW8270C	1	13.2	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Hexachloroethane	SW8270C	1	17.1	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Nitrobenzene	SW8270C	1	12.8	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Isophorone	SW8270C	1	12.2	144	ND		ug/Kg	05/21/23	23:42	MT	474888
2-Nitrophenol	SW8270C	1	25.4	288	ND		ug/Kg	05/21/23	23:42	MT	474888
2,4-Dimethylphenol	SW8270C	1	22.8	288	ND		ug/Kg	05/21/23	23:42	MT	474888
Benzoic Acid	SW8270C	1	41.7	288	ND		ug/Kg	05/21/23	23:42	MT	474888
Bis(2-Chloroethoxy)methane	SW8270C	1	9.79	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Bis(2-chloroisopropyl)ether	SW8270C	1	12.6	144	ND		ug/Kg	05/21/23	23:42	MT	474888
2,4-Dichlorophenol	SW8270C	1	39.3	288	ND		ug/Kg	05/21/23	23:42	MT	474888
1,2,4-Trichlorobenzene	SW8270C	1	11.8	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Naphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/21/23	23:42	MT	474888
2,6-Dichlorophenol	SW8270C	1	35.8	288	ND		ug/Kg	05/21/23	23:42	MT	474888
Hexachloro-1,3-butadiene	SW8270C	1	8.34	144	ND		ug/Kg	05/21/23	23:42	MT	474888
4-Chloro-3-methylphenol	SW8270C	1	33.8	288	ND		ug/Kg	05/21/23	23:42	MT	474888
2-Methylnaphthalene	SW8270C	1	10.4	144	ND		ug/Kg	05/21/23	23:42	MT	474888
1-Methylnaphthalene	SW8270C	1	12.2	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Hexachlorocyclopentadiene	SW8270C	1	12.9	144	ND		ug/Kg	05/21/23	23:42	MT	474888
2,4,6-Trichlorophenol	SW8270C	1	35.9	288	ND		ug/Kg	05/21/23	23:42	MT	474888
2,4,5-Trichlorophenol	SW8270C	1	33.4	288	ND		ug/Kg	05/21/23	23:42	MT	474888
2-Chloronaphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/21/23	23:42	MT	474888
1,4-Dinitrobenzene	SW8270C	1	10.3	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Dimethyl phthalate	SW8270C	1	14.2	720	ND		ug/Kg	05/21/23	23:42	MT	474888
1,3-Dinitrobenzene	SW8270C	1	10.4	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Acenaphthylene	SW8270C	1	8.28	144	ND		ug/Kg	05/21/23	23:42	MT	474888
2,6-Dinitrotoluene	SW8270C	1	11.3	144	ND		ug/Kg	05/21/23	23:42	MT	474888
1,2-Dinitrobenzene	SW8270C	1	15.8	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Acenaphthene	SW8270C	1	10.7	144	ND		ug/Kg	05/21/23	23:42	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-5-30	**Lab Sample ID:**	2305065-012A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 13:35		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2,4-Dinitrophenol	SW8270C	1	77.6	720	ND		ug/Kg	05/21/23	23:42	MT	474888
4-Nitrophenol	SW8270C	1	54.7	720	ND		ug/Kg	05/21/23	23:42	MT	474888
Dibenzofuran	SW8270C	1	11.2	144	ND		ug/Kg	05/21/23	23:42	MT	474888
2,4-Dinitrotoluene	SW8270C	1	12.1	144	ND		ug/Kg	05/21/23	23:42	MT	474888
2,3,5,6-Tetrachlorophenol	SW8270C	1	27.6	288	ND		ug/Kg	05/21/23	23:42	MT	474888
2,3,4,6-Tetrachlorophenol	SW8270C	1	31.5	288	ND		ug/Kg	05/21/23	23:42	MT	474888
Diethylphthalate	SW8270C	1	13.6	720	ND		ug/Kg	05/21/23	23:42	MT	474888
Fluorene	SW8270C	1	10.3	144	ND		ug/Kg	05/21/23	23:42	MT	474888
4-Chlorophenyl-phenylether	SW8270C	1	9.32	144	ND		ug/Kg	05/21/23	23:42	MT	474888
4,6-Dinitro-2-methylphenol	SW8270C	1	13.4	288	ND		ug/Kg	05/21/23	23:42	MT	474888
Diphenylamine	SW8270C	1	13.0	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Azobenzene	SW8270C	1	114	144	ND		ug/Kg	05/21/23	23:42	MT	474888
4-Bromophenyl-phenylether	SW8270C	1	8.23	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Hexachlorobenzene	SW8270C	1	8.66	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Pentachlorophenol	SW8270C	1	25.0	288	ND		ug/Kg	05/21/23	23:42	MT	474888
Phenanthrene	SW8270C	1	9.32	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Anthracene	SW8270C	1	8.91	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Carbazole	SW8270C	1	10.7	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Di-n-butylphthalate	SW8270C	1	13.5	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Fluoranthene	SW8270C	1	10.0	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Benzidine	SW8270C	1	147	147	ND		ug/Kg	05/21/23	23:42	MT	474888
Pyrene	SW8270C	1	12.0	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Butylbenzylphthalate	SW8270C	1	21.0	720	ND		ug/Kg	05/21/23	23:42	MT	474888
Benzo(a)anthracene	SW8270C	1	9.80	144	ND		ug/Kg	05/21/23	23:42	MT	474888
3,3-Dichlorobenzidine	SW8270C	1	118	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Chrysene	SW8270C	1	15.2	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Bis(2-Ethylhexyl)phthalate	SW8270C	1	15.3	720	ND		ug/Kg	05/21/23	23:42	MT	474888
Di-n-Octylphthalate	SW8270C	1	12.3	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Benzo(b)fluorathene	SW8270C	1	12.0	144	ND		ug/Kg	05/21/23	23:42	MT	474888
benzo(k)fluorathene	SW8270C	1	8.16	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Benzo(a)pyrene	SW8270C	1	9.80	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Indeno(1,2,3-c,d)pyrene	SW8270C	1	13.8	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Dibenzo(a,h)anthracene	SW8270C	1	12.7	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Benzo(g,h,i)perylene	SW8270C	1	16.7	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Pyridine	SW8270C	1	43.8	720	ND		ug/Kg	05/21/23	23:42	MT	474888
			Acceptance Limits								
2-Fluorophenol (S)	SW8270C		25 - 121		**68.5**		%	05/21/23	23:42	MT	474888
Phenol-d6 (S)	SW8270C		24 - 113		**70.4**		%	05/21/23	23:42	MT	474888
2,4,6-Tribromophenol (S)	SW8270C		19 - 122		**65.4**		%	05/21/23	23:42	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-5-30	**Lab Sample ID:**	2305065-012A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 13:35		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23	11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2-Fluorobiphenyl (S)	SW8270C		45 - 143		**70.3**		%	05/21/23	23:42	MT	474888
Nitrobenzene-d5 (S)	SW8270C		23 - 120		**67.2**		%	05/21/23	23:42	MT	474888
p-Terphenyl-d14 (S)	SW8270C		18 - 137		**93.1**		%	05/21/23	23:42	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-5-30	**Lab Sample ID:**	2305065-012A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 13:35		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/22/23 9:55:00AM
Prep Batch ID:	1151218	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	1.2	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Chloromethane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Vinyl Chloride	SW8260B	1	2.0	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Bromomethane	SW8260B	1	2.7	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Chloroethane	SW8260B	1	3.0	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Trichlorofluoromethane	SW8260B	1	2.1	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,1-Dichloroethene	SW8260B	1	2.0	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Freon 113	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Methylene Chloride	SW8260B	1	7.1	10	ND		ug/Kg	05/22/23	21:00	BP	474921
trans-1,2-Dichloroethene	SW8260B	1	2.1	10	ND		ug/Kg	05/22/23	21:00	BP	474921
MTBE	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	21:00	BP	474921
TBA	SW8260B	1	12	50	ND		ug/Kg	05/22/23	21:00	BP	474921
Diisopropyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,1-Dichloroethane	SW8260B	1	2.2	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Ethyl tert-Butyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	21:00	BP	474921
cis-1,2-Dichloroethene	SW8260B	1	2.2	10	ND		ug/Kg	05/22/23	21:00	BP	474921
2,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Bromochloromethane	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Chloroform	SW8260B	1	2.4	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Carbon Tetrachloride	SW8260B	1	2.1	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,1,1-Trichloroethane	SW8260B	1	2.1	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,1-Dichloropropene	SW8260B	1	2.0	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Benzene	SW8260B	1	2.2	10	ND		ug/Kg	05/22/23	21:00	BP	474921
TAME	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,2-Dichloroethane	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Trichloroethene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Dibromomethane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Bromodichloromethane	SW8260B	1	2.0	10	ND		ug/Kg	05/22/23	21:00	BP	474921
cis-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Toluene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Tetrachloroethene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:00	BP	474921
trans-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,1,2-Trichloroethane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Dibromochloromethane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,3-Dichloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,2-Dibromoethane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Chlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Ethylbenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:00	BP	474921

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-5-30	**Lab Sample ID:**	2305065-012A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 13:35		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/22/23 9:55:00AM
Prep Batch ID:	1151218	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	21:00	BP	474921
m,p-Xylene	SW8260B	1	3.2	10	ND		ug/Kg	05/22/23	21:00	BP	474921
o-Xylene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Styrene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Bromoform	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Isopropyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:00	BP	474921
n-Propylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Bromobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,1,2,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	21:00	BP	474921
2-Chlorotoluene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,3,5-Trimethylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,2,3-Trichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	21:00	BP	474921
4-Chlorotoluene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:00	BP	474921
tert-Butylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,2,4-Trimethylbenzene	SW8260B	1	1.4	10	ND		ug/Kg	05/22/23	21:00	BP	474921
sec-Butyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:00	BP	474921
p-Isopropyltoluene	SW8260B	1	1.5	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,3-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,4-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:00	BP	474921
n-Butylbenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,2-Dichlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,2-Dibromo-3-Chloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Hexachlorobutadiene	SW8260B	1	1.4	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,2,4-Trichlorobenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Naphthalene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,2,3-Trichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:00	BP	474921
2-Butanone	SW8260B	1	2.3	10.0	ND		ug/Kg	05/22/23	21:00	BP	474921
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**125**		%	05/22/23	21:00	BP	474921
(S) Toluene-d8	SW8260B		55.2 - 133		**104**		%	05/22/23	21:00	BP	474921
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**100**		%	05/22/23	21:00	BP	474921

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-6-5	**Lab Sample ID:**	2305065-013A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 13:32		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	**12.4**		ug/Kg	05/19/23	2:40	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-6-5	**Lab Sample ID:**	2305065-013A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 13:32		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/15/23 5:45:00PM
Prep Batch ID:	1150976	**Prep Analyst:**	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/16/23	13:44	ERR	474697

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-6-5	**Lab Sample ID:**	2305065-013A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 13:32		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/15/23 5:15:00PM
Prep Batch ID:	1150962	**Prep Analyst:**	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	20:53	AT	474699
Arsenic	SW6010B	1	0.15	1.30	**2.20**		mg/Kg	05/15/23	20:53	AT	474699
Barium	SW6010B	1	0.055	5.00	**103**		mg/Kg	05/15/23	20:53	AT	474699
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/15/23	20:53	AT	474699
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/15/23	20:53	AT	474699
Chromium	SW6010B	1	0.075	5.00	**15.9**		mg/Kg	05/15/23	20:53	AT	474699
Cobalt	SW6010B	1	0.070	5.00	**9.05**		mg/Kg	05/15/23	20:53	AT	474699
Copper	SW6010B	1	0.20	5.00	**18.6**		mg/Kg	05/15/23	20:53	AT	474699
Lead	SW6010B	1	0.10	3.00	**6.95**		mg/Kg	05/15/23	20:53	AT	474699
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	20:53	AT	474699
Nickel	SW6010B	1	0.50	5.00	**9.15**		mg/Kg	05/15/23	20:53	AT	474699
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/15/23	20:53	AT	474699
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/15/23	20:53	AT	474699
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/15/23	20:53	AT	474699
Vanadium	SW6010B	1	0.10	5.00	**42.2**		mg/Kg	05/15/23	20:53	AT	474699
Zinc	SW6010B	1	0.30	5.00	**53.5**		mg/Kg	05/15/23	20:53	AT	474699

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-6-15	**Lab Sample ID:**	2305065-015A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 13:43		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	3:01	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-6-15	**Lab Sample ID:**	2305065-015A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 13:43		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/17/23 7:15:00PM
Prep Batch ID:	1151067	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/18/23	13:59	BJAY	474773

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-6-15	**Lab Sample ID:**	2305065-015A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 13:43		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/17/23 7:00:00PM
Prep Batch ID:	1151065	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:37	AT	474846
Arsenic	SW6010B	1	0.15	1.30	ND		mg/Kg	05/18/23	20:37	AT	474846
Barium	SW6010B	1	0.055	5.00	**58.0**		mg/Kg	05/18/23	20:37	AT	474846
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/18/23	20:37	AT	474846
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/18/23	20:37	AT	474846
Chromium	SW6010B	1	0.075	5.00	**5.50**		mg/Kg	05/18/23	20:37	AT	474846
Cobalt	SW6010B	1	0.070	5.00	ND		mg/Kg	05/18/23	20:37	AT	474846
Copper	SW6010B	1	0.20	5.00	**5.80**		mg/Kg	05/18/23	20:37	AT	474846
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/18/23	20:37	AT	474846
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:37	AT	474846
Nickel	SW6010B	1	0.50	5.00	ND		mg/Kg	05/18/23	20:37	AT	474846
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/18/23	20:37	AT	474846
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/18/23	20:37	AT	474846
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:37	AT	474846
Vanadium	SW6010B	1	0.10	5.00	**20.2**		mg/Kg	05/18/23	20:37	AT	474846
Zinc	SW6010B	1	0.30	5.00	**23.6**		mg/Kg	05/18/23	20:37	AT	474846

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-7-6	**Lab Sample ID:**	2305065-019A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 8:09		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	3:22	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-7-6	**Lab Sample ID:**	2305065-019A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 8:09		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/15/23	5:45:00PM
Prep Batch ID:	1150976	**Prep Analyst:**	AJNG	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/16/23	13:46	ERR	474697

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-7-6	**Lab Sample ID:**	2305065-019A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 8:09		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/15/23 5:15:00PM
Prep Batch ID:	1150962	**Prep Analyst:**	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	20:54	AT	474699
Arsenic	SW6010B	1	0.15	1.30	**2.31**		mg/Kg	05/15/23	20:54	AT	474699
Barium	SW6010B	1	0.055	5.00	**105**		mg/Kg	05/15/23	20:54	AT	474699
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/15/23	20:54	AT	474699
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/15/23	20:54	AT	474699
Chromium	SW6010B	1	0.075	5.00	**16.6**		mg/Kg	05/15/23	20:54	AT	474699
Cobalt	SW6010B	1	0.070	5.00	**8.80**		mg/Kg	05/15/23	20:54	AT	474699
Copper	SW6010B	1	0.20	5.00	**22.5**		mg/Kg	05/15/23	20:54	AT	474699
Lead	SW6010B	1	0.10	3.00	**24.1**		mg/Kg	05/15/23	20:54	AT	474699
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	20:54	AT	474699
Nickel	SW6010B	1	0.50	5.00	**10.7**		mg/Kg	05/15/23	20:54	AT	474699
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/15/23	20:54	AT	474699
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/15/23	20:54	AT	474699
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/15/23	20:54	AT	474699
Vanadium	SW6010B	1	0.10	5.00	**38.5**		mg/Kg	05/15/23	20:54	AT	474699
Zinc	SW6010B	1	0.30	5.00	**66.0**		mg/Kg	05/15/23	20:54	AT	474699

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305065	**Prep Method:**	3050B	**Prep Date:**	05/15/23	**Prep Batch:**	1150962
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/15/2023	**Analytical Batch:**	474699
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Antimony	0.050	5.00	ND	
Arsenic	0.15	1.30	ND	
Barium	0.055	5.00	0.14	J
Beryllium	0.055	5.00	ND	
Cadmium	0.10	0.750	ND	
Chromium	0.075	5.00	0.13	J
Cobalt	0.070	5.00	ND	
Copper	0.20	5.00	ND	
Lead	0.10	3.00	ND	
Molybdenum	0.050	5.00	0.050	
Nickel	0.50	5.00	ND	
Selenium	0.35	1.10	ND	
Silver	0.15	0.500	ND	
Thallium	0.55	5.00	ND	
Vanadium	0.10	5.00	ND	
Zinc	0.30	5.00	3.2	J

Work Order:	2305065	**Prep Method:**	7471BP	**Prep Date:**	05/15/23	**Prep Batch:**	1150976
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/16/2023	**Analytical Batch:**	474697
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Mercury	0.083	0.50	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305065	**Prep Method:**	3050B	**Prep Date:**	05/17/23	**Prep Batch:**	1151065
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474846
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Antimony	0.050	5.00	0.065	
Arsenic	0.15	1.30	ND	
Barium	0.055	5.00	0.19	
Beryllium	0.055	5.00	ND	
Cadmium	0.10	0.750	ND	
Chromium	0.075	5.00	0.16	
Cobalt	0.070	5.00	ND	
Copper	0.20	5.00	ND	
Lead	0.10	3.00	ND	
Molybdenum	0.050	5.00	0.15	
Nickel	0.50	5.00	ND	
Selenium	0.35	1.10	ND	
Silver	0.15	0.500	ND	
Thallium	0.55	5.00	ND	
Vanadium	0.10	5.00	ND	
Zinc	0.30	5.00	ND	

Work Order:	2305065	**Prep Method:**	7471BP	**Prep Date:**	05/17/23	**Prep Batch:**	1151067
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474773
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Mercury	0.083	0.50	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305065	**Prep Method:**	3546_BNA	**Prep Date:**	05/19/23	**Prep Batch:**	1151137
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474887
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
N-Nitrosodimethylamine	46.9	720	ND		
Phenol	43.8	288	ND		
Bis(2-chloroethyl)ether	13.3	144	ND		
2-Chlorophenol	47.7	288	ND		
1,3-Dichlorobenzene	13.1	144	ND		
1,4-Dichlorobenzene	14.6	144	ND		
Benzyl Alcohol	20.5	288	ND		
1,2-Dichlorobenzene	13.5	144	ND		
2-Methylphenol (o-Cresol)	29.3	288	ND		
N-Methyl-2-Pyrrolidone (NMP)	68.0	720	ND		
	12.6	144	ND		
3-/4-Methylphenol (p-/m-Cresol)	31.3	288	ND		
N-nitroso-di-n-propylamine	13.2	144	ND		
Hexachloroethane	17.1	144	ND		
Nitrobenzene	12.8	144	ND		
Isophorone	12.2	144	ND		
2-Nitrophenol	25.4	288	ND		
2,4-Dimethylphenol	22.8	288	ND		
Benzoic Acid	41.7	288	ND		
Bis(2-Chloroethoxy)methane	9.79	144	ND		
Bis(2-chloroisopropyl)ether	12.6	144	ND		
2,4-Dichlorophenol	39.3	288	ND		
1,2,4-Trichlorobenzene	11.8	144	ND		
Naphthalene	10.6	144	ND		
2,6-Dichlorophenol	35.8	288	ND		
Hexachloro-1,3-butadiene	8.34	144	ND		
4-Chloro-3-methylphenol	33.8	288	ND		
2-Methylnaphthalene	10.4	144	ND		
1-Methylnaphthalene	12.2	144	ND		
Hexachlorocyclopentadiene	12.9	144	ND		
2,4,6-Trichlorophenol	35.9	288	ND		
2,4,5-Trichlorophenol	33.4	288	ND		
2-Chloronaphthalene	10.6	144	ND		
1,4-Dinitrobenzene	10.3	144	ND		
Dimethyl phthalate	14.2	720	ND		
1,3-Dinitrobenzene	10.4	144	ND		
Acenaphthylene	8.28	144	ND		
2,6-Dinitrotoluene	11.3	144	ND		
1,2-Dinitrobenzene	15.8	144	ND		
Acenaphthene	10.7	144	ND		
2,4-Dinitrophenol	77.6	720	ND		
4-Nitrophenol	54.7	720	ND		
Dibenzofuran	11.2	144	ND		
2,4-Dinitrotoluene	12.1	144	ND		
2,3,5,6-Tetrachlorophenol	27.6	288	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305065	**Prep Method:**	3546_BNA	**Prep Date:**	05/19/23	**Prep Batch:**	1151137
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474887
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
2,3,4,6-Tetrachlorophenol	31.5	288	ND	
Diethylphthalate	13.6	720	79.2	
Fluorene	10.3	144	ND	
4-Chlorophenyl-phenylether	9.32	144	ND	
4,6-Dinitro-2-methylphenol	13.4	288	ND	
Diphenylamine	13.0	144	ND	
Azobenzene	114	144	ND	
4-Bromophenyl-phenylether	8.23	144	ND	
Hexachlorobenzene	8.66	144	ND	
Pentachlorophenol	25.0	288	ND	
Phenanthrene	9.32	144	ND	
Anthracene	8.91	144	ND	
Carbazole	10.7	144	ND	
Di-n-butylphthalate	13.5	144	ND	
Fluoranthene	10.0	147	ND	
Benzidine	147	144	ND	
Pyrene	12.0	144	ND	
Butylbenzylphthalate	21.0	720	ND	
Benzo(a)anthracene	9.80	144	ND	
3,3-Dichlorobenzidine	118	144	ND	
Chrysene	15.2	144	ND	
Bis(2-Ethylhexyl)phthalate	15.3	720	ND	
Di-n-Octylphthalate	12.3	144	ND	
Benzo(b)fluorathene	12.0	144	ND	
benzo(k)fluorathene	8.16	144	ND	
Benzo(a)pyrene	9.80	144	ND	
Indeno(1,2,3-c,d)pyrene	13.8	144	ND	
Dibenzo(a,h)anthracene	12.7	144	ND	
Benzo(g,h,i)perylene	12.7	144	ND	
Pyridine	43.8	720	ND	
2-Fluorophenol (S)			88.1	
Phenol-d6 (S)			105	
2,4,6-Tribromophenol (S)			96.0	
2-Fluorobiphenyl (S)			80.2	
Nitrobenzene-d5 (S)			88.9	
p-Terphenyl-d14 (S)			91.7	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305065	**Prep Method:**	7199MP	**Prep Date:**	05/18/23	**Prep Batch:**	1151157
Matrix:	Soil	**Analytical Method:**	SW7199	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474857
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Hexavalent Chromium	3.1	10	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305065	**Prep Method:**	5035	**Prep Date:**	05/22/23	**Prep Batch:**	1151218
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/22/2023	**Analytical Batch:**	474921
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Dichlorodifluoromethane	1.2	10	ND		
Chloromethane	1.8	10	ND		
Vinyl Chloride	2.0	10	ND		
Bromomethane	2.7	10	ND		
Chloroethane	3.0	10	ND		
Trichlorofluoromethane	2.1	10	ND		
1,1-Dichloroethene	2.0	10	ND		
Freon 113	1.9	10	ND		
Methylene Chloride	7.1	10	ND		
trans-1,2-Dichloroethene	2.1	10	ND		
MTBE	2.3	10	ND		
TBA	12	50	ND		
Diisopropyl ether	2.3	10	ND		
1,1-Dichloroethane	2.2	10	ND		
Ethyl tert-Butyl ether	2.3	10	ND		
cis-1,2-Dichloroethene	2.2	10	ND		
2,2-Dichloropropane	1.9	10	ND		
Bromochloromethane	2.3	10	ND		
Chloroform	2.4	10	ND		
Carbon Tetrachloride	2.1	10	ND		
1,1,1-Trichloroethane	2.1	10	ND		
1,1-Dichloropropene	2.0	10	ND		
Benzene	2.2	10	ND		
TAME	2.3	10	ND		
1,2-Dichloroethane	2.3	10	ND		
Trichloroethene	1.8	10	ND		
Dibromomethane	1.8	10	ND		
1,2-Dichloropropane	1.9	10	ND		
Bromodichloromethane	2.0	10	ND		
cis-1,3-Dichloropropene	1.6	10	ND		
Toluene	1.8	10	ND		
Tetrachloroethene	1.7	10	ND		
trans-1,3-Dichloropropene	1.6	10	ND		
1,1,2-Trichloroethane	1.8	10	ND		
Dibromochloromethane	1.9	10	ND		
1,3-Dichloropropane	1.8	10	ND		
1,2-Dibromoethane	1.8	10	ND		
Chlorobenzene	1.8	10	ND		
Ethylbenzene	1.7	10	ND		
1,1,1,2-Tetrachloroethane	1.9	10	ND		
m,p-Xylene	3.2	10	ND		
o-Xylene	1.7	10	ND		
Styrene	1.6	10	ND		
Bromoform	1.7	10	ND		
Isopropyl Benzene	1.6	10	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305065	**Prep Method:**	5035	**Prep Date:**	05/22/23	**Prep Batch:**	1151218
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/22/2023	**Analytical Batch:**	474921
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
n-Propylbenzene	1.6	10	ND	
Bromobenzene	1.8	10	ND	
1,1,2,2-Tetrachloroethane	1.9	10	ND	
2-Chlorotoluene	1.8	10	ND	
1,3,5-Trimethylbenzene	1.6	10	ND	
1,2,3-Trichloropropane	1.9	10	ND	
4-Chlorotoluene	1.6	10	ND	
tert-Butylbenzene	1.6	10	ND	
1,2,4-Trimethylbenzene	1.4	10	ND	
sec-Butyl Benzene	1.6	10	ND	
p-Isopropyltoluene	1.5	10	ND	
1,3-Dichlorobenzene	1.7	10	ND	
1,4-Dichlorobenzene	1.7	10	ND	
n-Butylbenzene	1.5	10	ND	
1,2-Dichlorobenzene	1.8	10	ND	
1,2-Dibromo-3-Chloropropane	1.8	10	ND	
Hexachlorobutadiene	1.4	10	ND	
1,2,4-Trichlorobenzene	1.5	10	ND	
Naphthalene	1.7	10	2.5	
1,2,3-Trichlorobenzene	1.7	10	ND	
2-Butanone	2.3	10	ND	
(S) Dibromofluoromethane			114	
(S) Toluene-d8			103	
(S) 4-Bromofluorobenzene			98.7	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305065	**Prep Method:**	3050B	**Prep Date:**	05/15/23	**Prep Batch:**	1150962
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/15/2023	**Analytical Batch:**	474699
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony	0.050	5.00	ND	50	98.3	99.6	1.21	80 - 120	30	
Arsenic	0.15	1.30	ND	50	99.4	100	0.602	80 - 120	30	
Barium	0.055	5.00	0.14	50	101	102	0.985	80 - 120	30	
Beryllium	0.055	5.00	ND	50	102	103	0.976	80 - 120	30	
Cadmium	0.10	0.750	ND	50	101	102	0.985	80 - 120	30	
Chromium	0.075	5.00	0.13	50	102	103	0.976	80 - 120	30	
Cobalt	0.070	5.00	ND	50	102	103	0.976	80 - 120	30	
Copper	0.20	5.00	ND	50	102	103	0.976	80 - 120	30	
Lead	0.10	3.00	ND	50	101	102	0.985	80 - 120	30	
Molybdenum	0.050	5.00	0.050	50	101	102	0.985	80 - 120	30	
Nickel	0.50	5.00	ND	50	102	103	0.976	80 - 120	30	
Selenium	0.22	5.00	ND	50	92.9	93.5	0.643	80 - 120	30	
Silver	0.15	5.00	ND	50	99.3	100	0.602	80 - 120	30	
Thallium	0.20	5.00	ND	50	99.8	101	1.20	80 - 120	30	
Vanadium	0.10	5.00	ND	50	102	103	0.976	80 - 120	30	
Zinc	0.30	5.00	3.2	50	111	111	0.000	80 - 120	30	

Work Order:	2305065	**Prep Method:**	7471BP	**Prep Date:**	05/15/23	**Prep Batch:**	1150976
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/16/2023	**Analytical Batch:**	474697
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury	0.047	0.50	ND	1.25	105	104	0.766	80 - 120	20	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305065	**Prep Method:**	3050B	**Prep Date:**	05/17/23	**Prep Batch:**	1151065
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474846
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony	0.050	5.00	0.065	50	99.7	100	0.200	80 - 120	30	
Arsenic	0.15	1.30	ND	50	98.4	98.7	0.406	80 - 120	30	
Barium	0.055	5.00	0.19	50	103	103	0.000	80 - 120	30	
Beryllium	0.055	5.00	ND	50	102	102	0.000	80 - 120	30	
Cadmium	0.10	0.750	ND	50	101	101	0.000	80 - 120	30	
Chromium	0.075	5.00	0.16	50	103	103	0.000	80 - 120	30	
Cobalt	0.070	5.00	ND	50	102	102	0.000	80 - 120	30	
Copper	0.20	5.00	ND	50	105	105	0.000	80 - 120	30	
Lead	0.10	3.00	ND	50	102	102	0.000	80 - 120	30	
Molybdenum	0.050	5.00	0.15	50	103	103	0.000	80 - 120	30	
Nickel	0.50	5.00	ND	50	102	102	0.000	80 - 120	30	
Selenium	0.22	5.00	ND	50	91.8	92.4	0.651	80 - 120	30	
Silver	0.15	5.00	ND	50	100	101	0.995	80 - 120	30	
Thallium	0.20	5.00	ND	50	99.7	101	1.20	80 - 120	30	
Vanadium	0.10	5.00	ND	50	103	103	0.000	80 - 120	30	
Zinc	0.30	5.00	ND	50	100	101	0.995	80 - 120	30	

Work Order:	2305065	**Prep Method:**	7471BP	**Prep Date:**	05/17/23	**Prep Batch:**	1151067
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474773
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury	0.047	0.50	ND	1.25	117	117	0.000	80 - 120	20	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305065	**Prep Method:**	3546_BNA	**Prep Date:**	05/19/23	**Prep Batch:**	1151137
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474887
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Phenol	43.8	288	ND	1200	92.5	94.2	1.79	40 - 100	30	
2-Chlorophenol	47.7	288	ND	1200	92.4	88.8	3.67	45 - 105	30	
Bis(2-chloroethyl)ether	14.6	144	ND	400	76.2	75.7	0.658	35 - 105	30	
N-nitroso-di-n-propylamine	13.2	144	ND	400	107	109	1.85	40 - 115	30	
1,2,4-Trichlorobenzene	11.8	144	ND	400	78.7	75.4	4.21	45 - 110	30	
1,4-Dichlorobenzene	33.8	288	ND	1200	103	95.8	7.53	45 - 110	30	
Acenaphthene	10.7	144	ND	400	93.0	86.2	7.53	45 - 110	30	
4-Nitrophenol	54.7	720	ND	1200	87.3	81.4	7.31	15 - 140	30	
2,4-Dinitrotoluene	12.1	144	ND	400	91.9	91.3	0.819	50 - 115	30	
N-Methyl-2-Pyrrolidone (NMP)	12.0	144	ND	1200	68.3	70.5	3.12	25 - 120	30	
Pyrene	12.0	144	ND	400	90.7	87.6	3.65	45 - 145	30	
2-Fluorophenol (S)				11100	86.8	84.7		25 - 121		
Phenol-d6 (S)				11100	95.7	98.5		24 - 113		
2,4,6-Tribromophenol (S)				11100	107	97.9		19 - 122		
2-Fluorobiphenyl (S)				5560	89.1	81.3		30 - 143		
Nitrobenzene-d5 (S)				5560	93.6	77.9		23 - 120		
p-Terphenyl-d14 (S)				5560	86.3	79.5		18 - 137		

Work Order:	2305065	**Prep Method:**	7199MP	**Prep Date:**	05/18/23	**Prep Batch:**	1151157
Matrix:	Soil	**Analytical Method:**	SW7199	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474857
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Hexavalent Chromium	3.1	10	ND	100	101	103	1.96	80 - 120	20	

Work Order:	2305065	**Prep Method:**	5035	**Prep Date:**	05/22/23	**Prep Batch:**	1151218
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/22/2023	**Analytical Batch:**	474921
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
1,1-Dichloroethene	2.0	10	ND	50.0	113	113	0.000	53.7 - 139	30	
Benzene	2.2	10	ND	50.0	111	110	0.544	66.5 - 135	30	
Trichloroethene	1.8	10	ND	50.0	97.9	94.7	3.33	57.5 - 150	30	
Toluene	1.8	10	ND	50.0	102	98.9	2.99	56.8 - 134	30	
Chlorobenzene	1.8	10	ND	50.0	98.7	98.6	0.000	57.4 - 134	30	
(S) Dibromofluoromethane				50.0	113	110		59.8 - 148		
(S) Toluene-d8				50.0	104	103		55.2 - 133		
(S) 4-Bromofluorobenzene				50.0	108	109		55.8 - 141		

Torrent LABORATORY, INC.

MS/MSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305065	**Prep Method:**	3050B	**Prep Date:**	05/15/23	**Prep Batch:**	1150962
Matrix:	**Soil**	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/15/2023	**Analytical Batch:**	474699
Spiked Sample:	2305065-001A						
Units:	mg/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony	0.050	5.00	ND	50	93.7	91.2	2.81	30.7 - 130	30	
Arsenic	0.15	1.30	1.83	50	98.3	96.2	1.98	71.0 - 121	30	
Barium	0.055	5.00	108	50	76.0	75.0	0.000	70.2 - 130	30	
Beryllium	0.055	5.00	ND	50	99.6	97.4	2.22	73.3 - 115	30	
Cadmium	0.10	0.750	ND	50	96.0	93.5	2.73	80.0 - 110	30	
Chromium	0.075	5.00	13.5	50	100	97.0	2.39	76.0 - 116	30	
Cobalt	0.070	5.00	9.00	50	97.0	95.0	1.75	57.4 - 122	30	
Copper	0.20	5.00	12.1	50	109	104	3.83	74.8 - 119	30	
Lead	0.10	3.00	ND	50	97.1	93.7	3.42	57.9 - 118	30	
Molybdenum	0.050	5.00	ND	50	97.3	94.8	2.69	62.9 - 123	30	
Nickel	0.50	5.00	8.50	50	97.0	94.0	2.67	61.5 - 122	30	
Selenium	0.22	5.00	ND	50	89.1	86.6	2.96	62.0 - 111	30	
Silver	0.15	5.00	ND	50	103	99.8	3.16	75 - 125	30	
Thallium	0.20	5.00	ND	50	93.1	91.0	2.39	39.2 - 125	30	
Vanadium	0.10	5.00	36.2	50	102	99.6	1.16	65.8 - 122	30	
Zinc	0.30	5.00	45.6	50	98.8	92.8	3.21	59.9 - 122	30	

Work Order:	2305065	**Prep Method:**	7471BP	**Prep Date:**	05/15/23	**Prep Batch:**	1150976
Matrix:	**Soil**	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/16/2023	**Analytical Batch:**	474697
Spiked Sample:	2305065-001A						
Units:	mg/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury	0.047	0.50	ND	1.25	103	106	3.08	80 - 120	20	

Work Order:	2305065	**Prep Method:**	7199MP	**Prep Date:**	05/18/23	**Prep Batch:**	1151157
Matrix:	**Soil**	**Analytical Method:**	SW7199	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474857
Spiked Sample:	2305065-003A						
Units:	ug/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Hexavalent Chromium	3.1	10	ND	100	97.3	96.3	0.948	75 - 125	20	

Laboratory Qualifiers and Definitions

DEFINITIONS:

Accuracy/Bias (% Recovery) - The closeness of agreement between an observed value and an accepted reference value.
Blank (Method/Preparation Blank) -MB/PB - An analyte-free matrix to which all reagents are added in the same volumes/proportions as used in sample processing. The method blank is used to document contamination resulting from the analytical process.
Duplicate - a field sample and/or laboratory QC sample prepared in duplicate following all of the same processes and procedures used on the original sample (sample duplicate, LCSD, MSD)
Laboratory Control Sample (LCS ad LCSD) - A known matrix spiked with compounds representative of the target analyte(s). This is used to document laboratory performance.
Matrix - the component or substrate that contains the analyte of interest (e.g., - groundwater, sediment, soil, waste water, etc)
Matrix Spike (MS/MSD) - Client sample spiked with identical concentrations of target analyte (s). The spiking occurs prior to the sample preparation and analysis. They are used to document the precision and bias of a method in a given sample matrix.
Method Detection Limit (MDL) - the minimum concentration of a substance that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero
Practical Quantitation Limit/Reporting Limit/Limit of Quantitation (PQL/RL/LOQ) - a laboratory determined value at 2 to 5 times above the MDL that can be reproduced in a manner that results in a 99% confidence level that the result is both accurate and precise. PQLs/RLs/LODs reflect all preparation factors and/or dilution factors that have been applied to the sample during the preparation and/or analytical processes.
Precision (%RPD) - The agreement among a set of replicate/duplicate measurements without regard to known value of the replicates
Surrogate (S) or (Surr) - An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. Surrogates are used in most organic analysis to demonstrate matrix compatibility with the chosen method of analysis
Tentatively Identified Compound (TIC) - A compound not contained within the analytical calibration standards but present in the GCMS library of defined compounds. When the library is searched for an unknown compound, it can frequently give a tentative identification to the compound based on retention time and primary and secondary ion match. TICs are reported as estimates and are candidates for further investigation.
Units: the unit of measure used to express the reported result - **mg/L** and ***mg/Kg*** (equivalent to PPM - parts per million in **liquid** and ***solid***), **ug/L** and ***ug/Kg*** (equivalent to PPB - parts per billion in **liquid** and ***solid***), **ug/m3**, ***mg/m3***, **ppbv** and ***ppmv*** (all units of measure for reporting concentrations in air), **%** (equivalent to 10000 ppm or 1,000,000 ppb), **ug/Wipe** (concentration found on the surface of a single Wipe usually taken over a 100cm2 surface)

LABORATORY QUALIFIERS

B - Indicates when the analyte is found in the associated method or preparation blank
D - Surrogate is not recoverable due to the necessary dilution of the sample
E - Indicates the reportable value is outside of the calibration range of the instrument but within the linear range of the instrument (unless otherwise noted) Values reported with an E qualifier should be considered as estimated.
H- Indicates that the recommended holding time for the analyte or compound has been exceeded
J- Indicates a value between the method MDL and PQL and that the reported concentration should be considered as estimated rather the quantitative
NA - Not Analyzed
N/A - Not Applicable
ND - Not Detected at a concentration greater than the PQL/RL or, if reported to the MDL, at greater than the MDL.
NR - Not recoverable - a matrix spike concentration is not recoverable due to a concentration within the original sample that is greater than four times the spike concentration added
R- The % RPD between a duplicate set of samples is outside of the absolute values established by laboratory control charts
S- Spike recovery is outside of established method and/or laboratory control limits. Further explanation of the use of this qualifier should be included within a case narrative
X -Used to indicate that a value based on pattern identification is within the pattern range but not typical of the pattern found in standards. Further explanation may or may not be provided within the sample footnote and/or the case narrative.

Sample Receipt Checklist

Client Name: Langan

Project Name: VERNON

Work Order No.: 2305065

Date and Time Received: 5/9/2023 10:06:00AM

Received By: Lorna Imbat

Physically Logged By: Lorna Imbat

Checklist Completed By: Lorna Imbat

Carrier Name: FedEx

Chain of Custody (COC) Information

Chain of custody present?	Yes
Chain of custody signed when relinquished and received?	Yes
Chain of custody agrees with sample labels?	Yes
Custody seals intact on sample bottles?	Not Present

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Not Present
Shipping Container/Cooler In Good Condition?	Yes
Samples in proper container/bottle?	Yes
Samples containers intact?	Yes
Sufficient sample volume for indicated test?	Yes

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes			
Container/Temp Blank temperature in compliance?	Yes	Temperature:	2.0	°C
Water-VOA vials have zero headspace?	No VOA vials submitted			
Water-pH acceptable upon receipt?	N/A			

pH Checked by: N/A

pH Adjusted by: N/A

Comments:

Torrent LABORATORY, INC.

Login Summary Report

Client ID:	TL5493	Langan	**QC Level:**	II
Project Name:	VERNON		**TAT Requested:**	3 Day Std:3
Project # :	721040501		**Date Received:**	5/9/2023
Report Due Date:	5/23/2023		**Time Received:**	10:06 am

Comments:

Work Order # : ***2305065***

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
2305065-001A	B-4-6	05/03/23 9:54	Soil	10/30/23			Hg_S_7471B Cr6_S_7199Mod Met_S_6010B CAM17	
Sample Note:								
2305065-002A	B-4-10	05/03/23 9:58	Soil	10/30/23			Hold Samples	
2305065-003A	B-4-15	05/03/23 10:00	Soil	10/30/23			Hold Samples Met_S_6010B CAM17 Cr6_S_7199Mod Hg_S_7471B	
2305065-004A	B-4-20	05/03/23 10:05	Soil	10/30/23			Hold Samples	
2305065-005A	B-4-25	05/03/23 10:14	Soil	10/30/23			Hold Samples	
2305065-006A	B-4-30	05/03/23 10:23	Soil	10/30/23			Hold Samples	
2305065-007A	B-5-5	05/03/23 13:10	Soil	10/30/23			Hg_S_7471B Cr6_S_7199Mod Met_S_6010B CAM17	
2305065-008A	B-5-10	05/03/23 13:14	Soil	10/30/23			Hold Samples	
2305065-009A	B-5-15	05/03/23 13:18	Soil	10/30/23			Hold Samples Met_S_6010B CAM17 Cr6_S_7199Mod Hg_S_7471B	
2305065-010A	B-5-20	05/03/23 13:23	Soil	10/30/23			Hold Samples	
2305065-011A	B-5-25	05/03/23 13:28	Soil	10/30/23			Hold Samples	
2305065-012A	B-5-30	05/03/23 13:35	Soil	10/30/23			Hold Samples VOC_S_8260B SVO_S_8270CFull	
2305065-013A	B-6-5	05/04/23 13:32	Soil	10/31/23			Hg_S_7471B Cr6_S_7199Mod Met_S_6010B CAM17	

Login Summary Report

Client ID:	TL5493	Langan	**QC Level:**	II
Project Name:	VERNON		**TAT Requested:**	3 Day Std:3
Project # :	721040501		**Date Received:**	5/9/2023
Report Due Date:	5/23/2023		**Time Received:**	10:06 am

Comments:

Work Order # : ***2305065***

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
2305065-014A	B-6-10	05/04/23 13:41	Soil	10/31/23			Hold Samples	
2305065-015A	B-6-15	05/04/23 13:43	Soil	10/31/23			Hold Samples Met_S_6010B CAM17 Cr6_S_7199Mod Hg_S_7471B	
2305065-016A	B-6-20	05/04/23 13:51	Soil	10/31/23			Hold Samples	
2305065-017A	B-6-25	05/04/23 13:59	Soil	10/31/23			Hold Samples	
2305065-018A	B-6-30	05/04/23 14:05	Soil	10/31/23			Hold Samples	
2305065-019A	B-7-6	05/04/23 8:09	Soil	10/31/23			Hg_S_7471B Cr6_S_7199Mod Met_S_6010B CAM17	
2305065-020A	B-7-10	05/04/23 8:37	Soil	10/31/23			Hold Samples	

Torrent LABORATORY, INC.

Torrent LABORATORY, INC.
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

Reset

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 2305065

Company Name: LANGAN ☐ Env. ☐ Non Env.
Address: 515 S FLOWER ST, SUITE 1060
City: LOS ANGELES State: CA Zip Code: 90071
Telephone: ~~765 775~~ 213 280 9903 Cell:
REPORT TO: NCUTLER@LANGAN.com BILL TO: SAME

Project #: 721040501 PO#:
Project Name: VERNON
Comments: HOLD ALL SAMPLES
SAMPLER: M. CHE
EMAIL:

TURNAROUND TIME: MCHE@LANGAN.com
☐ 2 - 8 Hours ☐ 2 Work Days ☐ 5 Work Days
☐ Noon - Nxt Day ☑ 3 Work Days ☐ 7 Work Days
☐ 1 Work Day ☐ 4 Work Days ☐ 10 Work Days

SAMPLE TYPE:
☐ Drinking Water ☐ Storm Water ☐ Air ☐ Waste Water ☐ Wipe ☐ Ground Water ☐ Other ☑ Soil ☐ Product / Bulk

REPORT FORMAT:
☐ Level II - Std. ☐ DoD/DoE Level III ☐ DoD/DoE Level III ☐ Excel - EDD ☐ EDF ☐ Client Specific EDD

ANALYSIS REQUESTED

LAB ID	CANISTER I.D.	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	VOC 8260B	SVOC 8270 SIM	CAM 17 6010B	8081A					REMARKS
001A	NA	B-4-6	5/31/2023 0954	Soil	1	Glass	✓	✓	✓						HOLD
002A		B-4-10	5/31/23 0958	Soil	1	Glass	✓	✓	✓						
003A		B-4-15	5/31/23 1000	Soil	1	Glass	✓	✓	✓						
004A		B-4-20	5/31/23 1005	Soil	1	Glass	✓	✓	✓						
005A		B-4-25	5/31/23 1014	Soil	1	Glass	✓	✓	✓						
006A		B-4-30	5/31/23 1023	Soil	1	Glass	✓	✓	✓						
007A		B-5-5	5/31/23 1310	Soil	1	Glass	✓	✓	✓						
008A		B-5-10	5/31/23 1314	Soil	1	Glass	✓	✓	✓						
009A		B-5-15	5/31/23 1318	Soil	1	Glass	✓	✓	✓						
010A		B-5-20	5/31/23 1323	Soil	1	Glass	✓	✓	✓						

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	Melody Che	MELODY CHE	5/31/23	1630		L.D. Imbat	5-9-23	1006
2	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:

Cooler Temperature 1.9 #32 Samples Received on ice? Yes ☑ No ☐ Method of Shipment FedEx

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 1 of 47

Torrent LABORATORY, INC.

Torrent LABORATORY, INC.
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

Reset

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 230565

Company Name: LANGAN ☐ Env. ☐ Non Env.			Project #: 721040501 PO#:
Address: 515 S FLOWER ST, SUITE 1060			Project Name: VERNON
City: LA	State: CA	Zip Code: 90071	Comments: HOLD ALL SAMPLES
Telephone: 213 280 9903	Cell:		SAMPLER: M. CH
REPORT TO: NICL CUTLER	BILL TO:		EMAIL: NCUTLER@LANGAN.COM, MCHE@langan.com

TURNAROUND TIME:
☐ 2 - 8 Hours ☐ 2 Work Days ☐ 5 Work Days
☐ Noon - Nxt Day ☐ 3 Work Days ☐ 7 Work Days
☐ 1 Work Day ☐ 4 Work Days ☐ 10 Work Days

SAMPLE TYPE:
☐ Drinking Water ☐ Storm Water ☐ Air ☐ Waste Water ☐ Wipe ☐ Ground Water ☐ Other ☐ Soil ☐ Product / Bulk

REPORT FORMAT:
☐ Level II - Std. ☐ DoD/DoE Level III ☐ DoD/DoE Level III ☐ Excel - EDD ☐ EDF ☐ Client Specific EDD

ANALYSIS REQUESTED

LAB ID	CANISTER I.D.	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	VOC 8260B	SVOC 8270SIM	CAM 17 6010B	REMARKS
-011A		B-5-25	5/3/23 1328	Soil	1	Glass	✓	✓	✓	HOLD
-012A		B-5-30	5/3/23 1335	Soil	1	Glass	✓	✓	✓	
-013A		B-6-5	5/4/23 1332	Soil	1	Glass	✓	✓	✓	
-014A		B-6-10	5/4/23 1341	Soil	1	Glass	✓	✓	✓	
-015A		B-6-15	5/4/23 1343	Soil	1	Glass	✓	✓	✓	
-016A		B-6-20	5/4/23 1351	Soil	1	Glass	✓	✓	✓	
-017A		B-6-25	5/4/23 1359	Soil	1	Glass	✓	✓	✓	
-018A		B-6-30	5/4/23 1405	Soil	1	Glass	✓	✓	✓	
-019A		B-7-6	5/4/23 0809	Soil	1	Glass	✓	✓	✓	
-020A		B-7-10	5/4/23 0837	Soil	1	Glass	✓	✓	✓	

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	Melody Che	MELODY CHE	5/4/23 5/5/23	Melody Che 1630		I. D. Imlaal	5-9-23	1006
2	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:

Cooler Temperature 1.9 #3 Samples Received on ice? Yes ☒ No ☐ Method of Shipment Fed EX

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 2 of 47

Gmail Torrent Laboratory, Inc. <pm@torrentlaboratory.com>

RE: [External] Re: Sample order for PO: 721040501

1 message

Nick Cutler <ncutler@langan.com> Wed, May 10, 2023 at 8:42 PM
To: "Torrent Laboratory, Inc." <pm@torrentlaboratory.com>, Katherine Thomas <kthomas@langan.com>
Cc: "melanie.moran@torrentlaboratory.com" <melanie.moran@torrentlaboratory.com>, Melody Che <mche@langan.com>

Hi Kathie –

Can you please run the analyses on a 3-day TAT per the table below?

Sample ID	Metals 6010B	Pesticides 8081A	PCBs 8082	ACM PLM
B-1-5	1	1		1
B-2-5	1	1	1	
B-3-5	1	1		
B-4-6	1			
B-5-5	1			
B-6-5	1			
B-7-6	1			
B-8-5	1	1		
B-9-5	1			
B-11-5	1	1	1	
B-12-5	1		1	
B-13-5	1		1	

Cordially,
Nick Cutler

483 Sinclair Frontage Rd., Milpitas, CA 95035 | tel: 408.263.5258 | fax: 408.263.8293 | www.torrentlab.com

Torrent
LABORATORY, INC.

Langan
135 Main Street, Suite 1500
San Francisco, California 94105
Tel: 415.955.5200

RE: VERNON

Work Order No.: 2305066 Rev: 3

Dear Nick Cutler:

Torrent Laboratory, Inc. received 18 sample(s) on May 09, 2023 for the analyses presented in the following Report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.

Torrent Laboratory, Inc. is certified by the State of California, ELAP #1991. If you have any questions regarding these test results, please feel free to contact the Project Management Team at (408)263-5258; ext 204.



Kathie Evans
Project Manager

May 19, 2023
Date

Date: 5/19/2023

Client: Langan

Project: VERNON

Work Order: 2305066

CASE NARRATIVE

Unless otherwise indicated in the following narrative, no issues encountered with the receiving, preparation, analysis or reporting of the results associated with this work order.

Unless otherwise indicated in the following narrative, no results have been method and/or field blank corrected.

Reported results relate only to the items/samples tested by the laboratory.

This report shall not be reproduced, except in full, without the written approval of Torrent Laboratory, Inc.

Asbestos analysis was sub-contracted to EMSL analytical. Sub-contract data will appear under a separate cover.

REVISIONS

Report revised to include sub-contracted Asbestos data. Sub-contract data appears as an attachment to the Torrent generated report.

Rev. 1 (5/17/23)

Report revised to include additionally requested data

Rev. 2 (5/19/23)

Report revised to include additionally requested SVOC and VOC data.

Rev. 3 (5/23/23)

Torrent LABORATORY, INC.

Sample Result Summary

Report prepared for: Nick Cutler
Langan

Date Received: 05/09/23
Date Reported: 05/19/23

B-7-15 2305066-001

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Barium	SW6010B	1	0.055	5.00	57.5	mg/Kg
Chromium	SW6010B	1	0.075	5.00	10.4	mg/Kg
Copper	SW6010B	1	0.20	5.00	10.5	mg/Kg
Lead	SW6010B	1	0.10	3.00	5.70	mg/Kg
Nickel	SW6010B	1	0.50	5.00	6.95	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	23.3	mg/Kg
Zinc	SW6010B	1	0.30	5.00	28.2	mg/Kg

B-7-30 2305066-004

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

B-1-5 2305066-006

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	2.62	mg/Kg
Barium	SW6010B	1	0.055	5.00	171	mg/Kg
Chromium	SW6010B	1	0.075	5.00	24.5	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	13.8	mg/Kg
Copper	SW6010B	1	0.20	5.00	28.9	mg/Kg
Lead	SW6010B	1	0.10	3.00	10.2	mg/Kg
Nickel	SW6010B	1	0.50	5.00	15.6	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	53.5	mg/Kg
Zinc	SW6010B	1	0.30	5.00	91.5	mg/Kg

B-1-15 2305066-008

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Barium	SW6010B	1	0.055	5.00	43.2	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	13.8	mg/Kg
Zinc	SW6010B	1	0.30	5.00	14.7	mg/Kg

B-10-5 2305066-012

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	1.50	mg/Kg
Barium	SW6010B	1	0.055	5.00	84.0	mg/Kg
Chromium	SW6010B	1	0.075	5.00	12.0	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	7.35	mg/Kg
Copper	SW6010B	1	0.20	5.00	10.6	mg/Kg
Nickel	SW6010B	1	0.50	5.00	7.15	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	33.7	mg/Kg
Zinc	SW6010B	1	0.30	5.00	34.3	mg/Kg

Torrent LABORATORY, INC.

Sample Result Summary

Report prepared for: Nick Cutler
Langan

Date Received: 05/09/23
Date Reported: 05/19/23

B-10-15 2305066-014

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	1.61	mg/Kg
Barium	SW6010B	1	0.055	5.00	90.5	mg/Kg
Chromium	SW6010B	1	0.075	5.00	12.2	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	8.20	mg/Kg
Copper	SW6010B	1	0.20	5.00	11.2	mg/Kg
Nickel	SW6010B	1	0.50	5.00	7.65	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	35.5	mg/Kg
Zinc	SW6010B	1	0.30	5.00	39.5	mg/Kg

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-7-15	**Lab Sample ID:**	2305066-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 8:47		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	3:44	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-7-15	**Lab Sample ID:**	2305066-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 8:47		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/17/23 7:15:00PM
Prep Batch ID:	1151067	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/18/23	13:35	BJAY	474773

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-7-15	**Lab Sample ID:**	2305066-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 8:47		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/17/23 7:00:00PM
Prep Batch ID:	1151065	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:19	AT	474846
Arsenic	SW6010B	1	0.15	1.30	ND		mg/Kg	05/18/23	20:19	AT	474846
Barium	SW6010B	1	0.055	5.00	**57.5**		mg/Kg	05/18/23	20:19	AT	474846
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/18/23	20:19	AT	474846
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/18/23	20:19	AT	474846
Chromium	SW6010B	1	0.075	5.00	**10.4**		mg/Kg	05/18/23	20:19	AT	474846
Cobalt	SW6010B	1	0.070	5.00	ND		mg/Kg	05/18/23	20:19	AT	474846
Copper	SW6010B	1	0.20	5.00	**10.5**		mg/Kg	05/18/23	20:19	AT	474846
Lead	SW6010B	1	0.10	3.00	**5.70**		mg/Kg	05/18/23	20:19	AT	474846
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:19	AT	474846
Nickel	SW6010B	1	0.50	5.00	**6.95**		mg/Kg	05/18/23	20:19	AT	474846
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/18/23	20:19	AT	474846
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/18/23	20:19	AT	474846
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:19	AT	474846
Vanadium	SW6010B	1	0.10	5.00	**23.3**		mg/Kg	05/18/23	20:19	AT	474846
Zinc	SW6010B	1	0.30	5.00	**28.2**		mg/Kg	05/18/23	20:19	AT	474846

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-7-30	**Lab Sample ID:**	2305066-004A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 9:05		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
N-Nitrosodimethylamine	SW8270C	1	46.9	720	ND		ug/Kg	05/22/23	0:12	MT	474888
Phenol	SW8270C	1	43.8	288	ND		ug/Kg	05/22/23	0:12	MT	474888
Bis(2-chloroethyl)ether	SW8270C	1	13.3	144	ND		ug/Kg	05/22/23	0:12	MT	474888
2-Chlorophenol	SW8270C	1	47.7	288	ND		ug/Kg	05/22/23	0:12	MT	474888
1,3-Dichlorobenzene	SW8270C	1	13.1	144	ND		ug/Kg	05/22/23	0:12	MT	474888
1,4-Dichlorobenzene	SW8270C	1	14.6	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Benzyl Alcohol	SW8270C	1	20.5	288	ND		ug/Kg	05/22/23	0:12	MT	474888
1,2-Dichlorobenzene	SW8270C	1	13.5	144	ND		ug/Kg	05/22/23	0:12	MT	474888
2-Methylphenol (o-Cresol)	SW8270C	1	29.3	288	ND		ug/Kg	05/22/23	0:12	MT	474888
N-Methyl-2-Pyrrolidone (NMP)	SW8270C	1	68.0	720	ND		ug/Kg	05/22/23	0:12	MT	474888
3-/4-Methylphenol (p-/m-Cresol)	SW8270C	1	31.3	288	ND		ug/Kg	05/22/23	0:12	MT	474888
N-nitroso-di-n-propylamine	SW8270C	1	13.2	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Hexachloroethane	SW8270C	1	17.1	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Nitrobenzene	SW8270C	1	12.8	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Isophorone	SW8270C	1	12.2	144	ND		ug/Kg	05/22/23	0:12	MT	474888
2-Nitrophenol	SW8270C	1	25.4	288	ND		ug/Kg	05/22/23	0:12	MT	474888
2,4-Dimethylphenol	SW8270C	1	22.8	288	ND		ug/Kg	05/22/23	0:12	MT	474888
Benzoic Acid	SW8270C	1	41.7	288	ND		ug/Kg	05/22/23	0:12	MT	474888
Bis(2-Chloroethoxy)methane	SW8270C	1	9.79	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Bis(2-chloroisopropyl)ether	SW8270C	1	12.6	144	ND		ug/Kg	05/22/23	0:12	MT	474888
2,4-Dichlorophenol	SW8270C	1	39.3	288	ND		ug/Kg	05/22/23	0:12	MT	474888
1,2,4-Trichlorobenzene	SW8270C	1	11.8	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Naphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/22/23	0:12	MT	474888
2,6-Dichlorophenol	SW8270C	1	35.8	288	ND		ug/Kg	05/22/23	0:12	MT	474888
Hexachloro-1,3-butadiene	SW8270C	1	8.34	144	ND		ug/Kg	05/22/23	0:12	MT	474888
4-Chloro-3-methylphenol	SW8270C	1	33.8	288	ND		ug/Kg	05/22/23	0:12	MT	474888
2-Methylnaphthalene	SW8270C	1	10.4	144	ND		ug/Kg	05/22/23	0:12	MT	474888
1-Methylnaphthalene	SW8270C	1	12.2	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Hexachlorocyclopentadiene	SW8270C	1	12.9	144	ND		ug/Kg	05/22/23	0:12	MT	474888
2,4,6-Trichlorophenol	SW8270C	1	35.9	288	ND		ug/Kg	05/22/23	0:12	MT	474888
2,4,5-Trichlorophenol	SW8270C	1	33.4	288	ND		ug/Kg	05/22/23	0:12	MT	474888
2-Chloronaphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/22/23	0:12	MT	474888
1,4-Dinitrobenzene	SW8270C	1	10.3	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Dimethyl phthalate	SW8270C	1	14.2	720	ND		ug/Kg	05/22/23	0:12	MT	474888
1,3-Dinitrobenzene	SW8270C	1	10.4	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Acenaphthylene	SW8270C	1	8.28	144	ND		ug/Kg	05/22/23	0:12	MT	474888
2,6-Dinitrotoluene	SW8270C	1	11.3	144	ND		ug/Kg	05/22/23	0:12	MT	474888
1,2-Dinitrobenzene	SW8270C	1	15.8	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Acenaphthene	SW8270C	1	10.7	144	ND		ug/Kg	05/22/23	0:12	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-7-30	**Lab Sample ID:**	2305066-004A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 9:05		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2,4-Dinitrophenol	SW8270C	1	77.6	720	ND		ug/Kg	05/22/23	0:12	MT	474888
4-Nitrophenol	SW8270C	1	54.7	720	ND		ug/Kg	05/22/23	0:12	MT	474888
Dibenzofuran	SW8270C	1	11.2	144	ND		ug/Kg	05/22/23	0:12	MT	474888
2,4-Dinitrotoluene	SW8270C	1	12.1	144	ND		ug/Kg	05/22/23	0:12	MT	474888
2,3,5,6-Tetrachlorophenol	SW8270C	1	27.6	288	ND		ug/Kg	05/22/23	0:12	MT	474888
2,3,4,6-Tetrachlorophenol	SW8270C	1	31.5	288	ND		ug/Kg	05/22/23	0:12	MT	474888
Diethylphthalate	SW8270C	1	13.6	720	ND		ug/Kg	05/22/23	0:12	MT	474888
Fluorene	SW8270C	1	10.3	144	ND		ug/Kg	05/22/23	0:12	MT	474888
4-Chlorophenyl-phenylether	SW8270C	1	9.32	144	ND		ug/Kg	05/22/23	0:12	MT	474888
4,6-Dinitro-2-methylphenol	SW8270C	1	13.4	288	ND		ug/Kg	05/22/23	0:12	MT	474888
Diphenylamine	SW8270C	1	13.0	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Azobenzene	SW8270C	1	114	144	ND		ug/Kg	05/22/23	0:12	MT	474888
4-Bromophenyl-phenylether	SW8270C	1	8.23	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Hexachlorobenzene	SW8270C	1	8.66	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Pentachlorophenol	SW8270C	1	25.0	288	ND		ug/Kg	05/22/23	0:12	MT	474888
Phenanthrene	SW8270C	1	9.32	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Anthracene	SW8270C	1	8.91	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Carbazole	SW8270C	1	10.7	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Di-n-butylphthalate	SW8270C	1	13.5	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Fluoranthene	SW8270C	1	10.0	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Benzidine	SW8270C	1	147	147	ND		ug/Kg	05/22/23	0:12	MT	474888
Pyrene	SW8270C	1	12.0	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Butylbenzylphthalate	SW8270C	1	21.0	720	ND		ug/Kg	05/22/23	0:12	MT	474888
Benzo(a)anthracene	SW8270C	1	9.80	144	ND		ug/Kg	05/22/23	0:12	MT	474888
3,3-Dichlorobenzidine	SW8270C	1	118	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Chrysene	SW8270C	1	15.2	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Bis(2-Ethylhexyl)phthalate	SW8270C	1	15.3	720	ND		ug/Kg	05/22/23	0:12	MT	474888
Di-n-Octylphthalate	SW8270C	1	12.3	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Benzo(b)fluorathene	SW8270C	1	12.0	144	ND		ug/Kg	05/22/23	0:12	MT	474888
benzo(k)fluorathene	SW8270C	1	8.16	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Benzo(a)pyrene	SW8270C	1	9.80	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Indeno(1,2,3-c,d)pyrene	SW8270C	1	13.8	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Dibenzo(a,h)anthracene	SW8270C	1	12.7	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Benzo(g,h,i)perylene	SW8270C	1	16.7	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Pyridine	SW8270C	1	43.8	720	ND		ug/Kg	05/22/23	0:12	MT	474888
			Acceptance Limits								
2-Fluorophenol (S)	SW8270C		25 - 121		**58.8**		%	05/22/23	0:12	MT	474888
Phenol-d6 (S)	SW8270C		24 - 113		**61.0**		%	05/22/23	0:12	MT	474888
2,4,6-Tribromophenol (S)	SW8270C		19 - 122		**59.1**		%	05/22/23	0:12	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-7-30	**Lab Sample ID:**	2305066-004A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 9:05		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2-Fluorobiphenyl (S)	SW8270C		45 - 143		**65.2**		%	05/22/23	0:12	MT	474888
Nitrobenzene-d5 (S)	SW8270C		23 - 120		**61.7**		%	05/22/23	0:12	MT	474888
p-Terphenyl-d14 (S)	SW8270C		18 - 137		**83.4**		%	05/22/23	0:12	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-7-30	**Lab Sample ID:**	2305066-004A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 9:05		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/22/23 9:55:00AM
Prep Batch ID:	1151218	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	1.2	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Chloromethane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Vinyl Chloride	SW8260B	1	2.0	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Bromomethane	SW8260B	1	2.7	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Chloroethane	SW8260B	1	3.0	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Trichlorofluoromethane	SW8260B	1	2.1	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,1-Dichloroethene	SW8260B	1	2.0	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Freon 113	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Methylene Chloride	SW8260B	1	7.1	10	ND		ug/Kg	05/22/23	21:36	BP	474921
trans-1,2-Dichloroethene	SW8260B	1	2.1	10	ND		ug/Kg	05/22/23	21:36	BP	474921
MTBE	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	21:36	BP	474921
TBA	SW8260B	1	12	50	ND		ug/Kg	05/22/23	21:36	BP	474921
Diisopropyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,1-Dichloroethane	SW8260B	1	2.2	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Ethyl tert-Butyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	21:36	BP	474921
cis-1,2-Dichloroethene	SW8260B	1	2.2	10	ND		ug/Kg	05/22/23	21:36	BP	474921
2,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Bromochloromethane	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Chloroform	SW8260B	1	2.4	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Carbon Tetrachloride	SW8260B	1	2.1	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,1,1-Trichloroethane	SW8260B	1	2.1	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,1-Dichloropropene	SW8260B	1	2.0	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Benzene	SW8260B	1	2.2	10	ND		ug/Kg	05/22/23	21:36	BP	474921
TAME	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,2-Dichloroethane	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Trichloroethene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Dibromomethane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Bromodichloromethane	SW8260B	1	2.0	10	ND		ug/Kg	05/22/23	21:36	BP	474921
cis-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Toluene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Tetrachloroethene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:36	BP	474921
trans-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,1,2-Trichloroethane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Dibromochloromethane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,3-Dichloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,2-Dibromoethane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Chlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Ethylbenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:36	BP	474921

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-7-30	**Lab Sample ID:**	2305066-004A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 9:05		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/22/23 9:55:00AM
Prep Batch ID:	1151218	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	21:36	BP	474921
m,p-Xylene	SW8260B	1	3.2	10	ND		ug/Kg	05/22/23	21:36	BP	474921
o-Xylene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Styrene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Bromoform	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Isopropyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:36	BP	474921
n-Propylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Bromobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,1,2,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	21:36	BP	474921
2-Chlorotoluene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,3,5-Trimethylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,2,3-Trichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	21:36	BP	474921
4-Chlorotoluene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:36	BP	474921
tert-Butylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,2,4-Trimethylbenzene	SW8260B	1	1.4	10	ND		ug/Kg	05/22/23	21:36	BP	474921
sec-Butyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:36	BP	474921
p-Isopropyltoluene	SW8260B	1	1.5	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,3-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,4-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:36	BP	474921
n-Butylbenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,2-Dichlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,2-Dibromo-3-Chloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Hexachlorobutadiene	SW8260B	1	1.4	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,2,4-Trichlorobenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Naphthalene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,2,3-Trichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:36	BP	474921
2-Butanone	SW8260B	1	2.3	10.0	ND		ug/Kg	05/22/23	21:36	BP	474921
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**124**		%	05/22/23	21:36	BP	474921
(S) Toluene-d8	SW8260B		55.2 - 133		**101**		%	05/22/23	21:36	BP	474921
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**96.2**		%	05/22/23	21:36	BP	474921

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-1-5	**Lab Sample ID:**	2305066-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 10:55		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	8:42	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-1-5	**Lab Sample ID:**	2305066-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 10:55		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/15/23	5:45:00PM
Prep Batch ID:	1150976	**Prep Analyst:**	AJNG	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/16/23	13:48	ERR	474697

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-1-5	**Lab Sample ID:**	2305066-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 10:55		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/15/23 5:15:00PM
Prep Batch ID:	1150962	**Prep Analyst:**	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	20:56	AT	474699
Arsenic	SW6010B	1	0.15	1.30	**2.62**		mg/Kg	05/15/23	20:56	AT	474699
Barium	SW6010B	1	0.055	5.00	**171**		mg/Kg	05/15/23	20:56	AT	474699
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/15/23	20:56	AT	474699
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/15/23	20:56	AT	474699
Chromium	SW6010B	1	0.075	5.00	**24.5**		mg/Kg	05/15/23	20:56	AT	474699
Cobalt	SW6010B	1	0.070	5.00	**13.8**		mg/Kg	05/15/23	20:56	AT	474699
Copper	SW6010B	1	0.20	5.00	**28.9**		mg/Kg	05/15/23	20:56	AT	474699
Lead	SW6010B	1	0.10	3.00	**10.2**		mg/Kg	05/15/23	20:56	AT	474699
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	20:56	AT	474699
Nickel	SW6010B	1	0.50	5.00	**15.6**		mg/Kg	05/15/23	20:56	AT	474699
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/15/23	20:56	AT	474699
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/15/23	20:56	AT	474699
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/15/23	20:56	AT	474699
Vanadium	SW6010B	1	0.10	5.00	**53.5**		mg/Kg	05/15/23	20:56	AT	474699
Zinc	SW6010B	1	0.30	5.00	**91.5**		mg/Kg	05/15/23	20:56	AT	474699

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-1-5	**Lab Sample ID:**	2305066-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 10:55		
SDG:			

Prep Method:	3546_OCP	**Prep Batch Date/Time:**	5/13/23 10:20:00AM
Prep Batch ID:	1150929	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
alpha-BHC	SW8081B	1	0.25	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
gamma-BHC (Lindane)	SW8081B	1	0.71	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
beta-BHC	SW8081B	1	0.44	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
delta-BHC	SW8081B	1	0.65	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
Heptachlor	SW8081B	1	0.27	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
Aldrin	SW8081B	1	0.29	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
Heptachlor Epoxide	SW8081B	1	0.31	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
gamma-Chlordane	SW8081B	1	1.5	3.0	ND		ug/Kg	05/13/23	16:16	LA	474648
alpha-Chlordane	SW8081B	1	0.36	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
4,4'-DDE	SW8081B	1	0.61	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
Endosulfan I	SW8081B	1	0.29	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
Dieldrin	SW8081B	1	0.25	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
Endrin	SW8081B	1	0.79	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
4,4'-DDD	SW8081B	1	0.64	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
Endosulfan II	SW8081B	1	0.34	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
4,4'-DDT	SW8081B	1	0.74	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
Endrin Aldehyde	SW8081B	1	0.51	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
Methoxychlor	SW8081B	1	2.6	6.0	ND		ug/Kg	05/13/23	16:16	LA	474648
Endosulfan Sulfate	SW8081B	1	0.51	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
Endrin Ketone	SW8081B	1	0.43	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
Chlordane, Technical	SW8081B	1	2.7	20	ND		ug/Kg	05/13/23	16:16	LA	474648
Toxaphene	SW8081B	1	22	50	ND		ug/Kg	05/13/23	16:16	LA	474648
			Acceptance Limits								
Tetrachloro-M-Xylene (S)	SW8081B		48 - 125		**45.7**	S	%	05/13/23	16:16	LA	474648
Decachlorobiphenyl (S)	SW8081B		38 - 135		**47.6**		%	05/13/23	16:16	LA	474648

NOTE: S-TCMX surrogate outside of control limits due to possible matrix interference

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-1-15	**Lab Sample ID:**	2305066-008A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 11:06		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	4:05	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-1-15	**Lab Sample ID:**	2305066-008A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 11:06		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/17/23 7:15:00PM
Prep Batch ID:	1151067	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/18/23	13:37	BJAY	474773

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-1-15	**Lab Sample ID:**	2305066-008A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 11:06		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/17/23 7:00:00PM
Prep Batch ID:	1151065	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:24	AT	474846
Arsenic	SW6010B	1	0.15	1.30	ND		mg/Kg	05/18/23	20:24	AT	474846
Barium	SW6010B	1	0.055	5.00	**43.2**		mg/Kg	05/18/23	20:24	AT	474846
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/18/23	20:24	AT	474846
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/18/23	20:24	AT	474846
Chromium	SW6010B	1	0.075	5.00	ND		mg/Kg	05/18/23	20:24	AT	474846
Cobalt	SW6010B	1	0.070	5.00	ND		mg/Kg	05/18/23	20:24	AT	474846
Copper	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:24	AT	474846
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/18/23	20:24	AT	474846
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:24	AT	474846
Nickel	SW6010B	1	0.50	5.00	ND		mg/Kg	05/18/23	20:24	AT	474846
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/18/23	20:24	AT	474846
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/18/23	20:24	AT	474846
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:24	AT	474846
Vanadium	SW6010B	1	0.10	5.00	**13.8**		mg/Kg	05/18/23	20:24	AT	474846
Zinc	SW6010B	1	0.30	5.00	**14.7**		mg/Kg	05/18/23	20:24	AT	474846

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-10-5	**Lab Sample ID:**	2305066-012A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 14:27		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	4:26	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-10-5	**Lab Sample ID:**	2305066-012A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 14:27		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/17/23 7:15:00PM
Prep Batch ID:	1151067	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/18/23	13:39	BJAY	474773

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-10-5	**Lab Sample ID:**	2305066-012A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 14:27		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/17/23 7:00:00PM
Prep Batch ID:	1151065	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:26	AT	474846
Arsenic	SW6010B	1	0.15	1.30	**1.50**		mg/Kg	05/18/23	20:26	AT	474846
Barium	SW6010B	1	0.055	5.00	**84.0**		mg/Kg	05/18/23	20:26	AT	474846
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/18/23	20:26	AT	474846
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/18/23	20:26	AT	474846
Chromium	SW6010B	1	0.075	5.00	**12.0**		mg/Kg	05/18/23	20:26	AT	474846
Cobalt	SW6010B	1	0.070	5.00	**7.35**		mg/Kg	05/18/23	20:26	AT	474846
Copper	SW6010B	1	0.20	5.00	**10.6**		mg/Kg	05/18/23	20:26	AT	474846
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/18/23	20:26	AT	474846
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:26	AT	474846
Nickel	SW6010B	1	0.50	5.00	**7.15**		mg/Kg	05/18/23	20:26	AT	474846
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/18/23	20:26	AT	474846
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/18/23	20:26	AT	474846
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:26	AT	474846
Vanadium	SW6010B	1	0.10	5.00	**33.7**		mg/Kg	05/18/23	20:26	AT	474846
Zinc	SW6010B	1	0.30	5.00	**34.3**		mg/Kg	05/18/23	20:26	AT	474846

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-10-15	**Lab Sample ID:**	2305066-014A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 14:40		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	4:48	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-10-15	**Lab Sample ID:**	2305066-014A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 14:40		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/17/23 7:15:00PM
Prep Batch ID:	1151067	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/18/23	13:41	BJAY	474773

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-10-15	**Lab Sample ID:**	2305066-014A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 14:40		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/17/23 7:00:00PM
Prep Batch ID:	1151065	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:27	AT	474846
Arsenic	SW6010B	1	0.15	1.30	**1.61**		mg/Kg	05/18/23	20:27	AT	474846
Barium	SW6010B	1	0.055	5.00	**90.5**		mg/Kg	05/18/23	20:27	AT	474846
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/18/23	20:27	AT	474846
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/18/23	20:27	AT	474846
Chromium	SW6010B	1	0.075	5.00	**12.2**		mg/Kg	05/18/23	20:27	AT	474846
Cobalt	SW6010B	1	0.070	5.00	**8.20**		mg/Kg	05/18/23	20:27	AT	474846
Copper	SW6010B	1	0.20	5.00	**11.2**		mg/Kg	05/18/23	20:27	AT	474846
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/18/23	20:27	AT	474846
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:27	AT	474846
Nickel	SW6010B	1	0.50	5.00	**7.65**		mg/Kg	05/18/23	20:27	AT	474846
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/18/23	20:27	AT	474846
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/18/23	20:27	AT	474846
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:27	AT	474846
Vanadium	SW6010B	1	0.10	5.00	**35.5**		mg/Kg	05/18/23	20:27	AT	474846
Zinc	SW6010B	1	0.30	5.00	**39.5**		mg/Kg	05/18/23	20:27	AT	474846

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305066	**Prep Method:**	3546_OCP	**Prep Date:**	05/13/23	**Prep Batch:**	1150929
Matrix:	Soil	**Analytical Method:**	SW8081B	**Analyzed Date:**	5/13/2023	**Analytical Batch:**	474648
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
alpha-BHC	0.25	2.0	ND	
gamma-BHC (Lindane)	0.71	2.0	ND	
beta-BHC	0.44	2.0	ND	
delta-BHC	0.65	2.0	ND	
Heptachlor	0.27	2.0	ND	
Aldrin	0.29	2.0	ND	
Heptachlor Epoxide	0.31	2.0	ND	
gamma-Chlordane	1.5	3.0	ND	
alpha-Chlordane	0.36	2.0	ND	
4,4'-DDE	0.61	2.0	1.97	
Endosulfan I	0.29	2.0	ND	
Dieldrin	0.25	2.0	ND	
Endrin	0.79	2.0	ND	
4,4'-DDD	0.64	2.0	ND	
Endosulfan II	0.34	2.0	ND	
4,4'-DDT	0.74	2.0	ND	
Endrin Aldehyde	0.51	2.0	ND	
Methoxychlor	2.6	6.0	ND	
Endosulfan Sulfate	0.51	2.0	ND	
Endrin Ketone	0.43	2.0	ND	
Chlordane, Technical	2.7	20	ND	
Toxaphene	22	50	ND	
Tetrachloro-M-Xylene (S)			89.6	
Decachlorobiphenyl (S)			92.9	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305066	**Prep Method:**	3050B	**Prep Date:**	05/15/23	**Prep Batch:**	1150962
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/15/2023	**Analytical Batch:**	474699
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Antimony	0.050	5.00	ND	
Arsenic	0.15	1.30	ND	
Barium	0.055	5.00	0.14	J
Beryllium	0.055	5.00	ND	
Cadmium	0.10	0.750	ND	
Chromium	0.075	5.00	0.13	J
Cobalt	0.070	5.00	ND	
Copper	0.20	5.00	ND	
Lead	0.10	3.00	ND	
Molybdenum	0.050	5.00	0.050	
Nickel	0.50	5.00	ND	
Selenium	0.35	1.10	ND	
Silver	0.15	0.500	ND	
Thallium	0.55	5.00	ND	
Vanadium	0.10	5.00	ND	
Zinc	0.30	5.00	3.2	J

Work Order:	2305066	**Prep Method:**	7471BP	**Prep Date:**	05/15/23	**Prep Batch:**	1150976
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/16/2023	**Analytical Batch:**	474697
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Mercury	0.083	0.50	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305066	**Prep Method:**	3050B	**Prep Date:**	05/17/23	**Prep Batch:**	1151065
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474846
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Antimony	0.050	5.00	0.065	
Arsenic	0.15	1.30	ND	
Barium	0.055	5.00	0.19	
Beryllium	0.055	5.00	ND	
Cadmium	0.10	0.750	ND	
Chromium	0.075	5.00	0.16	
Cobalt	0.070	5.00	ND	
Copper	0.20	5.00	ND	
Lead	0.10	3.00	ND	
Molybdenum	0.050	5.00	0.15	
Nickel	0.50	5.00	ND	
Selenium	0.35	1.10	ND	
Silver	0.15	0.500	ND	
Thallium	0.55	5.00	ND	
Vanadium	0.10	5.00	ND	
Zinc	0.30	5.00	ND	

Work Order:	2305066	**Prep Method:**	7471BP	**Prep Date:**	05/17/23	**Prep Batch:**	1151067
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474773
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Mercury	0.083	0.50	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305066	**Prep Method:**	3546_BNA	**Prep Date:**	05/19/23	**Prep Batch:**	1151137
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474887
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
N-Nitrosodimethylamine	46.9	720	ND		
Phenol	43.8	288	ND		
Bis(2-chloroethyl)ether	13.3	144	ND		
2-Chlorophenol	47.7	288	ND		
1,3-Dichlorobenzene	13.1	144	ND		
1,4-Dichlorobenzene	14.6	144	ND		
Benzyl Alcohol	20.5	288	ND		
1,2-Dichlorobenzene	13.5	144	ND		
2-Methylphenol (o-Cresol)	29.3	288	ND		
N-Methyl-2-Pyrrolidone (NMP)	68.0	720	ND		
	12.6	144	ND		
3-/4-Methylphenol (p-/m-Cresol)	31.3	288	ND		
N-nitroso-di-n-propylamine	13.2	144	ND		
Hexachloroethane	17.1	144	ND		
Nitrobenzene	12.8	144	ND		
Isophorone	12.2	144	ND		
2-Nitrophenol	25.4	288	ND		
2,4-Dimethylphenol	22.8	288	ND		
Benzoic Acid	41.7	288	ND		
Bis(2-Chloroethoxy)methane	9.79	144	ND		
Bis(2-chloroisopropyl)ether	12.6	144	ND		
2,4-Dichlorophenol	39.3	288	ND		
1,2,4-Trichlorobenzene	11.8	144	ND		
Naphthalene	10.6	144	ND		
2,6-Dichlorophenol	35.8	288	ND		
Hexachloro-1,3-butadiene	8.34	144	ND		
4-Chloro-3-methylphenol	33.8	288	ND		
2-Methylnaphthalene	10.4	144	ND		
1-Methylnaphthalene	12.2	144	ND		
Hexachlorocyclopentadiene	12.9	144	ND		
2,4,6-Trichlorophenol	35.9	288	ND		
2,4,5-Trichlorophenol	33.4	288	ND		
2-Chloronaphthalene	10.6	144	ND		
1,4-Dinitrobenzene	10.3	144	ND		
Dimethyl phthalate	14.2	720	ND		
1,3-Dinitrobenzene	10.4	144	ND		
Acenaphthylene	8.28	144	ND		
2,6-Dinitrotoluene	11.3	144	ND		
1,2-Dinitrobenzene	15.8	144	ND		
Acenaphthene	10.7	144	ND		
2,4-Dinitrophenol	77.6	720	ND		
4-Nitrophenol	54.7	720	ND		
Dibenzofuran	11.2	144	ND		
2,4-Dinitrotoluene	12.1	144	ND		
2,3,5,6-Tetrachlorophenol	27.6	288	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305066	**Prep Method:**	3546_BNA	**Prep Date:**	05/19/23	**Prep Batch:**	1151137
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474887
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
2,3,4,6-Tetrachlorophenol	31.5	288	ND	
Diethylphthalate	13.6	720	79.2	
Fluorene	10.3	144	ND	
4-Chlorophenyl-phenylether	9.32	144	ND	
4,6-Dinitro-2-methylphenol	13.4	288	ND	
Diphenylamine	13.0	144	ND	
Azobenzene	114	144	ND	
4-Bromophenyl-phenylether	8.23	144	ND	
Hexachlorobenzene	8.66	144	ND	
Pentachlorophenol	25.0	288	ND	
Phenanthrene	9.32	144	ND	
Anthracene	8.91	144	ND	
Carbazole	10.7	144	ND	
Di-n-butylphthalate	13.5	144	ND	
Fluoranthene	10.0	147	ND	
Benzidine	147	144	ND	
Pyrene	12.0	144	ND	
Butylbenzylphthalate	21.0	720	ND	
Benzo(a)anthracene	9.80	144	ND	
3,3-Dichlorobenzidine	118	144	ND	
Chrysene	15.2	144	ND	
Bis(2-Ethylhexyl)phthalate	15.3	720	ND	
Di-n-Octylphthalate	12.3	144	ND	
Benzo(b)fluorathene	12.0	144	ND	
benzo(k)fluorathene	8.16	144	ND	
Benzo(a)pyrene	9.80	144	ND	
Indeno(1,2,3-c,d)pyrene	13.8	144	ND	
Dibenzo(a,h)anthracene	12.7	144	ND	
Benzo(g,h,i)perylene	12.7	144	ND	
Pyridine	43.8	720	ND	
2-Fluorophenol (S)			88.1	
Phenol-d6 (S)			105	
2,4,6-Tribromophenol (S)			96.0	
2-Fluorobiphenyl (S)			80.2	
Nitrobenzene-d5 (S)			88.9	
p-Terphenyl-d14 (S)			91.7	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305066	**Prep Method:**	7199MP	**Prep Date:**	05/18/23	**Prep Batch:**	1151157
Matrix:	Soil	**Analytical Method:**	SW7199	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474857
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Hexavalent Chromium	3.1	10	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305066	**Prep Method:**	5035	**Prep Date:**	05/22/23	**Prep Batch:**	1151218
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/22/2023	**Analytical Batch:**	474921
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Dichlorodifluoromethane	1.2	10	ND	
Chloromethane	1.8	10	ND	
Vinyl Chloride	2.0	10	ND	
Bromomethane	2.7	10	ND	
Chloroethane	3.0	10	ND	
Trichlorofluoromethane	2.1	10	ND	
1,1-Dichloroethene	2.0	10	ND	
Freon 113	1.9	10	ND	
Methylene Chloride	7.1	10	ND	
trans-1,2-Dichloroethene	2.1	10	ND	
MTBE	2.3	10	ND	
TBA	12	50	ND	
Diisopropyl ether	2.3	10	ND	
1,1-Dichloroethane	2.2	10	ND	
Ethyl tert-Butyl ether	2.3	10	ND	
cis-1,2-Dichloroethene	2.2	10	ND	
2,2-Dichloropropane	1.9	10	ND	
Bromochloromethane	2.3	10	ND	
Chloroform	2.4	10	ND	
Carbon Tetrachloride	2.1	10	ND	
1,1,1-Trichloroethane	2.1	10	ND	
1,1-Dichloropropene	2.0	10	ND	
Benzene	2.2	10	ND	
TAME	2.3	10	ND	
1,2-Dichloroethane	2.3	10	ND	
Trichloroethene	1.8	10	ND	
Dibromomethane	1.8	10	ND	
1,2-Dichloropropane	1.9	10	ND	
Bromodichloromethane	2.0	10	ND	
cis-1,3-Dichloropropene	1.6	10	ND	
Toluene	1.8	10	ND	
Tetrachloroethene	1.7	10	ND	
trans-1,3-Dichloropropene	1.6	10	ND	
1,1,2-Trichloroethane	1.8	10	ND	
Dibromochloromethane	1.9	10	ND	
1,3-Dichloropropane	1.8	10	ND	
1,2-Dibromoethane	1.8	10	ND	
Chlorobenzene	1.8	10	ND	
Ethylbenzene	1.7	10	ND	
1,1,1,2-Tetrachloroethane	1.9	10	ND	
m,p-Xylene	3.2	10	ND	
o-Xylene	1.7	10	ND	
Styrene	1.6	10	ND	
Bromoform	1.7	10	ND	
Isopropyl Benzene	1.6	10	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305066	**Prep Method:**	5035	**Prep Date:**	05/22/23	**Prep Batch:**	1151218
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/22/2023	**Analytical Batch:**	474921
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
n-Propylbenzene	1.6	10	ND	
Bromobenzene	1.8	10	ND	
1,1,2,2-Tetrachloroethane	1.9	10	ND	
2-Chlorotoluene	1.8	10	ND	
1,3,5-Trimethylbenzene	1.6	10	ND	
1,2,3-Trichloropropane	1.9	10	ND	
4-Chlorotoluene	1.6	10	ND	
tert-Butylbenzene	1.6	10	ND	
1,2,4-Trimethylbenzene	1.4	10	ND	
sec-Butyl Benzene	1.6	10	ND	
p-Isopropyltoluene	1.5	10	ND	
1,3-Dichlorobenzene	1.7	10	ND	
1,4-Dichlorobenzene	1.7	10	ND	
n-Butylbenzene	1.5	10	ND	
1,2-Dichlorobenzene	1.8	10	ND	
1,2-Dibromo-3-Chloropropane	1.8	10	ND	
Hexachlorobutadiene	1.4	10	ND	
1,2,4-Trichlorobenzene	1.5	10	ND	
Naphthalene	1.7	10	2.5	
1,2,3-Trichlorobenzene	1.7	10	ND	
2-Butanone	2.3	10	ND	
(S) Dibromofluoromethane			114	
(S) Toluene-d8			103	
(S) 4-Bromofluorobenzene			98.7	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305066	**Prep Method:**	3546_OCP	**Prep Date:**	05/13/23	**Prep Batch:**	1150929
Matrix:	Soil	**Analytical Method:**	SW8081B	**Analyzed Date:**	5/13/2023	**Analytical Batch:**	474648
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
gamma-BHC (Lindane)	0.16	2.0	ND	40	81.7	85.6	4.78	25 - 135	30	
Heptachlor	0.11	2.0	ND	40	85.9	90.8	5.37	40 - 130	30	
Aldrin	0.20	2.0	ND	40	86.6	90.2	3.95	25 - 140	30	
delta-BHC	0.15	2.0	ND	40	86.3	91.6	5.91	60 - 130	30	
Heptachlor	0.19	2.0	ND	40	87.4	92.2	5.29	55 - 135	30	
4,4'-DDT	0.13	2.0	ND	40	88.1	94.2	6.86	45 - 140	30	
Tetrachloro-M-Xylene (S)				100	82.9	83.0		48 - 125		
Decachlorobiphenyl (S)				100	93.1	94.9		38 - 135		

Work Order:	2305066	**Prep Method:**	3050B	**Prep Date:**	05/15/23	**Prep Batch:**	1150962
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/15/2023	**Analytical Batch:**	474699
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony	0.050	5.00	ND	50	98.3	99.6	1.21	80 - 120	30	
Arsenic	0.15	1.30	ND	50	99.4	100	0.602	80 - 120	30	
Barium	0.055	5.00	0.14	50	101	102	0.985	80 - 120	30	
Beryllium	0.055	5.00	ND	50	102	103	0.976	80 - 120	30	
Cadmium	0.10	0.750	ND	50	101	102	0.985	80 - 120	30	
Chromium	0.075	5.00	0.13	50	102	103	0.976	80 - 120	30	
Cobalt	0.070	5.00	ND	50	102	103	0.976	80 - 120	30	
Copper	0.20	5.00	ND	50	102	103	0.976	80 - 120	30	
Lead	0.10	3.00	ND	50	101	102	0.985	80 - 120	30	
Molybdenum	0.050	5.00	0.050	50	101	102	0.985	80 - 120	30	
Nickel	0.50	5.00	ND	50	102	103	0.976	80 - 120	30	
Selenium	0.22	5.00	ND	50	92.9	93.5	0.643	80 - 120	30	
Silver	0.15	5.00	ND	50	99.3	100	0.602	80 - 120	30	
Thallium	0.20	5.00	ND	50	99.8	101	1.20	80 - 120	30	
Vanadium	0.10	5.00	ND	50	102	103	0.976	80 - 120	30	
Zinc	0.30	5.00	3.2	50	111	111	0.000	80 - 120	30	

Work Order:	2305066	**Prep Method:**	7471BP	**Prep Date:**	05/15/23	**Prep Batch:**	1150976
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/16/2023	**Analytical Batch:**	474697
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury	0.047	0.50	ND	1.25	105	104	0.766	80 - 120	20	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305066	**Prep Method:**	3050B	**Prep Date:**	05/17/23	**Prep Batch:**	1151065
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474846
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony	0.050	5.00	0.065	50	99.7	100	0.200	80 - 120	30	
Arsenic	0.15	1.30	ND	50	98.4	98.7	0.406	80 - 120	30	
Barium	0.055	5.00	0.19	50	103	103	0.000	80 - 120	30	
Beryllium	0.055	5.00	ND	50	102	102	0.000	80 - 120	30	
Cadmium	0.10	0.750	ND	50	101	101	0.000	80 - 120	30	
Chromium	0.075	5.00	0.16	50	103	103	0.000	80 - 120	30	
Cobalt	0.070	5.00	ND	50	102	102	0.000	80 - 120	30	
Copper	0.20	5.00	ND	50	105	105	0.000	80 - 120	30	
Lead	0.10	3.00	ND	50	102	102	0.000	80 - 120	30	
Molybdenum	0.050	5.00	0.15	50	103	103	0.000	80 - 120	30	
Nickel	0.50	5.00	ND	50	102	102	0.000	80 - 120	30	
Selenium	0.22	5.00	ND	50	91.8	92.4	0.651	80 - 120	30	
Silver	0.15	5.00	ND	50	100	101	0.995	80 - 120	30	
Thallium	0.20	5.00	ND	50	99.7	101	1.20	80 - 120	30	
Vanadium	0.10	5.00	ND	50	103	103	0.000	80 - 120	30	
Zinc	0.30	5.00	ND	50	100	101	0.995	80 - 120	30	

Work Order:	2305066	**Prep Method:**	7471BP	**Prep Date:**	05/17/23	**Prep Batch:**	1151067
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474773
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury	0.047	0.50	ND	1.25	117	117	0.000	80 - 120	20	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305066	**Prep Method:**	3546_BNA	**Prep Date:**	05/19/23	**Prep Batch:**	1151137
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474887
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Phenol	43.8	288	ND	1200	92.5	94.2	1.79	40 - 100	30	
2-Chlorophenol	47.7	288	ND	1200	92.4	88.8	3.67	45 - 105	30	
Bis(2-chloroethyl)ether	14.6	144	ND	400	76.2	75.7	0.658	35 - 105	30	
N-nitroso-di-n-propylamine	13.2	144	ND	400	107	109	1.85	40 - 115	30	
1,2,4-Trichlorobenzene	11.8	144	ND	400	78.7	75.4	4.21	45 - 110	30	
1,4-Dichlorobenzene	33.8	288	ND	1200	103	95.8	7.53	45 - 110	30	
Acenaphthene	10.7	144	ND	400	93.0	86.2	7.53	45 - 110	30	
4-Nitrophenol	54.7	720	ND	1200	87.3	81.4	7.31	15 - 140	30	
2,4-Dinitrotoluene	12.1	144	ND	400	91.9	91.3	0.819	50 - 115	30	
N-Methyl-2-Pyrrolidone (NMP)	12.0	144	ND	1200	68.3	70.5	3.12	25 - 120	30	
Pyrene	12.0	144	ND	400	90.7	87.6	3.65	45 - 145	30	
2-Fluorophenol (S)				11100	86.8	84.7		25 - 121		
Phenol-d6 (S)				11100	95.7	98.5		24 - 113		
2,4,6-Tribromophenol (S)				11100	107	97.9		19 - 122		
2-Fluorobiphenyl (S)				5560	89.1	81.3		30 - 143		
Nitrobenzene-d5 (S)				5560	93.6	77.9		23 - 120		
p-Terphenyl-d14 (S)				5560	86.3	79.5		18 - 137		

Work Order:	2305066	**Prep Method:**	7199MP	**Prep Date:**	05/18/23	**Prep Batch:**	1151157
Matrix:	Soil	**Analytical Method:**	SW7199	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474857
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Hexavalent Chromium	3.1	10	ND	100	101	103	1.96	80 - 120	20	

Work Order:	2305066	**Prep Method:**	5035	**Prep Date:**	05/22/23	**Prep Batch:**	1151218
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/22/2023	**Analytical Batch:**	474921
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
1,1-Dichloroethene	2.0	10	ND	50.0	113	113	0.000	53.7 - 139	30	
Benzene	2.2	10	ND	50.0	111	110	0.544	66.5 - 135	30	
Trichloroethene	1.8	10	ND	50.0	97.9	94.7	3.33	57.5 - 150	30	
Toluene	1.8	10	ND	50.0	102	98.9	2.99	56.8 - 134	30	
Chlorobenzene	1.8	10	ND	50.0	98.7	98.6	0.000	57.4 - 134	30	
(S) Dibromofluoromethane				50.0	113	110		59.8 - 148		
(S) Toluene-d8				50.0	104	103		55.2 - 133		
(S) 4-Bromofluorobenzene				50.0	108	109		55.8 - 141		

Laboratory Qualifiers and Definitions

DEFINITIONS:

Accuracy/Bias (% Recovery) - The closeness of agreement between an observed value and an accepted reference value.
Blank (Method/Preparation Blank) -MB/PB - An analyte-free matrix to which all reagents are added in the same volumes/proportions as used in sample processing. The method blank is used to document contamination resulting from the analytical process.
Duplicate - a field sample and/or laboratory QC sample prepared in duplicate following all of the same processes and procedures used on the original sample (sample duplicate, LCSD, MSD)
Laboratory Control Sample (LCS ad LCSD) - A known matrix spiked with compounds representative of the target analyte(s). This is used to document laboratory performance.
Matrix - the component or substrate that contains the analyte of interest (e.g., - groundwater, sediment, soil, waste water, etc)
Matrix Spike (MS/MSD) - Client sample spiked with identical concentrations of target analyte (s). The spiking occurs prior to the sample preparation and analysis. They are used to document the precision and bias of a method in a given sample matrix.
Method Detection Limit (MDL) - the minimum concentration of a substance that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero
Practical Quantitation Limit/Reporting Limit/Limit of Quantitation (PQL/RL/LOQ) - a laboratory determined value at 2 to 5 times above the MDL that can be reproduced in a manner that results in a 99% confidence level that the result is both accurate and precise. PQLs/RLs/LODs reflect all preparation factors and/or dilution factors that have been applied to the sample during the preparation and/or analytical processes.
Precision (%RPD) - The agreement among a set of replicate/duplicate measurements without regard to known value of the replicates
Surrogate (S) or (Surr) - An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. Surrogates are used in most organic analysis to demonstrate matrix compatibility with the chosen method of analysis
Tentatively Identified Compound (TIC) - A compound not contained within the analytical calibration standards but present in the GCMS library of defined compounds. When the library is searched for an unknown compound, it can frequently give a tentative identification to the compound based on retention time and primary and secondary ion match. TICs are reported as estimates and are candidates for further investigation.
Units: the unit of measure used to express the reported result - **mg/L** and ***mg/Kg*** (equivalent to PPM - parts per million in **liquid** and ***solid***), **ug/L** and ***ug/Kg*** (equivalent to PPB - parts per billion in **liquid** and ***solid***), **ug/m3**, ***mg/m3***, **ppbv** and ***ppmv*** (all units of measure for reporting concentrations in air), **%** (equivalent to 10000 ppm or 1,000,000 ppb), **ug/Wipe** (concentration found on the surface of a single Wipe usually taken over a 100cm2 surface)

LABORATORY QUALIFIERS

B - Indicates when the analyte is found in the associated method or preparation blank
D - Surrogate is not recoverable due to the necessary dilution of the sample
E - Indicates the reportable value is outside of the calibration range of the instrument but within the linear range of the instrument (unless otherwise noted) Values reported with an E qualifier should be considered as estimated.
H- Indicates that the recommended holding time for the analyte or compound has been exceeded
J- Indicates a value between the method MDL and PQL and that the reported concentration should be considered as estimated rather the quantitative
NA - Not Analyzed
N/A - Not Applicable
ND - Not Detected at a concentration greater than the PQL/RL or, if reported to the MDL, at greater than the MDL.
NR - Not recoverable - a matrix spike concentration is not recoverable due to a concentration within the original sample that is greater than four times the spike concentration added
R- The % RPD between a duplicate set of samples is outside of the absolute values established by laboratory control charts
S- Spike recovery is outside of established method and/or laboratory control limits. Further explanation of the use of this qualifier should be included within a case narrative
X -Used to indicate that a value based on pattern identification is within the pattern range but not typical of the pattern found in standards. Further explanation may or may not be provided within the sample footnote and/or the case narrative.

Sample Receipt Checklist

Client Name: Langan

Project Name: VERNON

Work Order No.: 2305066

Date and Time Received: 5/9/2023 10:06:00AM

Received By: Lorna Imbat

Physically Logged By: Lorna Imbat

Checklist Completed By: Lorna Imbat

Carrier Name: FedEx

Chain of Custody (COC) Information

Chain of custody present?	Yes
Chain of custody signed when relinquished and received?	Yes
Chain of custody agrees with sample labels?	Yes
Custody seals intact on sample bottles?	Not Present

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Not Present
Shipping Container/Cooler In Good Condition?	Yes
Samples in proper container/bottle?	Yes
Samples containers intact?	Yes
Sufficient sample volume for indicated test?	Yes

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes			
Container/Temp Blank temperature in compliance?	Yes	Temperature:	2.0	°C
Water-VOA vials have zero headspace?	No VOA vials submitted			
Water-pH acceptable upon receipt?	N/A			

pH Checked by: N/A

pH Adjusted by: N/A

Comments:

Login Summary Report

Client ID:	TL5493	Langan	**QC Level:**	II
Project Name:	VERNON		**TAT Requested:**	3 Day Std:3
Project # :	721040501		**Date Received:**	5/9/2023
Report Due Date:	5/23/2023		**Time Received:**	10:06 am

Comments:

Work Order # : ***2305066***

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
2305066-001A	B-7-15	05/04/23 8:47	Soil	10/31/23			Hold Samples Met_S_6010B CAM17 Cr6_S_7199Mod Hg_S_7471B	
Sample Note:								
2305066-002A	B-7-20	05/04/23 8:51	Soil	10/31/23			Hold Samples	
2305066-003A	B-7-25	05/04/23 8:57	Soil	10/31/23			Hold Samples	
2305066-004A	B-7-30	05/04/23 9:05	Soil	10/31/23			Hold Samples VOC_S_8260B SVO_S_8270CFull	
2305066-005A	B-7-35	05/04/23 9:15	Soil	10/31/23			Hold Samples	
2305066-006A	B-1-5	05/04/23 10:55	Soil	10/31/23			Sub_Asb CARB435 A Cr6_S_7199Mod Met_S_6010B CAM17 Pest_S_8081OCP Hg_S_7471B	Yes
2305066-006B	B-1-5	05/04/23 10:55	Soil	10/31/23			Hold Samples 1633 DRAFT_S	
Sample Note:	PFAs data due 5/26							
2305066-007A	B-1-10	05/04/23 11:00	Soil	10/31/23			Hold Samples	
2305066-008A	B-1-15	05/04/23 11:06	Soil	10/31/23			Hold Samples Met_S_6010B CAM17 Cr6_S_7199Mod Hg_S_7471B	
2305066-009A	B-1-20	05/04/23 12:04	Soil	10/31/23			Hold Samples	
2305066-010A	B-1-25	05/04/23 12:10	Soil	10/31/23			Hold Samples	
2305066-011A	B-1-30	05/04/23 12:18	Soil	10/31/23			Hold Samples	
2305066-012A	B-10-5	05/05/23 14:27	Soil	11/01/23			Hold Samples	

Login Summary Report

Client ID:	TL5493	Langan	**QC Level:**	II
Project Name:	VERNON		**TAT Requested:**	3 Day Std:3
Project # :	721040501		**Date Received:**	5/9/2023
Report Due Date:	5/23/2023		**Time Received:**	10:06 am

Comments:

Work Order # : ***2305066***

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
							Met_S_6010B CAM17 Cr6_S_7199Mod Hg_S_7471B	
2305066-013A	B-10-10	05/05/23 14:35	Soil	11/01/23			Hold Samples	
2305066-014A	B-10-15	05/05/23 14:40	Soil	11/01/23			Hold Samples Met_S_6010B CAM17 Cr6_S_7199Mod Hg_S_7471B	
2305066-015A	B-10-20	05/05/23 14:45	Soil	11/01/23			Hold Samples	
2305066-016A	B-10-25	05/05/23 14:52	Soil	11/01/23			Hold Samples	
2305066-017A	B-10-30	05/05/23 14:55	Soil	11/01/23			Hold Samples	
2305066-018A	B-10-35	05/05/23 15:05	Soil	11/01/23			Hold Samples	

Torrent LABORATORY, INC.

Torrent LABORATORY, INC
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

Reset

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 2305066

Company Name: LANGAN ☐ Env. ☐ Non Env.
Address: 515 S. FLOWER ST, SUITE 1060
City: LA State: CA Zip Code: 90071
Telephone: 213 280 9903 Cell:
REPORT TO: NICK CUTLER BILL TO:

Project #: 721040501 PO#:
Project Name: VERNON
Comments: HOLD ALL SAMPLES
SAMPLER: M. CHE
EMAIL: NCUTLER; MCHE@LANGAN.COM

TURNAROUND TIME:
☐ 2 - 8 Hours ☐ 2 Work Days ☐ 5 Work Days
☐ Noon - Nxt Day ☐ 3 Work Days ☐ 7 Work Days
☐ 1 Work Day ☐ 4 Work Days ☐ 10 Work Days

SAMPLE TYPE:
☐ Drinking Water ☐ Storm Water ☐ Air ☐ Waste Water ☐ Wipe ☐ Ground Water ☐ Other ☐ Soil ☐ Product / Bulk

REPORT FORMAT:
☐ Level II - Std. ☐ DoD/DoE Level III ☐ DoD/DoE Level III ☐ Excel - EDD ☐ EDF ☐ Client Specific EDD

ANALYSIS REQUESTED

LAB ID	CANISTER I.D.	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	8260B VOC	SVOC 8270 SIM	CAM 17 6010B	PFAS 537.1/ISM 5/3/1633	REMARKS
-001A	NA	B-7-15	5/4/23 0847	Soil	1	Glass	✓	✓	✓		HOLD
-002A		B-7-20	5/4/23 0851	Soil	1	Glass	✓	✓	✓		
-003A		B-7-25	5/4/23 0857	Soil	1	Glass	✓	✓	✓		
-004A		B-7-30	5/4/23 0905	Soil	1	Glass	✓	✓	✓		
-005A		B-7-35	5/4/23 0915	Soil	1	Glass	✓	✓	✓		
-006A		B-1-5	5/4/23 1055	Soil	2	Glass, plastic	✓	✓	✓	✓	
-007A		B-1-10	5/4/23 1100	Soil	1	Glass	✓	✓	✓		
-008A		B-1-15	5/4/23 1106	Soil	1	Glass	✓	✓	✓		
-009A		B-1-20	5/4/23 1204	Soil	1	Glass	✓	✓	✓		
-010A		B-1-25	5/4/23 1210	Soil	1	Glass	✓	✓	✓		

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	Melody Che	MELODY CHE	5/8/23	1630		L-D Imbat	5-9-23	1006
2	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:

Cooler Temperature 2.1 #3 °C Samples Received on ice? Yes ☒ No ☐ Method of Shipment FedEx

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

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Torrent LABORATORY, INC.

Torrent LABORATORY, INC
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

Reset

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 2305066

Company Name: LANGAN ☐ Env. ☐ Non Env.			Project #: 721040501 PO#:
Address: 515 S. FLOWER ST, SUITE 1060			Project Name: VER NON
City: LOS ANGELES	State: CA	Zip Code: 90071	Comments: HOLD ALL SAMPLES
Telephone: 213 280 9903	Cell:		SAMPLER: M. CHE
REPORT TO: NICK CUTLER	BILL TO:		EMAIL: NCUTLER MCHE @ LANGAN.COM

TURNAROUND TIME:
☐ 2 - 8 Hours ☐ 2 Work Days ☐ 5 Work Days
☐ Noon - Nxt Day ☐ 3 Work Days ☐ 7 Work Days
☐ 1 Work Day ☐ 4 Work Days ☐ 10 Work Days

SAMPLE TYPE:
☐ Drinking Water
☐ Storm Water ☐ Air
☐ Waste Water ☐ Wipe
☐ Ground Water ☐ Other
☐ Soil ☐ Product / Bulk

REPORT FORMAT:
☐ Level II - Std.
☐ DoD/DoE Level III
☐ DoD/DoE Level III
☐ Excel - EDD ☐ EDF
☐ Client Specific EDD

ANALYSIS REQUESTED: 8260B VOC; SVOC 8270 SIM; LAM 17 6010B

LAB ID	CANISTER I.D.	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	REMARKS
-01A	NA	B-1-30	5/4/23 1218	Soil	1	Glass	HOLD

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	Melody Che	MELODY CHE	Melody Che 5/9/23	1500 Melody Che 1650		L-D-Imbat	5-9-23	1006
2	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:

Cooler Temperature 2.1 #3 °C Samples Received on ice? Yes ☒ No ☐ Method of Shipment Fed EX

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 4 of 42

Torrent LABORATORY, INC.

Torrent LABORATORY, INC
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www.torrentlab.com

Reset

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 2305066

Company Name: LANGAN ☑ Env. ☐ Non Env.
Address: 515 S. FLOWER ST, SUITE 1060
City: LA State: CA Zip Code: 90071
Telephone: 213 280 0903 Cell:
REPORT TO: N. CUTLER BILL TO:

Project #: 720405O1 PO#:
Project Name: VERNON
Comments: HOLD ALL SAMPLES FOR ANALYSIS
SAMPLER: M. CHE
EMAIL: NCUTLER AND MCHE@LANGAN.COM

TURNAROUND TIME:
☐ 2 - 8 Hours ☐ 2 Work Days ☐ 5 Work Days
☐ Noon - Nxt Day ☐ 3 Work Days ☐ 7 Work Days
☐ 1 Work Day ☐ 4 Work Days ☐ 10 Work Days

SAMPLE TYPE:
☐ Drinking Water ☐ Storm Water ☐ Air ☐ Waste Water ☐ Wipe ☐ Ground Water ☐ Other ☐ Soil ☐ Product / Bulk

REPORT FORMAT:
☐ Level II - Std. ☐ DoD/DoE Level III ☐ DoD/DoE Level III ☐ Excel - EDD ☐ EDF ☐ Client Specific EDD

ANALYSIS REQUESTED

LAB ID	CANISTER I.D.	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	VOC 8260B	SVOC 8270 SIM	CAM 17 6010B	REMARKS
-012A	NA	B-10-5	5/5/23 1427	Soil	1	Glass	✓	✓	✓	HOLD
-013A		B-10-10	5/5/23 1435	Soil	1	Glass	✓	✓	✓	
-014A		B-10-15	5/5/23 1440	Soil	1	Glass	✓	✓	✓	
-015A		B-10-20	5/5/23 1445	Soil	1	Glass	✓	✓	✓	
-016A		B-10-25	5/5/23 1452	Soil	1	Glass	✓	✓	✓	
-017A		B-10-30	5/5/23 1455	Soil	1	Glass	✓	✓	✓	
-018A		B-10-35	5/5/23 1505	Soil	1	Glass	✓	✓	✓	

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1		MELODY CHE	5/8/23	1630		L.D. Imbat	5-9-23	1006
2								

Cooler Temperature 2.0/3 °C Samples Received on ice? Yes ☒ No ☐ Method of Shipment FedEx

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 7 of 7

Gmail Torrent Laboratory, Inc. <pm@torrentlaboratory.com>

RE: [External] Re: Sample order for PO: 721040501

1 message

Nick Cutler <ncutler@langan.com> Wed, May 10, 2023 at 8:42 PM
To: "Torrent Laboratory, Inc." <pm@torrentlaboratory.com>, Katherine Thomas <kthomas@langan.com>
Cc: "melanie.moran@torrentlaboratory.com" <melanie.moran@torrentlaboratory.com>, Melody Che <mche@langan.com>

Hi Kathie –

Can you please run the analyses on a 3-day TAT per the table below?

Sample ID	Metals 6010B	Pesticides 8081A	PCBs 8082	ACM PLM
B-1-5	1	1		1
B-2-5	1	1	1	
B-3-5	1	1		
B-4-6	1			
B-5-5	1			
B-6-5	1			
B-7-6	1			
B-8-5	1	1		
B-9-5	1			
B-11-5	1	1	1	
B-12-5	1		1	
B-13-5	1		1	

Cordially,
Nick Cutler

483 Sinclair Frontage Rd., Milpitas, CA 95035 | tel: 408.263.5258 | fax: 408.263.8293 | www.torrentlab.com

EMSL Analytical, Inc.

464 McCormick Street San Leandro, CA 94577
Phone/Fax: (510) 895-3675 / (510) 895-3680
http://www.EMSL.com / sanleandrolab@emsl.com

EMSL Order:	092310441
Customer ID:	TORR80
Customer PO:	2305066
Project ID:	

Attention:	Kathie Evans Torrent Laboratory, Inc. 483 Sinclair Frontage Rd. Milpitas, CA 95035	**Phone:**	(408) 263-5258
		Fax:	(408) 263-8293
		Received:	05/12/2023 11:15 AM
		Analysis Date:	05/16/2023
		Collected:	
Project:	2305066		

Test Report: Asbestos Analysis of Soils via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy with CARB 435 Prep (Milling) Level A for 0.25% Target Analytical Sensitivity

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
2305066-006A *092310441-0001*	SOIL	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	**None Detected**

Analyst(s)

Adam C. Fink (1)

Cecilia Yu, Laboratory Manager
or other approved signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. Some samples may contain asbestos fibers present in dimensions below PLM resolution limits. EMSL suggests that samples reported as <0.25% or none detected undergo additional analysis via TEM.

Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from: 05/17/2023 01:09:25

Torrent
LABORATORY, INC.

Langan
135 Main Street, Suite 1500
San Francisco, California 94105
Tel: 415.955.5200

RE: VERNON

Work Order No.: 2305067 Rev: 2

Dear Nick Cutler:

Torrent Laboratory, Inc. received 19 sample(s) on May 09, 2023 for the analyses presented in the following Report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.

Torrent Laboratory, Inc. is certified by the State of California, ELAP #1991. If you have any questions regarding these test results, please feel free to contact the Project Management Team at (408)263-5258; ext 204.



Kathie Evans
Project Manager

May 19, 2023
Date

Torrent LABORATORY, INC.

Date: 5/19/2023

Client: Langan

Project: VERNON

Work Order: 2305067

CASE NARRATIVE

Unless otherwise indicated in the following narrative, no issues encountered with the receiving, preparation, analysis or reporting of the results associated with this work order.

Unless otherwise indicated in the following narrative, no results have been method and/or field blank corrected.

Reported results relate only to the items/samples tested by the laboratory.

This report shall not be reproduced, except in full, without the written approval of Torrent Laboratory, Inc.

REVISIONS

Report revised to include additionally requested data

Rev. 1 (5/19/23)

Report revised to include additionally requested SVOC and VOC data.

Rev. 2 (5/23/23)

Torrent LABORATORY, INC.

Sample Result Summary

Report prepared for: Nick Cutler
Langan

Date Received: 05/09/23
Date Reported: 05/19/23

B-3-5 2305067-001

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	2.65	mg/Kg
Barium	SW6010B	1	0.055	5.00	111	mg/Kg
Chromium	SW6010B	1	0.075	5.00	19.4	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	9.80	mg/Kg
Copper	SW6010B	1	0.20	5.00	30.7	mg/Kg
Lead	SW6010B	1	0.10	3.00	8.55	mg/Kg
Nickel	SW6010B	1	0.50	5.00	12.8	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	42.0	mg/Kg
Zinc	SW6010B	1	0.30	5.00	60.5	mg/Kg
Hexavalent Chromium	SW7199	1	3.1	10	90.3	ug/Kg

B-3-10 2305067-002

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

B-3-15 2305067-003

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	2.79	mg/Kg
Barium	SW6010B	1	0.055	5.00	106	mg/Kg
Chromium	SW6010B	1	0.075	5.00	17.0	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	10.1	mg/Kg
Copper	SW6010B	1	0.20	5.00	20.3	mg/Kg
Lead	SW6010B	1	0.10	3.00	3.93	mg/Kg
Nickel	SW6010B	1	0.50	5.00	11.0	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	46.6	mg/Kg
Zinc	SW6010B	1	0.30	5.00	48.1	mg/Kg

B-3-30 2305067-006

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

B-8-5 2305067-007

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	1.54	mg/Kg
Barium	SW6010B	1	0.055	5.00	82.0	mg/Kg
Chromium	SW6010B	1	0.075	5.00	12.2	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	7.60	mg/Kg
Copper	SW6010B	1	0.20	5.00	9.50	mg/Kg
Nickel	SW6010B	1	0.50	5.00	6.75	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	38.7	mg/Kg
Zinc	SW6010B	1	0.30	5.00	37.9	mg/Kg

Torrent LABORATORY, INC.

Sample Result Summary

Report prepared for: Nick Cutler
Langan

Date Received: 05/09/23
Date Reported: 05/19/23

B-8-15 2305067-009

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Barium	SW6010B	1	0.055	5.00	60.5	mg/Kg
Chromium	SW6010B	1	0.075	5.00	9.00	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	5.90	mg/Kg
Copper	SW6010B	1	0.20	5.00	7.00	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	34.0	mg/Kg
Zinc	SW6010B	1	0.30	5.00	26.7	mg/Kg

B-8-30 2305067-012

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

B-9-5 2305067-013

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	3.22	mg/Kg
Barium	SW6010B	1	0.055	5.00	127	mg/Kg
Chromium	SW6010B	1	0.075	5.00	39.8	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	11.0	mg/Kg
Copper	SW6010B	1	0.20	5.00	43.7	mg/Kg
Lead	SW6010B	1	0.10	3.00	36.2	mg/Kg
Nickel	SW6010B	1	0.50	5.00	46.6	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	48.4	mg/Kg
Zinc	SW6010B	1	0.30	5.00	80.5	mg/Kg

B-9-15 2305067-015

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Barium	SW6010B	1	0.055	5.00	51.5	mg/Kg
Chromium	SW6010B	1	0.075	5.00	7.05	mg/Kg
Copper	SW6010B	1	0.20	5.00	6.05	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	27.5	mg/Kg
Zinc	SW6010B	1	0.30	5.00	21.7	mg/Kg

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-5	**Lab Sample ID:**	2305067-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 7:57		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151158	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	**90.3**		ug/Kg	05/19/23	11:54	PH	474858

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-5	**Lab Sample ID:**	2305067-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 7:57		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/15/23 5:45:00PM
Prep Batch ID:	1150976	**Prep Analyst:**	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/16/23	13:50	ERR	474697

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-5	**Lab Sample ID:**	2305067-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 7:57		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/15/23 5:15:00PM
Prep Batch ID:	1150962	**Prep Analyst:**	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	20:58	AT	474699
Arsenic	SW6010B	1	0.15	1.30	**2.65**		mg/Kg	05/15/23	20:58	AT	474699
Barium	SW6010B	1	0.055	5.00	**111**		mg/Kg	05/15/23	20:58	AT	474699
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/15/23	20:58	AT	474699
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/15/23	20:58	AT	474699
Chromium	SW6010B	1	0.075	5.00	**19.4**		mg/Kg	05/15/23	20:58	AT	474699
Cobalt	SW6010B	1	0.070	5.00	**9.80**		mg/Kg	05/15/23	20:58	AT	474699
Copper	SW6010B	1	0.20	5.00	**30.7**		mg/Kg	05/15/23	20:58	AT	474699
Lead	SW6010B	1	0.10	3.00	**8.55**		mg/Kg	05/15/23	20:58	AT	474699
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	20:58	AT	474699
Nickel	SW6010B	1	0.50	5.00	**12.8**		mg/Kg	05/15/23	20:58	AT	474699
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/15/23	20:58	AT	474699
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/15/23	20:58	AT	474699
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/15/23	20:58	AT	474699
Vanadium	SW6010B	1	0.10	5.00	**42.0**		mg/Kg	05/15/23	20:58	AT	474699
Zinc	SW6010B	1	0.30	5.00	**60.5**		mg/Kg	05/15/23	20:58	AT	474699

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-5	**Lab Sample ID:**	2305067-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 7:57		
SDG:			

Prep Method:	3546_OCP	**Prep Batch Date/Time:**	5/13/23 10:20:00AM
Prep Batch ID:	1150929	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
The results shown below are reported using their MDL.											
alpha-BHC	SW8081B	10	2.5	20	ND		ug/Kg	05/13/23	16:29	LA	474648
gamma-BHC (Lindane)	SW8081B	10	7.1	20	ND		ug/Kg	05/13/23	16:29	LA	474648
beta-BHC	SW8081B	10	4.4	20	ND		ug/Kg	05/13/23	16:29	LA	474648
delta-BHC	SW8081B	10	6.5	20	ND		ug/Kg	05/13/23	16:29	LA	474648
Heptachlor	SW8081B	10	2.7	20	ND		ug/Kg	05/13/23	16:29	LA	474648
Aldrin	SW8081B	10	2.9	20	ND		ug/Kg	05/13/23	16:29	LA	474648
Heptachlor Epoxide	SW8081B	10	3.1	20	ND		ug/Kg	05/13/23	16:29	LA	474648
gamma-Chlordane	SW8081B	10	15	30	ND		ug/Kg	05/13/23	16:29	LA	474648
alpha-Chlordane	SW8081B	10	3.6	20	ND		ug/Kg	05/13/23	16:29	LA	474648
4,4'-DDE	SW8081B	10	6.1	20	ND		ug/Kg	05/13/23	16:29	LA	474648
Endosulfan I	SW8081B	10	2.9	20	ND		ug/Kg	05/13/23	16:29	LA	474648
Dieldrin	SW8081B	10	2.5	20	ND		ug/Kg	05/13/23	16:29	LA	474648
Endrin	SW8081B	10	7.9	20	ND		ug/Kg	05/13/23	16:29	LA	474648
4,4'-DDD	SW8081B	10	6.4	20	ND		ug/Kg	05/13/23	16:29	LA	474648
Endosulfan II	SW8081B	10	3.4	20	ND		ug/Kg	05/13/23	16:29	LA	474648
4,4'-DDT	SW8081B	10	7.4	20	ND		ug/Kg	05/13/23	16:29	LA	474648
Endrin Aldehyde	SW8081B	10	5.1	20	ND		ug/Kg	05/13/23	16:29	LA	474648
Methoxychlor	SW8081B	10	26	60	ND		ug/Kg	05/13/23	16:29	LA	474648
Endosulfan Sulfate	SW8081B	10	5.1	20	ND		ug/Kg	05/13/23	16:29	LA	474648
Endrin Ketone	SW8081B	10	4.3	20	ND		ug/Kg	05/13/23	16:29	LA	474648
Chlordane, Technical	SW8081B	10	27	200	ND		ug/Kg	05/13/23	16:29	LA	474648
Toxaphene	SW8081B	10	220	500	ND		ug/Kg	05/13/23	16:29	LA	474648
			Acceptance Limits								
Tetrachloro-M-Xylene (S)	SW8081B		48 - 125		**71.6**		%	05/13/23	16:29	LA	474648
Decachlorobiphenyl (S)	SW8081B		38 - 135		**81.9**		%	05/13/23	16:29	LA	474648

NOTE: Sample diluted due to the nature of the sample matrix (dark colored extract)

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-10	**Lab Sample ID:**	2305067-002A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 8:06		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
N-Nitrosodimethylamine	SW8270C	1	46.9	720	ND		ug/Kg	05/22/23	0:42	MT	474888
Phenol	SW8270C	1	43.8	288	ND		ug/Kg	05/22/23	0:42	MT	474888
Bis(2-chloroethyl)ether	SW8270C	1	13.3	144	ND		ug/Kg	05/22/23	0:42	MT	474888
2-Chlorophenol	SW8270C	1	47.7	288	ND		ug/Kg	05/22/23	0:42	MT	474888
1,3-Dichlorobenzene	SW8270C	1	13.1	144	ND		ug/Kg	05/22/23	0:42	MT	474888
1,4-Dichlorobenzene	SW8270C	1	14.6	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Benzyl Alcohol	SW8270C	1	20.5	288	ND		ug/Kg	05/22/23	0:42	MT	474888
1,2-Dichlorobenzene	SW8270C	1	13.5	144	ND		ug/Kg	05/22/23	0:42	MT	474888
2-Methylphenol (o-Cresol)	SW8270C	1	29.3	288	ND		ug/Kg	05/22/23	0:42	MT	474888
N-Methyl-2-Pyrrolidone (NMP)	SW8270C	1	68.0	720	ND		ug/Kg	05/22/23	0:42	MT	474888
3-/4-Methylphenol (p-/m-Cresol)	SW8270C	1	31.3	288	ND		ug/Kg	05/22/23	0:42	MT	474888
N-nitroso-di-n-propylamine	SW8270C	1	13.2	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Hexachloroethane	SW8270C	1	17.1	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Nitrobenzene	SW8270C	1	12.8	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Isophorone	SW8270C	1	12.2	144	ND		ug/Kg	05/22/23	0:42	MT	474888
2-Nitrophenol	SW8270C	1	25.4	288	ND		ug/Kg	05/22/23	0:42	MT	474888
2,4-Dimethylphenol	SW8270C	1	22.8	288	ND		ug/Kg	05/22/23	0:42	MT	474888
Benzoic Acid	SW8270C	1	41.7	288	ND		ug/Kg	05/22/23	0:42	MT	474888
Bis(2-Chloroethoxy)methane	SW8270C	1	9.79	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Bis(2-chloroisopropyl)ether	SW8270C	1	12.6	144	ND		ug/Kg	05/22/23	0:42	MT	474888
2,4-Dichlorophenol	SW8270C	1	39.3	288	ND		ug/Kg	05/22/23	0:42	MT	474888
1,2,4-Trichlorobenzene	SW8270C	1	11.8	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Naphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/22/23	0:42	MT	474888
2,6-Dichlorophenol	SW8270C	1	35.8	288	ND		ug/Kg	05/22/23	0:42	MT	474888
Hexachloro-1,3-butadiene	SW8270C	1	8.34	144	ND		ug/Kg	05/22/23	0:42	MT	474888
4-Chloro-3-methylphenol	SW8270C	1	33.8	288	ND		ug/Kg	05/22/23	0:42	MT	474888
2-Methylnaphthalene	SW8270C	1	10.4	144	ND		ug/Kg	05/22/23	0:42	MT	474888
1-Methylnaphthalene	SW8270C	1	12.2	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Hexachlorocyclopentadiene	SW8270C	1	12.9	144	ND		ug/Kg	05/22/23	0:42	MT	474888
2,4,6-Trichlorophenol	SW8270C	1	35.9	288	ND		ug/Kg	05/22/23	0:42	MT	474888
2,4,5-Trichlorophenol	SW8270C	1	33.4	288	ND		ug/Kg	05/22/23	0:42	MT	474888
2-Chloronaphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/22/23	0:42	MT	474888
1,4-Dinitrobenzene	SW8270C	1	10.3	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Dimethyl phthalate	SW8270C	1	14.2	720	ND		ug/Kg	05/22/23	0:42	MT	474888
1,3-Dinitrobenzene	SW8270C	1	10.4	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Acenaphthylene	SW8270C	1	8.28	144	ND		ug/Kg	05/22/23	0:42	MT	474888
2,6-Dinitrotoluene	SW8270C	1	11.3	144	ND		ug/Kg	05/22/23	0:42	MT	474888
1,2-Dinitrobenzene	SW8270C	1	15.8	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Acenaphthene	SW8270C	1	10.7	144	ND		ug/Kg	05/22/23	0:42	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-10	**Lab Sample ID:**	2305067-002A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 8:06		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2,4-Dinitrophenol	SW8270C	1	77.6	720	ND		ug/Kg	05/22/23	0:42	MT	474888
4-Nitrophenol	SW8270C	1	54.7	720	ND		ug/Kg	05/22/23	0:42	MT	474888
Dibenzofuran	SW8270C	1	11.2	144	ND		ug/Kg	05/22/23	0:42	MT	474888
2,4-Dinitrotoluene	SW8270C	1	12.1	144	ND		ug/Kg	05/22/23	0:42	MT	474888
2,3,5,6-Tetrachlorophenol	SW8270C	1	27.6	288	ND		ug/Kg	05/22/23	0:42	MT	474888
2,3,4,6-Tetrachlorophenol	SW8270C	1	31.5	288	ND		ug/Kg	05/22/23	0:42	MT	474888
Diethylphthalate	SW8270C	1	13.6	720	ND		ug/Kg	05/22/23	0:42	MT	474888
Fluorene	SW8270C	1	10.3	144	ND		ug/Kg	05/22/23	0:42	MT	474888
4-Chlorophenyl-phenylether	SW8270C	1	9.32	144	ND		ug/Kg	05/22/23	0:42	MT	474888
4,6-Dinitro-2-methylphenol	SW8270C	1	13.4	288	ND		ug/Kg	05/22/23	0:42	MT	474888
Diphenylamine	SW8270C	1	13.0	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Azobenzene	SW8270C	1	114	144	ND		ug/Kg	05/22/23	0:42	MT	474888
4-Bromophenyl-phenylether	SW8270C	1	8.23	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Hexachlorobenzene	SW8270C	1	8.66	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Pentachlorophenol	SW8270C	1	25.0	288	ND		ug/Kg	05/22/23	0:42	MT	474888
Phenanthrene	SW8270C	1	9.32	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Anthracene	SW8270C	1	8.91	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Carbazole	SW8270C	1	10.7	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Di-n-butylphthalate	SW8270C	1	13.5	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Fluoranthene	SW8270C	1	10.0	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Benzidine	SW8270C	1	147	147	ND		ug/Kg	05/22/23	0:42	MT	474888
Pyrene	SW8270C	1	12.0	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Butylbenzylphthalate	SW8270C	1	21.0	720	ND		ug/Kg	05/22/23	0:42	MT	474888
Benzo(a)anthracene	SW8270C	1	9.80	144	ND		ug/Kg	05/22/23	0:42	MT	474888
3,3-Dichlorobenzidine	SW8270C	1	118	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Chrysene	SW8270C	1	15.2	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Bis(2-Ethylhexyl)phthalate	SW8270C	1	15.3	720	ND		ug/Kg	05/22/23	0:42	MT	474888
Di-n-Octylphthalate	SW8270C	1	12.3	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Benzo(b)fluorathene	SW8270C	1	12.0	144	ND		ug/Kg	05/22/23	0:42	MT	474888
benzo(k)fluorathene	SW8270C	1	8.16	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Benzo(a)pyrene	SW8270C	1	9.80	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Indeno(1,2,3-c,d)pyrene	SW8270C	1	13.8	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Dibenzo(a,h)anthracene	SW8270C	1	12.7	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Benzo(g,h,i)perylene	SW8270C	1	16.7	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Pyridine	SW8270C	1	43.8	720	ND		ug/Kg	05/22/23	0:42	MT	474888
			Acceptance Limits								
2-Fluorophenol (S)	SW8270C		25 - 121		**61.4**		%	05/22/23	0:42	MT	474888
Phenol-d6 (S)	SW8270C		24 - 113		**62.9**		%	05/22/23	0:42	MT	474888
2,4,6-Tribromophenol (S)	SW8270C		19 - 122		**65.8**		%	05/22/23	0:42	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-10	**Lab Sample ID:**	2305067-002A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 8:06		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23	11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2-Fluorobiphenyl (S)	SW8270C		45 - 143		**61.7**		%	05/22/23	0:42	MT	474888
Nitrobenzene-d5 (S)	SW8270C		23 - 120		**59.3**		%	05/22/23	0:42	MT	474888
p-Terphenyl-d14 (S)	SW8270C		18 - 137		**82.3**		%	05/22/23	0:42	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-10	**Lab Sample ID:**	2305067-002A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 8:06		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/19/23 10:46:00AM
Prep Batch ID:	1151221	**Prep Analyst:**	HVYAS

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	1.2	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Chloromethane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Vinyl Chloride	SW8260B	1	2.0	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Bromomethane	SW8260B	1	2.7	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Chloroethane	SW8260B	1	3.0	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Trichlorofluoromethane	SW8260B	1	2.1	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,1-Dichloroethene	SW8260B	1	2.0	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Freon 113	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Methylene Chloride	SW8260B	1	7.1	10	ND		ug/Kg	05/19/23	19:11	HV	474928
trans-1,2-Dichloroethene	SW8260B	1	2.1	10	ND		ug/Kg	05/19/23	19:11	HV	474928
MTBE	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	19:11	HV	474928
TBA	SW8260B	1	12	50	ND		ug/Kg	05/19/23	19:11	HV	474928
Diisopropyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,1-Dichloroethane	SW8260B	1	2.2	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Ethyl tert-Butyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	19:11	HV	474928
cis-1,2-Dichloroethene	SW8260B	1	2.2	10	ND		ug/Kg	05/19/23	19:11	HV	474928
2,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Bromochloromethane	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Chloroform	SW8260B	1	2.4	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Carbon Tetrachloride	SW8260B	1	2.1	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,1,1-Trichloroethane	SW8260B	1	2.1	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,1-Dichloropropene	SW8260B	1	2.0	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Benzene	SW8260B	1	2.2	10	ND		ug/Kg	05/19/23	19:11	HV	474928
TAME	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,2-Dichloroethane	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Trichloroethene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Dibromomethane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Bromodichloromethane	SW8260B	1	2.0	10	ND		ug/Kg	05/19/23	19:11	HV	474928
cis-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Toluene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Tetrachloroethene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:11	HV	474928
trans-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,1,2-Trichloroethane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Dibromochloromethane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,3-Dichloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,2-Dibromoethane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Chlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Ethylbenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:11	HV	474928

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-10	**Lab Sample ID:**	2305067-002A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 8:06		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/19/23 10:46:00AM
Prep Batch ID:	1151221	**Prep Analyst:**	HVYAS

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	19:11	HV	474928
m,p-Xylene	SW8260B	1	3.2	10	ND		ug/Kg	05/19/23	19:11	HV	474928
o-Xylene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Styrene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Bromoform	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Isopropyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:11	HV	474928
n-Propylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Bromobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,1,2,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	19:11	HV	474928
2-Chlorotoluene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,3,5-Trimethylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,2,3-Trichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	19:11	HV	474928
4-Chlorotoluene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:11	HV	474928
tert-Butylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,2,4-Trimethylbenzene	SW8260B	1	1.4	10	ND		ug/Kg	05/19/23	19:11	HV	474928
sec-Butyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:11	HV	474928
p-Isopropyltoluene	SW8260B	1	1.5	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,3-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,4-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:11	HV	474928
n-Butylbenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,2-Dichlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,2-Dibromo-3-Chloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Hexachlorobutadiene	SW8260B	1	1.4	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,2,4-Trichlorobenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Naphthalene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,2,3-Trichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:11	HV	474928
2-Butanone	SW8260B	1	2.3	10.0	ND		ug/Kg	05/19/23	19:11	HV	474928
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**69.6**		%	05/19/23	19:11	HV	474928
(S) Toluene-d8	SW8260B		55.2 - 133		**102**		%	05/19/23	19:11	HV	474928
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**103**		%	05/19/23	19:11	HV	474928

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-15	**Lab Sample ID:**	2305067-003A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 8:10		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	5:09	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-15	**Lab Sample ID:**	2305067-003A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 8:10		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/17/23 7:15:00PM
Prep Batch ID:	1151067	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/18/23	13:43	BJAY	474773

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-15	**Lab Sample ID:**	2305067-003A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 8:10		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/17/23 7:00:00PM
Prep Batch ID:	1151065	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:29	AT	474846
Arsenic	SW6010B	1	0.15	1.30	**2.79**		mg/Kg	05/18/23	20:29	AT	474846
Barium	SW6010B	1	0.055	5.00	**106**		mg/Kg	05/18/23	20:29	AT	474846
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/18/23	20:29	AT	474846
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/18/23	20:29	AT	474846
Chromium	SW6010B	1	0.075	5.00	**17.0**		mg/Kg	05/18/23	20:29	AT	474846
Cobalt	SW6010B	1	0.070	5.00	**10.1**		mg/Kg	05/18/23	20:29	AT	474846
Copper	SW6010B	1	0.20	5.00	**20.3**		mg/Kg	05/18/23	20:29	AT	474846
Lead	SW6010B	1	0.10	3.00	**3.93**		mg/Kg	05/18/23	20:29	AT	474846
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:29	AT	474846
Nickel	SW6010B	1	0.50	5.00	**11.0**		mg/Kg	05/18/23	20:29	AT	474846
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/18/23	20:29	AT	474846
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/18/23	20:29	AT	474846
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:29	AT	474846
Vanadium	SW6010B	1	0.10	5.00	**46.6**		mg/Kg	05/18/23	20:29	AT	474846
Zinc	SW6010B	1	0.30	5.00	**48.1**		mg/Kg	05/18/23	20:29	AT	474846

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-30	**Lab Sample ID:**	2305067-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 8:27		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
N-Nitrosodimethylamine	SW8270C	1	46.9	720	ND		ug/Kg	05/22/23	1:11	MT	474888
Phenol	SW8270C	1	43.8	288	ND		ug/Kg	05/22/23	1:11	MT	474888
Bis(2-chloroethyl)ether	SW8270C	1	13.3	144	ND		ug/Kg	05/22/23	1:11	MT	474888
2-Chlorophenol	SW8270C	1	47.7	288	ND		ug/Kg	05/22/23	1:11	MT	474888
1,3-Dichlorobenzene	SW8270C	1	13.1	144	ND		ug/Kg	05/22/23	1:11	MT	474888
1,4-Dichlorobenzene	SW8270C	1	14.6	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Benzyl Alcohol	SW8270C	1	20.5	288	ND		ug/Kg	05/22/23	1:11	MT	474888
1,2-Dichlorobenzene	SW8270C	1	13.5	144	ND		ug/Kg	05/22/23	1:11	MT	474888
2-Methylphenol (o-Cresol)	SW8270C	1	29.3	288	ND		ug/Kg	05/22/23	1:11	MT	474888
N-Methyl-2-Pyrrolidone (NMP)	SW8270C	1	68.0	720	ND		ug/Kg	05/22/23	1:11	MT	474888
3-/4-Methylphenol (p-/m-Cresol)	SW8270C	1	31.3	288	ND		ug/Kg	05/22/23	1:11	MT	474888
N-nitroso-di-n-propylamine	SW8270C	1	13.2	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Hexachloroethane	SW8270C	1	17.1	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Nitrobenzene	SW8270C	1	12.8	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Isophorone	SW8270C	1	12.2	144	ND		ug/Kg	05/22/23	1:11	MT	474888
2-Nitrophenol	SW8270C	1	25.4	288	ND		ug/Kg	05/22/23	1:11	MT	474888
2,4-Dimethylphenol	SW8270C	1	22.8	288	ND		ug/Kg	05/22/23	1:11	MT	474888
Benzoic Acid	SW8270C	1	41.7	288	ND		ug/Kg	05/22/23	1:11	MT	474888
Bis(2-Chloroethoxy)methane	SW8270C	1	9.79	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Bis(2-chloroisopropyl)ether	SW8270C	1	12.6	144	ND		ug/Kg	05/22/23	1:11	MT	474888
2,4-Dichlorophenol	SW8270C	1	39.3	288	ND		ug/Kg	05/22/23	1:11	MT	474888
1,2,4-Trichlorobenzene	SW8270C	1	11.8	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Naphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/22/23	1:11	MT	474888
2,6-Dichlorophenol	SW8270C	1	35.8	288	ND		ug/Kg	05/22/23	1:11	MT	474888
Hexachloro-1,3-butadiene	SW8270C	1	8.34	144	ND		ug/Kg	05/22/23	1:11	MT	474888
4-Chloro-3-methylphenol	SW8270C	1	33.8	288	ND		ug/Kg	05/22/23	1:11	MT	474888
2-Methylnaphthalene	SW8270C	1	10.4	144	ND		ug/Kg	05/22/23	1:11	MT	474888
1-Methylnaphthalene	SW8270C	1	12.2	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Hexachlorocyclopentadiene	SW8270C	1	12.9	144	ND		ug/Kg	05/22/23	1:11	MT	474888
2,4,6-Trichlorophenol	SW8270C	1	35.9	288	ND		ug/Kg	05/22/23	1:11	MT	474888
2,4,5-Trichlorophenol	SW8270C	1	33.4	288	ND		ug/Kg	05/22/23	1:11	MT	474888
2-Chloronaphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/22/23	1:11	MT	474888
1,4-Dinitrobenzene	SW8270C	1	10.3	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Dimethyl phthalate	SW8270C	1	14.2	720	ND		ug/Kg	05/22/23	1:11	MT	474888
1,3-Dinitrobenzene	SW8270C	1	10.4	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Acenaphthylene	SW8270C	1	8.28	144	ND		ug/Kg	05/22/23	1:11	MT	474888
2,6-Dinitrotoluene	SW8270C	1	11.3	144	ND		ug/Kg	05/22/23	1:11	MT	474888
1,2-Dinitrobenzene	SW8270C	1	15.8	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Acenaphthene	SW8270C	1	10.7	144	ND		ug/Kg	05/22/23	1:11	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-30	**Lab Sample ID:**	2305067-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 8:27		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2,4-Dinitrophenol	SW8270C	1	77.6	720	ND		ug/Kg	05/22/23	1:11	MT	474888
4-Nitrophenol	SW8270C	1	54.7	720	ND		ug/Kg	05/22/23	1:11	MT	474888
Dibenzofuran	SW8270C	1	11.2	144	ND		ug/Kg	05/22/23	1:11	MT	474888
2,4-Dinitrotoluene	SW8270C	1	12.1	144	ND		ug/Kg	05/22/23	1:11	MT	474888
2,3,5,6-Tetrachlorophenol	SW8270C	1	27.6	288	ND		ug/Kg	05/22/23	1:11	MT	474888
2,3,4,6-Tetrachlorophenol	SW8270C	1	31.5	288	ND		ug/Kg	05/22/23	1:11	MT	474888
Diethylphthalate	SW8270C	1	13.6	720	ND		ug/Kg	05/22/23	1:11	MT	474888
Fluorene	SW8270C	1	10.3	144	ND		ug/Kg	05/22/23	1:11	MT	474888
4-Chlorophenyl-phenylether	SW8270C	1	9.32	144	ND		ug/Kg	05/22/23	1:11	MT	474888
4,6-Dinitro-2-methylphenol	SW8270C	1	13.4	288	ND		ug/Kg	05/22/23	1:11	MT	474888
Diphenylamine	SW8270C	1	13.0	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Azobenzene	SW8270C	1	114	144	ND		ug/Kg	05/22/23	1:11	MT	474888
4-Bromophenyl-phenylether	SW8270C	1	8.23	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Hexachlorobenzene	SW8270C	1	8.66	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Pentachlorophenol	SW8270C	1	25.0	288	ND		ug/Kg	05/22/23	1:11	MT	474888
Phenanthrene	SW8270C	1	9.32	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Anthracene	SW8270C	1	8.91	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Carbazole	SW8270C	1	10.7	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Di-n-butylphthalate	SW8270C	1	13.5	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Fluoranthene	SW8270C	1	10.0	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Benzidine	SW8270C	1	147	147	ND		ug/Kg	05/22/23	1:11	MT	474888
Pyrene	SW8270C	1	12.0	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Butylbenzylphthalate	SW8270C	1	21.0	720	ND		ug/Kg	05/22/23	1:11	MT	474888
Benzo(a)anthracene	SW8270C	1	9.80	144	ND		ug/Kg	05/22/23	1:11	MT	474888
3,3-Dichlorobenzidine	SW8270C	1	118	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Chrysene	SW8270C	1	15.2	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Bis(2-Ethylhexyl)phthalate	SW8270C	1	15.3	720	ND		ug/Kg	05/22/23	1:11	MT	474888
Di-n-Octylphthalate	SW8270C	1	12.3	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Benzo(b)fluorathene	SW8270C	1	12.0	144	ND		ug/Kg	05/22/23	1:11	MT	474888
benzo(k)fluorathene	SW8270C	1	8.16	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Benzo(a)pyrene	SW8270C	1	9.80	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Indeno(1,2,3-c,d)pyrene	SW8270C	1	13.8	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Dibenzo(a,h)anthracene	SW8270C	1	12.7	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Benzo(g,h,i)perylene	SW8270C	1	16.7	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Pyridine	SW8270C	1	43.8	720	ND		ug/Kg	05/22/23	1:11	MT	474888
			Acceptance Limits								
2-Fluorophenol (S)	SW8270C		25 - 121		**57.3**		%	05/22/23	1:11	MT	474888
Phenol-d6 (S)	SW8270C		24 - 113		**62.0**		%	05/22/23	1:11	MT	474888
2,4,6-Tribromophenol (S)	SW8270C		19 - 122		**51.3**		%	05/22/23	1:11	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-30	**Lab Sample ID:**	2305067-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 8:27		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23	11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2-Fluorobiphenyl (S)	SW8270C		45 - 143		**72.1**		%	05/22/23	1:11	MT	474888
Nitrobenzene-d5 (S)	SW8270C		23 - 120		**67.5**		%	05/22/23	1:11	MT	474888
p-Terphenyl-d14 (S)	SW8270C		18 - 137		**85.2**		%	05/22/23	1:11	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-30	**Lab Sample ID:**	2305067-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 8:27		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/19/23 10:46:00AM
Prep Batch ID:	1151221	**Prep Analyst:**	HVYAS

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	1.2	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Chloromethane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Vinyl Chloride	SW8260B	1	2.0	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Bromomethane	SW8260B	1	2.7	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Chloroethane	SW8260B	1	3.0	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Trichlorofluoromethane	SW8260B	1	2.1	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,1-Dichloroethene	SW8260B	1	2.0	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Freon 113	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Methylene Chloride	SW8260B	1	7.1	10	ND		ug/Kg	05/19/23	19:40	HV	474928
trans-1,2-Dichloroethene	SW8260B	1	2.1	10	ND		ug/Kg	05/19/23	19:40	HV	474928
MTBE	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	19:40	HV	474928
TBA	SW8260B	1	12	50	ND		ug/Kg	05/19/23	19:40	HV	474928
Diisopropyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,1-Dichloroethane	SW8260B	1	2.2	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Ethyl tert-Butyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	19:40	HV	474928
cis-1,2-Dichloroethene	SW8260B	1	2.2	10	ND		ug/Kg	05/19/23	19:40	HV	474928
2,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Bromochloromethane	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Chloroform	SW8260B	1	2.4	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Carbon Tetrachloride	SW8260B	1	2.1	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,1,1-Trichloroethane	SW8260B	1	2.1	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,1-Dichloropropene	SW8260B	1	2.0	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Benzene	SW8260B	1	2.2	10	ND		ug/Kg	05/19/23	19:40	HV	474928
TAME	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,2-Dichloroethane	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Trichloroethene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Dibromomethane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Bromodichloromethane	SW8260B	1	2.0	10	ND		ug/Kg	05/19/23	19:40	HV	474928
cis-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Toluene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Tetrachloroethene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:40	HV	474928
trans-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,1,2-Trichloroethane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Dibromochloromethane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,3-Dichloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,2-Dibromoethane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Chlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Ethylbenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:40	HV	474928

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-30	**Lab Sample ID:**	2305067-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 8:27		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/19/23 10:46:00AM
Prep Batch ID:	1151221	**Prep Analyst:**	HVYAS

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	19:40	HV	474928
m,p-Xylene	SW8260B	1	3.2	10	ND		ug/Kg	05/19/23	19:40	HV	474928
o-Xylene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Styrene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Bromoform	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Isopropyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:40	HV	474928
n-Propylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Bromobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,1,2,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	19:40	HV	474928
2-Chlorotoluene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,3,5-Trimethylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,2,3-Trichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	19:40	HV	474928
4-Chlorotoluene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:40	HV	474928
tert-Butylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,2,4-Trimethylbenzene	SW8260B	1	1.4	10	ND		ug/Kg	05/19/23	19:40	HV	474928
sec-Butyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:40	HV	474928
p-Isopropyltoluene	SW8260B	1	1.5	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,3-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,4-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:40	HV	474928
n-Butylbenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,2-Dichlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,2-Dibromo-3-Chloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Hexachlorobutadiene	SW8260B	1	1.4	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,2,4-Trichlorobenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Naphthalene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,2,3-Trichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:40	HV	474928
2-Butanone	SW8260B	1	2.3	10.0	ND		ug/Kg	05/19/23	19:40	HV	474928
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**70.0**		%	05/19/23	19:40	HV	474928
(S) Toluene-d8	SW8260B		55.2 - 133		**104**		%	05/19/23	19:40	HV	474928
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**103**		%	05/19/23	19:40	HV	474928

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-8-5	**Lab Sample ID:**	2305067-007A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 9:40		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151158	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	12:16	PH	474858

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-8-5	**Lab Sample ID:**	2305067-007A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 9:40		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/15/23	5:45:00PM
Prep Batch ID:	1150976	**Prep Analyst:**	AJNG	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/16/23	13:52	ERR	474697

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-8-5	**Lab Sample ID:**	2305067-007A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 9:40		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/15/23 5:15:00PM
Prep Batch ID:	1150962	**Prep Analyst:**	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	20:59	AT	474699
Arsenic	SW6010B	1	0.15	1.30	**1.54**		mg/Kg	05/15/23	20:59	AT	474699
Barium	SW6010B	1	0.055	5.00	**82.0**		mg/Kg	05/15/23	20:59	AT	474699
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/15/23	20:59	AT	474699
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/15/23	20:59	AT	474699
Chromium	SW6010B	1	0.075	5.00	**12.2**		mg/Kg	05/15/23	20:59	AT	474699
Cobalt	SW6010B	1	0.070	5.00	**7.60**		mg/Kg	05/15/23	20:59	AT	474699
Copper	SW6010B	1	0.20	5.00	**9.50**		mg/Kg	05/15/23	20:59	AT	474699
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/15/23	20:59	AT	474699
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	20:59	AT	474699
Nickel	SW6010B	1	0.50	5.00	**6.75**		mg/Kg	05/15/23	20:59	AT	474699
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/15/23	20:59	AT	474699
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/15/23	20:59	AT	474699
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/15/23	20:59	AT	474699
Vanadium	SW6010B	1	0.10	5.00	**38.7**		mg/Kg	05/15/23	20:59	AT	474699
Zinc	SW6010B	1	0.30	5.00	**37.9**		mg/Kg	05/15/23	20:59	AT	474699

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-8-5	**Lab Sample ID:**	2305067-007A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 9:40		
SDG:			

Prep Method:	3546_OCP	**Prep Batch Date/Time:**	5/13/23 10:20:00AM
Prep Batch ID:	1150929	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
alpha-BHC	SW8081B	1	0.25	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
gamma-BHC (Lindane)	SW8081B	1	0.71	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
beta-BHC	SW8081B	1	0.44	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
delta-BHC	SW8081B	1	0.65	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
Heptachlor	SW8081B	1	0.27	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
Aldrin	SW8081B	1	0.29	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
Heptachlor Epoxide	SW8081B	1	0.31	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
gamma-Chlordane	SW8081B	1	1.5	3.0	ND		ug/Kg	05/13/23	16:42	LA	474648
alpha-Chlordane	SW8081B	1	0.36	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
4,4'-DDE	SW8081B	1	0.61	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
Endosulfan I	SW8081B	1	0.29	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
Dieldrin	SW8081B	1	0.25	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
Endrin	SW8081B	1	0.79	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
4,4'-DDD	SW8081B	1	0.64	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
Endosulfan II	SW8081B	1	0.34	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
4,4'-DDT	SW8081B	1	0.74	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
Endrin Aldehyde	SW8081B	1	0.51	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
Methoxychlor	SW8081B	1	2.6	6.0	ND		ug/Kg	05/13/23	16:42	LA	474648
Endosulfan Sulfate	SW8081B	1	0.51	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
Endrin Ketone	SW8081B	1	0.43	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
Chlordane, Technical	SW8081B	1	2.7	20	ND		ug/Kg	05/13/23	16:42	LA	474648
Toxaphene	SW8081B	1	22	50	ND		ug/Kg	05/13/23	16:42	LA	474648
			Acceptance Limits								
Tetrachloro-M-Xylene (S)	SW8081B		48 - 125		**50.2**		%	05/13/23	16:42	LA	474648
Decachlorobiphenyl (S)	SW8081B		38 - 135		**52.0**		%	05/13/23	16:42	LA	474648

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-8-15	**Lab Sample ID:**	2305067-009A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 9:49		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	5:30	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-8-15	**Lab Sample ID:**	2305067-009A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 9:49		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/17/23 7:15:00PM
Prep Batch ID:	1151067	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/18/23	13:45	BJAY	474773

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-8-15	**Lab Sample ID:**	2305067-009A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 9:49		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/17/23 7:00:00PM
Prep Batch ID:	1151065	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:31	AT	474846
Arsenic	SW6010B	1	0.15	1.30	ND		mg/Kg	05/18/23	20:31	AT	474846
Barium	SW6010B	1	0.055	5.00	**60.5**		mg/Kg	05/18/23	20:31	AT	474846
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/18/23	20:31	AT	474846
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/18/23	20:31	AT	474846
Chromium	SW6010B	1	0.075	5.00	**9.00**		mg/Kg	05/18/23	20:31	AT	474846
Cobalt	SW6010B	1	0.070	5.00	**5.90**		mg/Kg	05/18/23	20:31	AT	474846
Copper	SW6010B	1	0.20	5.00	**7.00**		mg/Kg	05/18/23	20:31	AT	474846
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/18/23	20:31	AT	474846
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:31	AT	474846
Nickel	SW6010B	1	0.50	5.00	ND		mg/Kg	05/18/23	20:31	AT	474846
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/18/23	20:31	AT	474846
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/18/23	20:31	AT	474846
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:31	AT	474846
Vanadium	SW6010B	1	0.10	5.00	**34.0**		mg/Kg	05/18/23	20:31	AT	474846
Zinc	SW6010B	1	0.30	5.00	**26.7**		mg/Kg	05/18/23	20:31	AT	474846

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-8-30	**Lab Sample ID:**	2305067-012A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 10:12		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
N-Nitrosodimethylamine	SW8270C	1	46.9	720	ND		ug/Kg	05/22/23	1:41	MT	474888
Phenol	SW8270C	1	43.8	288	ND		ug/Kg	05/22/23	1:41	MT	474888
Bis(2-chloroethyl)ether	SW8270C	1	13.3	144	ND		ug/Kg	05/22/23	1:41	MT	474888
2-Chlorophenol	SW8270C	1	47.7	288	ND		ug/Kg	05/22/23	1:41	MT	474888
1,3-Dichlorobenzene	SW8270C	1	13.1	144	ND		ug/Kg	05/22/23	1:41	MT	474888
1,4-Dichlorobenzene	SW8270C	1	14.6	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Benzyl Alcohol	SW8270C	1	20.5	288	ND		ug/Kg	05/22/23	1:41	MT	474888
1,2-Dichlorobenzene	SW8270C	1	13.5	144	ND		ug/Kg	05/22/23	1:41	MT	474888
2-Methylphenol (o-Cresol)	SW8270C	1	29.3	288	ND		ug/Kg	05/22/23	1:41	MT	474888
N-Methyl-2-Pyrrolidone (NMP)	SW8270C	1	68.0	720	ND		ug/Kg	05/22/23	1:41	MT	474888
3-/4-Methylphenol (p-/m-Cresol)	SW8270C	1	31.3	288	ND		ug/Kg	05/22/23	1:41	MT	474888
N-nitroso-di-n-propylamine	SW8270C	1	13.2	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Hexachloroethane	SW8270C	1	17.1	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Nitrobenzene	SW8270C	1	12.8	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Isophorone	SW8270C	1	12.2	144	ND		ug/Kg	05/22/23	1:41	MT	474888
2-Nitrophenol	SW8270C	1	25.4	288	ND		ug/Kg	05/22/23	1:41	MT	474888
2,4-Dimethylphenol	SW8270C	1	22.8	288	ND		ug/Kg	05/22/23	1:41	MT	474888
Benzoic Acid	SW8270C	1	41.7	288	ND		ug/Kg	05/22/23	1:41	MT	474888
Bis(2-Chloroethoxy)methane	SW8270C	1	9.79	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Bis(2-chloroisopropyl)ether	SW8270C	1	12.6	144	ND		ug/Kg	05/22/23	1:41	MT	474888
2,4-Dichlorophenol	SW8270C	1	39.3	288	ND		ug/Kg	05/22/23	1:41	MT	474888
1,2,4-Trichlorobenzene	SW8270C	1	11.8	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Naphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/22/23	1:41	MT	474888
2,6-Dichlorophenol	SW8270C	1	35.8	288	ND		ug/Kg	05/22/23	1:41	MT	474888
Hexachloro-1,3-butadiene	SW8270C	1	8.34	144	ND		ug/Kg	05/22/23	1:41	MT	474888
4-Chloro-3-methylphenol	SW8270C	1	33.8	288	ND		ug/Kg	05/22/23	1:41	MT	474888
2-Methylnaphthalene	SW8270C	1	10.4	144	ND		ug/Kg	05/22/23	1:41	MT	474888
1-Methylnaphthalene	SW8270C	1	12.2	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Hexachlorocyclopentadiene	SW8270C	1	12.9	144	ND		ug/Kg	05/22/23	1:41	MT	474888
2,4,6-Trichlorophenol	SW8270C	1	35.9	288	ND		ug/Kg	05/22/23	1:41	MT	474888
2,4,5-Trichlorophenol	SW8270C	1	33.4	288	ND		ug/Kg	05/22/23	1:41	MT	474888
2-Chloronaphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/22/23	1:41	MT	474888
1,4-Dinitrobenzene	SW8270C	1	10.3	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Dimethyl phthalate	SW8270C	1	14.2	720	ND		ug/Kg	05/22/23	1:41	MT	474888
1,3-Dinitrobenzene	SW8270C	1	10.4	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Acenaphthylene	SW8270C	1	8.28	144	ND		ug/Kg	05/22/23	1:41	MT	474888
2,6-Dinitrotoluene	SW8270C	1	11.3	144	ND		ug/Kg	05/22/23	1:41	MT	474888
1,2-Dinitrobenzene	SW8270C	1	15.8	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Acenaphthene	SW8270C	1	10.7	144	ND		ug/Kg	05/22/23	1:41	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-8-30	**Lab Sample ID:**	2305067-012A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 10:12		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2,4-Dinitrophenol	SW8270C	1	77.6	720	ND		ug/Kg	05/22/23	1:41	MT	474888
4-Nitrophenol	SW8270C	1	54.7	720	ND		ug/Kg	05/22/23	1:41	MT	474888
Dibenzofuran	SW8270C	1	11.2	144	ND		ug/Kg	05/22/23	1:41	MT	474888
2,4-Dinitrotoluene	SW8270C	1	12.1	144	ND		ug/Kg	05/22/23	1:41	MT	474888
2,3,5,6-Tetrachlorophenol	SW8270C	1	27.6	288	ND		ug/Kg	05/22/23	1:41	MT	474888
2,3,4,6-Tetrachlorophenol	SW8270C	1	31.5	288	ND		ug/Kg	05/22/23	1:41	MT	474888
Diethylphthalate	SW8270C	1	13.6	720	ND		ug/Kg	05/22/23	1:41	MT	474888
Fluorene	SW8270C	1	10.3	144	ND		ug/Kg	05/22/23	1:41	MT	474888
4-Chlorophenyl-phenylether	SW8270C	1	9.32	144	ND		ug/Kg	05/22/23	1:41	MT	474888
4,6-Dinitro-2-methylphenol	SW8270C	1	13.4	288	ND		ug/Kg	05/22/23	1:41	MT	474888
Diphenylamine	SW8270C	1	13.0	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Azobenzene	SW8270C	1	114	144	ND		ug/Kg	05/22/23	1:41	MT	474888
4-Bromophenyl-phenylether	SW8270C	1	8.23	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Hexachlorobenzene	SW8270C	1	8.66	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Pentachlorophenol	SW8270C	1	25.0	288	ND		ug/Kg	05/22/23	1:41	MT	474888
Phenanthrene	SW8270C	1	9.32	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Anthracene	SW8270C	1	8.91	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Carbazole	SW8270C	1	10.7	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Di-n-butylphthalate	SW8270C	1	13.5	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Fluoranthene	SW8270C	1	10.0	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Benzidine	SW8270C	1	147	147	ND		ug/Kg	05/22/23	1:41	MT	474888
Pyrene	SW8270C	1	12.0	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Butylbenzylphthalate	SW8270C	1	21.0	720	ND		ug/Kg	05/22/23	1:41	MT	474888
Benzo(a)anthracene	SW8270C	1	9.80	144	ND		ug/Kg	05/22/23	1:41	MT	474888
3,3-Dichlorobenzidine	SW8270C	1	118	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Chrysene	SW8270C	1	15.2	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Bis(2-Ethylhexyl)phthalate	SW8270C	1	15.3	720	ND		ug/Kg	05/22/23	1:41	MT	474888
Di-n-Octylphthalate	SW8270C	1	12.3	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Benzo(b)fluorathene	SW8270C	1	12.0	144	ND		ug/Kg	05/22/23	1:41	MT	474888
benzo(k)fluorathene	SW8270C	1	8.16	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Benzo(a)pyrene	SW8270C	1	9.80	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Indeno(1,2,3-c,d)pyrene	SW8270C	1	13.8	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Dibenzo(a,h)anthracene	SW8270C	1	12.7	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Benzo(g,h,i)perylene	SW8270C	1	16.7	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Pyridine	SW8270C	1	43.8	720	ND		ug/Kg	05/22/23	1:41	MT	474888
			Acceptance Limits								
2-Fluorophenol (S)	SW8270C		25 - 121		**41.7**		%	05/22/23	1:41	MT	474888
Phenol-d6 (S)	SW8270C		24 - 113		**63.6**		%	05/22/23	1:41	MT	474888
2,4,6-Tribromophenol (S)	SW8270C		19 - 122		**77.2**		%	05/22/23	1:41	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-8-30	**Lab Sample ID:**	2305067-012A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 10:12		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23	11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2-Fluorobiphenyl (S)	SW8270C		45 - 143		**88.3**		%	05/22/23	1:41	MT	474888
Nitrobenzene-d5 (S)	SW8270C		23 - 120		**68.9**		%	05/22/23	1:41	MT	474888
p-Terphenyl-d14 (S)	SW8270C		18 - 137		**90.6**		%	05/22/23	1:41	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-8-30	**Lab Sample ID:**	2305067-012A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 10:12		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/19/23 10:46:00AM
Prep Batch ID:	1151221	**Prep Analyst:**	HVYAS

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	1.2	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Chloromethane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Vinyl Chloride	SW8260B	1	2.0	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Bromomethane	SW8260B	1	2.7	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Chloroethane	SW8260B	1	3.0	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Trichlorofluoromethane	SW8260B	1	2.1	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,1-Dichloroethene	SW8260B	1	2.0	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Freon 113	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Methylene Chloride	SW8260B	1	7.1	10	ND		ug/Kg	05/19/23	20:09	HV	474928
trans-1,2-Dichloroethene	SW8260B	1	2.1	10	ND		ug/Kg	05/19/23	20:09	HV	474928
MTBE	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	20:09	HV	474928
TBA	SW8260B	1	12	50	ND		ug/Kg	05/19/23	20:09	HV	474928
Diisopropyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,1-Dichloroethane	SW8260B	1	2.2	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Ethyl tert-Butyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	20:09	HV	474928
cis-1,2-Dichloroethene	SW8260B	1	2.2	10	ND		ug/Kg	05/19/23	20:09	HV	474928
2,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Bromochloromethane	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Chloroform	SW8260B	1	2.4	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Carbon Tetrachloride	SW8260B	1	2.1	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,1,1-Trichloroethane	SW8260B	1	2.1	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,1-Dichloropropene	SW8260B	1	2.0	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Benzene	SW8260B	1	2.2	10	ND		ug/Kg	05/19/23	20:09	HV	474928
TAME	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,2-Dichloroethane	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Trichloroethene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Dibromomethane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Bromodichloromethane	SW8260B	1	2.0	10	ND		ug/Kg	05/19/23	20:09	HV	474928
cis-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Toluene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Tetrachloroethene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	20:09	HV	474928
trans-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,1,2-Trichloroethane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Dibromochloromethane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,3-Dichloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,2-Dibromoethane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Chlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Ethylbenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	20:09	HV	474928

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-8-30	**Lab Sample ID:**	2305067-012A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 10:12		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/19/23 10:46:00AM
Prep Batch ID:	1151221	**Prep Analyst:**	HVYAS

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	20:09	HV	474928
m,p-Xylene	SW8260B	1	3.2	10	ND		ug/Kg	05/19/23	20:09	HV	474928
o-Xylene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Styrene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Bromoform	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Isopropyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	20:09	HV	474928
n-Propylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Bromobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,1,2,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	20:09	HV	474928
2-Chlorotoluene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,3,5-Trimethylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,2,3-Trichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	20:09	HV	474928
4-Chlorotoluene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	20:09	HV	474928
tert-Butylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,2,4-Trimethylbenzene	SW8260B	1	1.4	10	ND		ug/Kg	05/19/23	20:09	HV	474928
sec-Butyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	20:09	HV	474928
p-Isopropyltoluene	SW8260B	1	1.5	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,3-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,4-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	20:09	HV	474928
n-Butylbenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,2-Dichlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,2-Dibromo-3-Chloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Hexachlorobutadiene	SW8260B	1	1.4	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,2,4-Trichlorobenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Naphthalene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,2,3-Trichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	20:09	HV	474928
2-Butanone	SW8260B	1	2.3	10.0	ND		ug/Kg	05/19/23	20:09	HV	474928
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**69.3**		%	05/19/23	20:09	HV	474928
(S) Toluene-d8	SW8260B		55.2 - 133		**103**		%	05/19/23	20:09	HV	474928
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**102**		%	05/19/23	20:09	HV	474928

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-9-5	**Lab Sample ID:**	2305067-013A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 12:30		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	6:34	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-9-5	**Lab Sample ID:**	2305067-013A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 12:30		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/15/23	5:45:00PM
Prep Batch ID:	1150976	**Prep Analyst:**	AJNG	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/16/23	13:54	ERR	474697

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-9-5	**Lab Sample ID:**	2305067-013A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 12:30		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/15/23 5:15:00PM
Prep Batch ID:	1150962	**Prep Analyst:**	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	21:01	AT	474699
Arsenic	SW6010B	1	0.15	1.30	**3.22**		mg/Kg	05/15/23	21:01	AT	474699
Barium	SW6010B	1	0.055	5.00	**127**		mg/Kg	05/15/23	21:01	AT	474699
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/15/23	21:01	AT	474699
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/15/23	21:01	AT	474699
Chromium	SW6010B	1	0.075	5.00	**39.8**		mg/Kg	05/15/23	21:01	AT	474699
Cobalt	SW6010B	1	0.070	5.00	**11.0**		mg/Kg	05/15/23	21:01	AT	474699
Copper	SW6010B	1	0.20	5.00	**43.7**		mg/Kg	05/15/23	21:01	AT	474699
Lead	SW6010B	1	0.10	3.00	**36.2**		mg/Kg	05/15/23	21:01	AT	474699
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	21:01	AT	474699
Nickel	SW6010B	1	0.50	5.00	**46.6**		mg/Kg	05/15/23	21:01	AT	474699
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/15/23	21:01	AT	474699
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/15/23	21:01	AT	474699
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/15/23	21:01	AT	474699
Vanadium	SW6010B	1	0.10	5.00	**48.4**		mg/Kg	05/15/23	21:01	AT	474699
Zinc	SW6010B	1	0.30	5.00	**80.5**		mg/Kg	05/15/23	21:01	AT	474699

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-9-15	**Lab Sample ID:**	2305067-015A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 12:40		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	6:56	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-9-15	**Lab Sample ID:**	2305067-015A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 12:40		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/17/23 7:15:00PM
Prep Batch ID:	1151067	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/18/23	13:52	BJAY	474773

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-9-15	**Lab Sample ID:**	2305067-015A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 12:40		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/17/23 7:00:00PM
Prep Batch ID:	1151065	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:32	AT	474846
Arsenic	SW6010B	1	0.15	1.30	ND		mg/Kg	05/18/23	20:32	AT	474846
Barium	SW6010B	1	0.055	5.00	**51.5**		mg/Kg	05/18/23	20:32	AT	474846
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/18/23	20:32	AT	474846
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/18/23	20:32	AT	474846
Chromium	SW6010B	1	0.075	5.00	**7.05**		mg/Kg	05/18/23	20:32	AT	474846
Cobalt	SW6010B	1	0.070	5.00	ND		mg/Kg	05/18/23	20:32	AT	474846
Copper	SW6010B	1	0.20	5.00	**6.05**		mg/Kg	05/18/23	20:32	AT	474846
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/18/23	20:32	AT	474846
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:32	AT	474846
Nickel	SW6010B	1	0.50	5.00	ND		mg/Kg	05/18/23	20:32	AT	474846
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/18/23	20:32	AT	474846
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/18/23	20:32	AT	474846
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:32	AT	474846
Vanadium	SW6010B	1	0.10	5.00	**27.5**		mg/Kg	05/18/23	20:32	AT	474846
Zinc	SW6010B	1	0.30	5.00	**21.7**		mg/Kg	05/18/23	20:32	AT	474846

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305067	**Prep Method:**	3546_OCP	**Prep Date:**	05/13/23	**Prep Batch:**	1150929
Matrix:	Soil	**Analytical Method:**	SW8081B	**Analyzed Date:**	5/13/2023	**Analytical Batch:**	474648
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
alpha-BHC	0.25	2.0	ND	
gamma-BHC (Lindane)	0.71	2.0	ND	
beta-BHC	0.44	2.0	ND	
delta-BHC	0.65	2.0	ND	
Heptachlor	0.27	2.0	ND	
Aldrin	0.29	2.0	ND	
Heptachlor Epoxide	0.31	2.0	ND	
gamma-Chlordane	1.5	3.0	ND	
alpha-Chlordane	0.36	2.0	ND	
4,4'-DDE	0.61	2.0	1.97	
Endosulfan I	0.29	2.0	ND	
Dieldrin	0.25	2.0	ND	
Endrin	0.79	2.0	ND	
4,4'-DDD	0.64	2.0	ND	
Endosulfan II	0.34	2.0	ND	
4,4'-DDT	0.74	2.0	ND	
Endrin Aldehyde	0.51	2.0	ND	
Methoxychlor	2.6	6.0	ND	
Endosulfan Sulfate	0.51	2.0	ND	
Endrin Ketone	0.43	2.0	ND	
Chlordane, Technical	2.7	20	ND	
Toxaphene	22	50	ND	
Tetrachloro-M-Xylene (S)			89.6	
Decachlorobiphenyl (S)			92.9	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305067	**Prep Method:**	3050B	**Prep Date:**	05/15/23	**Prep Batch:**	1150962
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/15/2023	**Analytical Batch:**	474699
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Antimony	0.050	5.00	ND	
Arsenic	0.15	1.30	ND	
Barium	0.055	5.00	0.14	J
Beryllium	0.055	5.00	ND	
Cadmium	0.10	0.750	ND	
Chromium	0.075	5.00	0.13	J
Cobalt	0.070	5.00	ND	
Copper	0.20	5.00	ND	
Lead	0.10	3.00	ND	
Molybdenum	0.050	5.00	0.050	
Nickel	0.50	5.00	ND	
Selenium	0.35	1.10	ND	
Silver	0.15	0.500	ND	
Thallium	0.55	5.00	ND	
Vanadium	0.10	5.00	ND	
Zinc	0.30	5.00	3.2	J

Work Order:	2305067	**Prep Method:**	7471BP	**Prep Date:**	05/15/23	**Prep Batch:**	1150976
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/16/2023	**Analytical Batch:**	474697
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Mercury	0.083	0.50	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305067	**Prep Method:**	3050B	**Prep Date:**	05/17/23	**Prep Batch:**	1151065
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474846
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Antimony	0.050	5.00	0.065	
Arsenic	0.15	1.30	ND	
Barium	0.055	5.00	0.19	
Beryllium	0.055	5.00	ND	
Cadmium	0.10	0.750	ND	
Chromium	0.075	5.00	0.16	
Cobalt	0.070	5.00	ND	
Copper	0.20	5.00	ND	
Lead	0.10	3.00	ND	
Molybdenum	0.050	5.00	0.15	
Nickel	0.50	5.00	ND	
Selenium	0.35	1.10	ND	
Silver	0.15	0.500	ND	
Thallium	0.55	5.00	ND	
Vanadium	0.10	5.00	ND	
Zinc	0.30	5.00	ND	

Work Order:	2305067	**Prep Method:**	7471BP	**Prep Date:**	05/17/23	**Prep Batch:**	1151067
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474773
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Mercury	0.083	0.50	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305067	**Prep Method:**	3546_BNA	**Prep Date:**	05/19/23	**Prep Batch:**	1151137
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474887
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
N-Nitrosodimethylamine	46.9	720	ND		
Phenol	43.8	288	ND		
Bis(2-chloroethyl)ether	13.3	144	ND		
2-Chlorophenol	47.7	288	ND		
1,3-Dichlorobenzene	13.1	144	ND		
1,4-Dichlorobenzene	14.6	144	ND		
Benzyl Alcohol	20.5	288	ND		
1,2-Dichlorobenzene	13.5	144	ND		
2-Methylphenol (o-Cresol)	29.3	288	ND		
N-Methyl-2-Pyrrolidone (NMP)	68.0	720	ND		
	12.6	144	ND		
3-/4-Methylphenol (p-/m-Cresol)	31.3	288	ND		
N-nitroso-di-n-propylamine	13.2	144	ND		
Hexachloroethane	17.1	144	ND		
Nitrobenzene	12.8	144	ND		
Isophorone	12.2	144	ND		
2-Nitrophenol	25.4	288	ND		
2,4-Dimethylphenol	22.8	288	ND		
Benzoic Acid	41.7	288	ND		
Bis(2-Chloroethoxy)methane	9.79	144	ND		
Bis(2-chloroisopropyl)ether	12.6	144	ND		
2,4-Dichlorophenol	39.3	288	ND		
1,2,4-Trichlorobenzene	11.8	144	ND		
Naphthalene	10.6	144	ND		
2,6-Dichlorophenol	35.8	288	ND		
Hexachloro-1,3-butadiene	8.34	144	ND		
4-Chloro-3-methylphenol	33.8	288	ND		
2-Methylnaphthalene	10.4	144	ND		
1-Methylnaphthalene	12.2	144	ND		
Hexachlorocyclopentadiene	12.9	144	ND		
2,4,6-Trichlorophenol	35.9	288	ND		
2,4,5-Trichlorophenol	33.4	288	ND		
2-Chloronaphthalene	10.6	144	ND		
1,4-Dinitrobenzene	10.3	144	ND		
Dimethyl phthalate	14.2	720	ND		
1,3-Dinitrobenzene	10.4	144	ND		
Acenaphthylene	8.28	144	ND		
2,6-Dinitrotoluene	11.3	144	ND		
1,2-Dinitrobenzene	15.8	144	ND		
Acenaphthene	10.7	144	ND		
2,4-Dinitrophenol	77.6	720	ND		
4-Nitrophenol	54.7	720	ND		
Dibenzofuran	11.2	144	ND		
2,4-Dinitrotoluene	12.1	144	ND		
2,3,5,6-Tetrachlorophenol	27.6	288	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305067	**Prep Method:**	3546_BNA	**Prep Date:**	05/19/23	**Prep Batch:**	1151137
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474887
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
2,3,4,6-Tetrachlorophenol	31.5	288	ND	
Diethylphthalate	13.6	720	79.2	
Fluorene	10.3	144	ND	
4-Chlorophenyl-phenylether	9.32	144	ND	
4,6-Dinitro-2-methylphenol	13.4	288	ND	
Diphenylamine	13.0	144	ND	
Azobenzene	114	144	ND	
4-Bromophenyl-phenylether	8.23	144	ND	
Hexachlorobenzene	8.66	144	ND	
Pentachlorophenol	25.0	288	ND	
Phenanthrene	9.32	144	ND	
Anthracene	8.91	144	ND	
Carbazole	10.7	144	ND	
Di-n-butylphthalate	13.5	144	ND	
Fluoranthene	10.0	147	ND	
Benzidine	147	144	ND	
Pyrene	12.0	144	ND	
Butylbenzylphthalate	21.0	720	ND	
Benzo(a)anthracene	9.80	144	ND	
3,3-Dichlorobenzidine	118	144	ND	
Chrysene	15.2	144	ND	
Bis(2-Ethylhexyl)phthalate	15.3	720	ND	
Di-n-Octylphthalate	12.3	144	ND	
Benzo(b)fluorathene	12.0	144	ND	
benzo(k)fluorathene	8.16	144	ND	
Benzo(a)pyrene	9.80	144	ND	
Indeno(1,2,3-c,d)pyrene	13.8	144	ND	
Dibenzo(a,h)anthracene	12.7	144	ND	
Benzo(g,h,i)perylene	12.7	144	ND	
Pyridine	43.8	720	ND	
2-Fluorophenol (S)			88.1	
Phenol-d6 (S)			105	
2,4,6-Tribromophenol (S)			96.0	
2-Fluorobiphenyl (S)			80.2	
Nitrobenzene-d5 (S)			88.9	
p-Terphenyl-d14 (S)			91.7	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305067	**Prep Method:**	7199MP	**Prep Date:**	05/18/23	**Prep Batch:**	1151157
Matrix:	Soil	**Analytical Method:**	SW7199	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474857
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Hexavalent Chromium	3.1	10	ND		

Work Order:	2305067	**Prep Method:**	7199MP	**Prep Date:**	05/18/23	**Prep Batch:**	1151158
Matrix:	Soil	**Analytical Method:**	SW7199	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474858
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Hexavalent Chromium	3.1	10	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305067	**Prep Method:**	5035	**Prep Date:**	05/19/23	**Prep Batch:**	1151221
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474928
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Dichlorodifluoromethane	1.2	10	ND		
Chloromethane	1.8	10	ND		
Vinyl Chloride	2.0	10	ND		
Bromomethane	2.7	10	ND		
Chloroethane	3.0	10	ND		
Trichlorofluoromethane	2.1	10	ND		
1,1-Dichloroethene	2.0	10	ND		
Freon 113	1.9	10	ND		
Methylene Chloride	7.1	10	ND		
trans-1,2-Dichloroethene	2.1	10	ND		
MTBE	2.3	10	ND		
TBA	12	50	ND		
Diisopropyl ether	2.3	10	ND		
1,1-Dichloroethane	2.2	10	ND		
Ethyl tert-Butyl ether	2.3	10	ND		
cis-1,2-Dichloroethene	2.2	10	ND		
2,2-Dichloropropane	1.9	10	ND		
Bromochloromethane	2.3	10	ND		
Chloroform	2.4	10	ND		
Carbon Tetrachloride	2.1	10	ND		
1,1,1-Trichloroethane	2.1	10	ND		
1,1-Dichloropropene	2.0	10	ND		
Benzene	2.2	10	ND		
TAME	2.3	10	ND		
1,2-Dichloroethane	2.3	10	ND		
Trichloroethene	1.8	10	ND		
Dibromomethane	1.8	10	ND		
1,2-Dichloropropane	1.9	10	ND		
Bromodichloromethane	2.0	10	ND		
cis-1,3-Dichloropropene	1.6	10	ND		
Toluene	1.8	10	ND		
Tetrachloroethene	1.7	10	ND		
trans-1,3-Dichloropropene	1.6	10	ND		
1,1,2-Trichloroethane	1.8	10	ND		
Dibromochloromethane	1.9	10	ND		
1,3-Dichloropropane	1.8	10	ND		
1,2-Dibromoethane	1.8	10	ND		
Chlorobenzene	1.8	10	ND		
Ethylbenzene	1.7	10	ND		
1,1,1,2-Tetrachloroethane	1.9	10	ND		
m,p-Xylene	3.2	10	ND		
o-Xylene	1.7	10	ND		
Styrene	1.6	10	ND		
Bromoform	1.7	10	ND		
Isopropyl Benzene	1.6	10	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305067	**Prep Method:**	5035	**Prep Date:**	05/19/23	**Prep Batch:**	1151221
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474928
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
n-Propylbenzene	1.6	10	ND	
Bromobenzene	1.8	10	ND	
1,1,2,2-Tetrachloroethane	1.9	10	ND	
2-Chlorotoluene	1.8	10	ND	
1,3,5-Trimethylbenzene	1.6	10	ND	
1,2,3-Trichloropropane	1.9	10	ND	
4-Chlorotoluene	1.6	10	ND	
tert-Butylbenzene	1.6	10	ND	
1,2,4-Trimethylbenzene	1.4	10	ND	
sec-Butyl Benzene	1.6	10	ND	
p-Isopropyltoluene	1.5	10	ND	
1,3-Dichlorobenzene	1.7	10	ND	
1,4-Dichlorobenzene	1.7	10	ND	
n-Butylbenzene	1.5	10	ND	
1,2-Dichlorobenzene	1.8	10	ND	
1,2-Dibromo-3-Chloropropane	1.8	10	ND	
Hexachlorobutadiene	1.4	10	ND	
1,2,4-Trichlorobenzene	1.5	10	ND	
Naphthalene	1.7	10	ND	
1,2,3-Trichlorobenzene	1.7	10	ND	
2-Butanone	2.3	10	ND	
MIBK	2.0	50	ND	
Hexachloroethane	5.0	10	ND	
1,4-Dioxane	100	200	ND	
2-Hexanone	5.0	20	ND	
Acetone	8.2	20	ND	
(S) Dibromofluoromethane			77.9	
(S) Toluene-d8			99.6	
(S) 4-Bromofluorobenzene			97.6	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305067	**Prep Method:**	3546_OCP	**Prep Date:**	05/13/23	**Prep Batch:**	1150929
Matrix:	Soil	**Analytical Method:**	SW8081B	**Analyzed Date:**	5/13/2023	**Analytical Batch:**	474648
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
gamma-BHC (Lindane)	0.16	2.0	ND	40	81.7	85.6	4.78	25 - 135	30	
Heptachlor	0.11	2.0	ND	40	85.9	90.8	5.37	40 - 130	30	
Aldrin	0.20	2.0	ND	40	86.6	90.2	3.95	25 - 140	30	
delta-BHC	0.15	2.0	ND	40	86.3	91.6	5.91	60 - 130	30	
Heptachlor	0.19	2.0	ND	40	87.4	92.2	5.29	55 - 135	30	
4,4'-DDT	0.13	2.0	ND	40	88.1	94.2	6.86	45 - 140	30	
Tetrachloro-M-Xylene (S)				100	82.9	83.0		48 - 125		
Decachlorobiphenyl (S)				100	93.1	94.9		38 - 135		

Work Order:	2305067	**Prep Method:**	3050B	**Prep Date:**	05/15/23	**Prep Batch:**	1150962
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/15/2023	**Analytical Batch:**	474699
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony	0.050	5.00	ND	50	98.3	99.6	1.21	80 - 120	30	
Arsenic	0.15	1.30	ND	50	99.4	100	0.602	80 - 120	30	
Barium	0.055	5.00	0.14	50	101	102	0.985	80 - 120	30	
Beryllium	0.055	5.00	ND	50	102	103	0.976	80 - 120	30	
Cadmium	0.10	0.750	ND	50	101	102	0.985	80 - 120	30	
Chromium	0.075	5.00	0.13	50	102	103	0.976	80 - 120	30	
Cobalt	0.070	5.00	ND	50	102	103	0.976	80 - 120	30	
Copper	0.20	5.00	ND	50	102	103	0.976	80 - 120	30	
Lead	0.10	3.00	ND	50	101	102	0.985	80 - 120	30	
Molybdenum	0.050	5.00	0.050	50	101	102	0.985	80 - 120	30	
Nickel	0.50	5.00	ND	50	102	103	0.976	80 - 120	30	
Selenium	0.22	5.00	ND	50	92.9	93.5	0.643	80 - 120	30	
Silver	0.15	5.00	ND	50	99.3	100	0.602	80 - 120	30	
Thallium	0.20	5.00	ND	50	99.8	101	1.20	80 - 120	30	
Vanadium	0.10	5.00	ND	50	102	103	0.976	80 - 120	30	
Zinc	0.30	5.00	3.2	50	111	111	0.000	80 - 120	30	

Work Order:	2305067	**Prep Method:**	7471BP	**Prep Date:**	05/15/23	**Prep Batch:**	1150976
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/16/2023	**Analytical Batch:**	474697
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury	0.047	0.50	ND	1.25	105	104	0.766	80 - 120	20	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305067	**Prep Method:**	3050B	**Prep Date:**	05/17/23	**Prep Batch:**	1151065
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474846
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony	0.050	5.00	0.065	50	99.7	100	0.200	80 - 120	30	
Arsenic	0.15	1.30	ND	50	98.4	98.7	0.406	80 - 120	30	
Barium	0.055	5.00	0.19	50	103	103	0.000	80 - 120	30	
Beryllium	0.055	5.00	ND	50	102	102	0.000	80 - 120	30	
Cadmium	0.10	0.750	ND	50	101	101	0.000	80 - 120	30	
Chromium	0.075	5.00	0.16	50	103	103	0.000	80 - 120	30	
Cobalt	0.070	5.00	ND	50	102	102	0.000	80 - 120	30	
Copper	0.20	5.00	ND	50	105	105	0.000	80 - 120	30	
Lead	0.10	3.00	ND	50	102	102	0.000	80 - 120	30	
Molybdenum	0.050	5.00	0.15	50	103	103	0.000	80 - 120	30	
Nickel	0.50	5.00	ND	50	102	102	0.000	80 - 120	30	
Selenium	0.22	5.00	ND	50	91.8	92.4	0.651	80 - 120	30	
Silver	0.15	5.00	ND	50	100	101	0.995	80 - 120	30	
Thallium	0.20	5.00	ND	50	99.7	101	1.20	80 - 120	30	
Vanadium	0.10	5.00	ND	50	103	103	0.000	80 - 120	30	
Zinc	0.30	5.00	ND	50	100	101	0.995	80 - 120	30	

Work Order:	2305067	**Prep Method:**	7471BP	**Prep Date:**	05/17/23	**Prep Batch:**	1151067
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474773
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury	0.047	0.50	ND	1.25	117	117	0.000	80 - 120	20	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305067	**Prep Method:**	3546_BNA	**Prep Date:**	05/19/23	**Prep Batch:**	1151137
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474887
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Phenol	43.8	288	ND	1200	92.5	94.2	1.79	40 - 100	30	
2-Chlorophenol	47.7	288	ND	1200	92.4	88.8	3.67	45 - 105	30	
Bis(2-chloroethyl)ether	14.6	144	ND	400	76.2	75.7	0.658	35 - 105	30	
N-nitroso-di-n-propylamine	13.2	144	ND	400	107	109	1.85	40 - 115	30	
1,2,4-Trichlorobenzene	11.8	144	ND	400	78.7	75.4	4.21	45 - 110	30	
1,4-Dichlorobenzene	33.8	288	ND	1200	103	95.8	7.53	45 - 110	30	
Acenaphthene	10.7	144	ND	400	93.0	86.2	7.53	45 - 110	30	
4-Nitrophenol	54.7	720	ND	1200	87.3	81.4	7.31	15 - 140	30	
2,4-Dinitrotoluene	12.1	144	ND	400	91.9	91.3	0.819	50 - 115	30	
N-Methyl-2-Pyrrolidone (NMP)	12.0	144	ND	1200	68.3	70.5	3.12	25 - 120	30	
Pyrene	12.0	144	ND	400	90.7	87.6	3.65	45 - 145	30	
2-Fluorophenol (S)				11100	86.8	84.7		25 - 121		
Phenol-d6 (S)				11100	95.7	98.5		24 - 113		
2,4,6-Tribromophenol (S)				11100	107	97.9		19 - 122		
2-Fluorobiphenyl (S)				5560	89.1	81.3		30 - 143		
Nitrobenzene-d5 (S)				5560	93.6	77.9		23 - 120		
p-Terphenyl-d14 (S)				5560	86.3	79.5		18 - 137		

Work Order:	2305067	**Prep Method:**	7199MP	**Prep Date:**	05/18/23	**Prep Batch:**	1151157
Matrix:	Soil	**Analytical Method:**	SW7199	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474857
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Hexavalent Chromium	3.1	10	ND	100	101	103	1.96	80 - 120	20	

Work Order:	2305067	**Prep Method:**	7199MP	**Prep Date:**	05/18/23	**Prep Batch:**	1151158
Matrix:	Soil	**Analytical Method:**	SW7199	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474858
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Hexavalent Chromium	3.1	10	ND	100	99.6	99.9	0.301	80 - 120	20	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305067	**Prep Method:**	5035	**Prep Date:**	05/19/23	**Prep Batch:**	1151221
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474928
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
1,1-Dichloroethene	2.0	10	ND	50.0	113	90.0	23.0	53.7 - 139	30	
Benzene	2.2	10	ND	50.0	113	90.0	22.3	66.5 - 135	30	
Trichloroethene	1.8	10	ND	50.0	115	91.8	22.4	57.5 - 150	30	
Toluene	1.8	10	ND	50.0	109	94.1	15.1	56.8 - 134	30	
Chlorobenzene	1.8	10	ND	50.0	109	91.6	17.0	57.4 - 134	30	
(S) Dibromofluoromethane				50.0	104	85.8		59.8 - 148		
(S) Toluene-d8				50.0	110	92.9		55.2 - 133		
(S) 4-Bromofluorobenzene				50.0	112	94.3		55.8 - 141		

Laboratory Qualifiers and Definitions

DEFINITIONS:

Accuracy/Bias (% Recovery) - The closeness of agreement between an observed value and an accepted reference value.
Blank (Method/Preparation Blank) -MB/PB - An analyte-free matrix to which all reagents are added in the same volumes/proportions as used in sample processing. The method blank is used to document contamination resulting from the analytical process.
Duplicate - a field sample and/or laboratory QC sample prepared in duplicate following all of the same processes and procedures used on the original sample (sample duplicate, LCSD, MSD)
Laboratory Control Sample (LCS ad LCSD) - A known matrix spiked with compounds representative of the target analyte(s). This is used to document laboratory performance.
Matrix - the component or substrate that contains the analyte of interest (e.g., - groundwater, sediment, soil, waste water, etc)
Matrix Spike (MS/MSD) - Client sample spiked with identical concentrations of target analyte (s). The spiking occurs prior to the sample preparation and analysis. They are used to document the precision and bias of a method in a given sample matrix.
Method Detection Limit (MDL) - the minimum concentration of a substance that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero
Practical Quantitation Limit/Reporting Limit/Limit of Quantitation (PQL/RL/LOQ) - a laboratory determined value at 2 to 5 times above the MDL that can be reproduced in a manner that results in a 99% confidence level that the result is both accurate and precise. PQLs/RLs/LODs reflect all preparation factors and/or dilution factors that have been applied to the sample during the preparation and/or analytical processes.
Precision (%RPD) - The agreement among a set of replicate/duplicate measurements without regard to known value of the replicates
Surrogate (S) or (Surr) - An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. Surrogates are used in most organic analysis to demonstrate matrix compatibility with the chosen method of analysis
Tentatively Identified Compound (TIC) - A compound not contained within the analytical calibration standards but present in the GCMS library of defined compounds. When the library is searched for an unknown compound, it can frequently give a tentative identification to the compound based on retention time and primary and secondary ion match. TICs are reported as estimates and are candidates for further investigation.
Units: the unit of measure used to express the reported result - **mg/L** and ***mg/Kg*** (equivalent to PPM - parts per million in **liquid** and ***solid***), **ug/L** and ***ug/Kg*** (equivalent to PPB - parts per billion in **liquid** and ***solid***), **ug/m3**, ***mg/m3***, **ppbv** and ***ppmv*** (all units of measure for reporting concentrations in air), **%** (equivalent to 10000 ppm or 1,000,000 ppb), **ug/Wipe** (concentration found on the surface of a single Wipe usually taken over a 100cm2 surface)

LABORATORY QUALIFIERS

B - Indicates when the analyte is found in the associated method or preparation blank
D - Surrogate is not recoverable due to the necessary dilution of the sample
E - Indicates the reportable value is outside of the calibration range of the instrument but within the linear range of the instrument (unless otherwise noted) Values reported with an E qualifier should be considered as estimated.
H- Indicates that the recommended holding time for the analyte or compound has been exceeded
J- Indicates a value between the method MDL and PQL and that the reported concentration should be considered as estimated rather the quantitative
NA - Not Analyzed
N/A - Not Applicable
ND - Not Detected at a concentration greater than the PQL/RL or, if reported to the MDL, at greater than the MDL.
NR - Not recoverable - a matrix spike concentration is not recoverable due to a concentration within the original sample that is greater than four times the spike concentration added
R- The % RPD between a duplicate set of samples is outside of the absolute values established by laboratory control charts
S- Spike recovery is outside of established method and/or laboratory control limits. Further explanation of the use of this qualifier should be included within a case narrative
X -Used to indicate that a value based on pattern identification is within the pattern range but not typical of the pattern found in standards. Further explanation may or may not be provided within the sample footnote and/or the case narrative.

Sample Receipt Checklist

Client Name: Langan

Project Name: VERNON

Work Order No.: 2305067

Date and Time Received: 5/9/2023 10:06:00AM

Received By: Lorna Imbat

Physically Logged By: Lorna Imbat

Checklist Completed By: Lorna Imbat

Carrier Name: FedEx

Chain of Custody (COC) Information

Chain of custody present?	Yes
Chain of custody signed when relinquished and received?	Yes
Chain of custody agrees with sample labels?	Yes
Custody seals intact on sample bottles?	Not Present

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Not Present
Shipping Container/Cooler In Good Condition?	Yes
Samples in proper container/bottle?	Yes
Samples containers intact?	Yes
Sufficient sample volume for indicated test?	Yes

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes			
Container/Temp Blank temperature in compliance?	Yes	Temperature:	2.0	°C
Water-VOA vials have zero headspace?	No VOA vials submitted			
Water-pH acceptable upon receipt?	N/A			

pH Checked by: N/A

pH Adjusted by: N/A

Comments:

Torrent LABORATORY, INC.

Login Summary Report

Client ID: TL5493 Langan
Project Name: VERNON
Project # : 721040501
Report Due Date: 5/23/2023

QC Level: II
TAT Requested: 3 Day Std:3
Date Received: 5/9/2023
Time Received: 10:06 am

Comments:

Work Order # : ***2305067***

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
2305067-001A	B-3-5	05/05/23 7:57	Soil	11/01/23			Hg_S_7471B Cr6_S_7199Mod Met_S_6010B CAM17 Pest_S_8081OCP	
Sample Note:								
2305067-002A	B-3-10	05/05/23 8:06	Soil	11/01/23			Hold Samples SVO_S_8270CFull VOC_S_8260B	
Sample Note:	VOCs, SVOCs due 5/23							
2305067-003A	B-3-15	05/05/23 8:10	Soil	11/01/23			Hold Samples Met_S_6010B CAM17 Cr6_S_7199Mod Hg_S_7471B	
2305067-004A	B-3-20	05/05/23 8:17	Soil	11/01/23			Hold Samples	
2305067-005A	B-3-25	05/05/23 8:22	Soil	11/01/23			Hold Samples	
2305067-006A	B-3-30	05/05/23 8:27	Soil	11/01/23			Hold Samples SVO_S_8270CFull VOC_S_8260B	
2305067-007A	B-8-5	05/05/23 9:40	Soil	11/01/23			Hg_S_7471B Cr6_S_7199Mod Met_S_6010B CAM17 Pest_S_8081OCP	
2305067-008A	B-8-10	05/05/23 9:45	Soil	11/01/23			Hold Samples	
2305067-009A	B-8-15	05/05/23 9:49	Soil	11/01/23			Hold Samples Met_S_6010B CAM17 Cr6_S_7199Mod Hg_S_7471B	
2305067-010A	B-8-20	05/05/23 9:59	Soil	11/01/23			Hold Samples	
2305067-011A	B-8-25	05/05/23 10:05	Soil	11/01/23			Hold Samples	
2305067-012A	B-8-30	05/05/23 10:12	Soil	11/01/23				

Login Summary Report

Client ID:	TL5493	Langan	**QC Level:**	II
Project Name:	VERNON		**TAT Requested:**	3 Day Std:3
Project # :	721040501		**Date Received:**	5/9/2023
Report Due Date:	5/23/2023		**Time Received:**	10:06 am

Comments:

Work Order # : ***2305067***

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
							Hold Samples SVO_S_8270CFull VOC_S_8260B	
2305067-013A	B-9-5	05/05/23 12:30	Soil	11/01/23			Hg_S_7471B Cr6_S_7199Mod Met_S_6010B CAM17	
2305067-014A	B-9-10	05/05/23 12:35	Soil	11/01/23			Hold Samples	
2305067-015A	B-9-15	05/05/23 12:40	Soil	11/01/23			Hold Samples Met_S_6010B CAM17 Cr6_S_7199Mod Hg_S_7471B	
2305067-016A	B-9-20	05/05/23 12:45	Soil	11/01/23			Hold Samples	
2305067-017A	B-9-25	05/05/23 12:48	Soil	11/01/23			Hold Samples	
2305067-018A	B-9-30	05/05/23 12:57	Soil	11/01/23			Hold Samples	
2305067-019A	B-9-35	05/05/23 13:04	Soil	11/01/23			Hold Samples	

Torrent LABORATORY, INC.

Torrent LABORATORY, INC
Milpitas, CA 95035
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FAX: 408.263.8293
www.torrentlab.com

Reset

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 2305067

Company Name: LANGAN ☑ Env. ☐ Non Env.
Address: 515 S. FLOWER ST, SUITE 1060
City: LA State: CA Zip Code: 90071
Telephone: 213 280 9903 Cell:
REPORT TO: N. CUTLER BILL TO:

Project #: 721040501 PO#:
Project Name: VERNON
Comments: HOLD ALL SAMPLES FOR ANALYSIS
SAMPLER: M. CHE
EMAIL: NCUTLER AND MCHE @ LANGAN.COM

TURNAROUND TIME:
☐ 2 - 8 Hours ☐ 2 Work Days ☐ 5 Work Days
☐ Noon - Nxt Day ☐ 3 Work Days ☐ 7 Work Days
☐ 1 Work Day ☐ 4 Work Days ☐ 10 Work Days

SAMPLE TYPE:
☐ Drinking Water ☐ Storm Water ☐ Air ☐ Waste Water ☐ Wipe ☐ Ground Water ☐ Other ☐ Soil ☐ Product / Bulk

REPORT FORMAT:
☐ Level II - Std. ☐ DoD/DoE Level III ☐ DoD/DoE Level III ☐ Excel - EDD ☐ EDF ☐ Client Specific EDD

ANALYSIS REQUESTED

LAB ID	CANISTER I.D.	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	8260B VOC	8270 SVOC SIM	CAM 17 6010 B	REMARKS
-011A	NA	B-8-25	5/5/23 1005	Soil	1	Glass	✓	✓	✓	HOLD
-012A		B-8-30	5/5/23 1012	Soil	1	Glass	✓	✓	✓	
~~-013A~~	13	~~B-8-35~~	5/5/23 1022	Soil	1	Glass	✓	✓	✓	
-014A	14	B-9-5	5/5/23 1230	Soil	1	Glass	✓	✓	✓	
-015A	15	B-9-10	5/5/23 1235	Soil	1	Glass	✓	✓	✓	
-016A	16	B-9-15	5/5/23 1240	Soil	1	Glass	✓	✓	✓	
-017A	17	B-9-20	5/5/23 1245	Soil	1	Glass	✓	✓	✓	
-018A	18	B-9-25	5/5/23 1248	Soil	1	Glass	✓	✓	✓	
-019A	19	B-9-30	5/5/23 1257	Soil	1	Glass	✓	✓	✓	
-020A	20	B-9-35	5/5/23 1304	Soil	1	Glass	✓	✓	✓	

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	Melody Che	MELODY CHE	5/5/23	1630		L.D. Imbal	5-9-23	1006
2	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:

Cooler Temperature 2.0 #3 °C Samples Received on ice? Yes ☒ No ☐ Method of Shipment Fed EX

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 6 of 7

Torrent LABORATORY, INC.

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Reset

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 2305067

Company Name: LANGAN ☑ Env. ☐ Non Env.			Project #: 721040501 PO#:
Address: 515 S FLOWER ST, SUITE 1060			Project Name: VERNON
City: LA	State: CA	Zip Code: 90071	Comments: HOLD ALL SAMPLES FOR ANALYSIS
Telephone: 213 280 9903	Cell: –		SAMPLER: M. CHE
REPORT TO: N. CUTLER	BILL TO:		EMAIL: NCUTLER ; MCHE@LANGAN.COM

TURNAROUND TIME:
☐ 2 - 8 Hours ☐ 2 Work Days ☐ 5 Work Days
☐ Noon - Nxt Day ☐ 3 Work Days ☐ 7 Work Days
☐ 1 Work Day ☐ 4 Work Days ☐ 10 Work Days

SAMPLE TYPE:
☐ Drinking Water ☐ Storm Water ☐ Air ☐ Waste Water ☐ Wipe ☐ Ground Water ☐ Other ☐ Soil ☐ Product / Bulk

REPORT FORMAT:
☐ Level II - Std. ☐ DoD/DoE Level III ☐ DoD/DoE Level III ☐ Excel - EDD ☐ EDF ☐ Client Specific EDD

ANALYSIS REQUESTED

LAB ID	CANISTER I.D.	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	VOC 8260B	SVOC 8270 SIM	CAM 17 6010B	REMARKS
001A	NA	B-3-5	5/5/23 0757	Soil	1	Glass	✓	✓	✓	HOLD
002A		B-3-10	5/5/23 0806	Soil	1	Glass	✓	✓	✓	
003A		B-3-15	5/5/23 0810	Soil	1	Glass	✓	✓	✓	
004A		B-3-20	5/5/23 0817	Soil	1	Glass	✓	✓	✓	
005A		B-3-25	5/5/23 0822	Soil	1	Glass	✓	✓	✓	
006A		B-3-30	5/5/23 0827	Soil	1	Glass	✓	✓	✓	
007A		B-8-5	5/5/23 0940	Soil	1	Glass	✓	✓	✓	
008A		B-8-10	5/5/23 0945	Soil	1	Glass	✓	✓	✓	
009A		B-8-15	5/5/23 0949	Soil	1	Glass	✓	✓	✓	
010A		B-8-20	5/5/23 0959	Soil	1	Glass	✓	✓	✓	

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	Melody Che	MELODY CHE	5/5/23	1630		L.D. Imbat	5-9-23	1006
2	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:

Cooler Temperature 2.0 °C Samples Received on ice? Yes ☒ No ☐ Method of Shipment Fed EX

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 5 of 7

Gmail Torrent Laboratory, Inc. <pm@torrentlaboratory.com>

RE: [External] Re: Sample order for PO: 721040501

1 message

Nick Cutler <ncutler@langan.com> Wed, May 10, 2023 at 8:42 PM
To: "Torrent Laboratory, Inc." <pm@torrentlaboratory.com>, Katherine Thomas <kthomas@langan.com>
Cc: "melanie.moran@torrentlaboratory.com" <melanie.moran@torrentlaboratory.com>, Melody Che <mche@langan.com>

Hi Kathie –

Can you please run the analyses on a 3-day TAT per the table below?

Sample ID	Metals 6010B	Pesticides 8081A	PCBs 8082	ACM PLM
B-1-5	1	1		1
B-2-5	1	1	1	
B-3-5	1	1		
B-4-6	1			
B-5-5	1			
B-6-5	1			
B-7-6	1			
B-8-5	1	1		
B-9-5	1			
B-11-5	1	1	1	
B-12-5	1		1	
B-13-5	1		1	

Cordially,
Nick Cutler

483 Sinclair Frontage Rd., Milpitas, CA 95035 | tel: 408.263.5258 | fax: 408.263.8293 | www.torrentlab.com

Langan
135 Main Street, Suite 1500
San Francisco, California 94105
Tel: 415.955.5200

RE: VERNON

Work Order No.: 2305124

Dear Nick Cutler:

Torrent Laboratory, Inc. received 6 sample(s) on May 13, 2023 for the analyses presented in the following Report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.

Torrent Laboratory, Inc. is certified by the State of California, ELAP #1991. If you have any questions regarding these test results, please feel free to contact the Project Management Team at (408)263-5258; ext 204.



Kathie Evans
Project Manager

May 22, 2023
Date

Torrent LABORATORY, INC.

Date: 5/22/2023

Client: Langan

Project: VERNON

Work Order: 2305124

CASE NARRATIVE

Unless otherwise indicated in the following narrative, no issues encountered with the receiving, preparation, analysis or reporting of the results associated with this work order.

Unless otherwise indicated in the following narrative, no results have been method and/or field blank corrected.

Reported results relate only to the items/samples tested by the laboratory.

This report shall not be reproduced, except in full, without the written approval of Torrent Laboratory, Inc.

Torrent LABORATORY, INC.

Sample Result Summary

Report prepared for: Nick Cutler
Langan

Date Received: 05/13/23
Date Reported: 05/22/23

CS-01 2305124-001

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

CS-02 2305124-002

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

CS-03 2305124-003

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

CS-04 2305124-004

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

CS-05 2305124-005

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

CS-06 2305124-006

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/13/23, 1152 am
Date Reported: 05/22/23

Client Sample ID:	CS-01	**Lab Sample ID:**	2305124-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Concrete
Project Number:	721040501		
Date/Time Sampled:	05/12/23 / 12:15		
SDG:			

Prep Method:	3546_PCB	**Prep Batch Date/Time:**	5/19/23 9:33:00AM
Prep Batch ID:	1151124	**Prep Analyst:**	SSUTRA

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Aroclor1016	SW8082A	1	35.0	100	ND		ug/Kg	05/19/23	11:50	LA	474923
Aroclor1221	SW8082A	1	5.00	100	ND		ug/Kg	05/19/23	11:50	LA	474923
Aroclor1232	SW8082A	1	17.0	100	ND		ug/Kg	05/19/23	11:50	LA	474923
Aroclor1242	SW8082A	1	3.00	100	ND		ug/Kg	05/19/23	11:50	LA	474923
Aroclor1248	SW8082A	1	2.00	100	ND		ug/Kg	05/19/23	11:50	LA	474923
Aroclor1254	SW8082A	1	14.0	100	ND		ug/Kg	05/19/23	11:50	LA	474923
Aroclor1260	SW8082A	1	24.0	100	ND		ug/Kg	05/19/23	11:50	LA	474923
			Acceptance Limits								
TCMX (S)	SW8082A		48 - 125		**57.0**		%	05/19/23	11:50	LA	474923
DCBP (S)	SW8082A		48 - 135		**55.0**		%	05/19/23	11:50	LA	474923

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/13/23, 1152 am
Date Reported: 05/22/23

Client Sample ID:	CS-02	**Lab Sample ID:**	2305124-002A
Project Name/Location:	VERNON	**Sample Matrix:**	Concrete
Project Number:	721040501		
Date/Time Sampled:	05/12/23 / 12:40		
SDG:			

Prep Method:	3546_PCB	**Prep Batch Date/Time:**	5/19/23	9:33:00AM
Prep Batch ID:	1151124	**Prep Analyst:**	SSUTRA	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Aroclor1016	SW8082A	1	35.0	100	ND		ug/Kg	05/19/23	12:06	LA	474923
Aroclor1221	SW8082A	1	5.00	100	ND		ug/Kg	05/19/23	12:06	LA	474923
Aroclor1232	SW8082A	1	17.0	100	ND		ug/Kg	05/19/23	12:06	LA	474923
Aroclor1242	SW8082A	1	3.00	100	ND		ug/Kg	05/19/23	12:06	LA	474923
Aroclor1248	SW8082A	1	2.00	100	ND		ug/Kg	05/19/23	12:06	LA	474923
Aroclor1254	SW8082A	1	14.0	100	ND		ug/Kg	05/19/23	12:06	LA	474923
Aroclor1260	SW8082A	1	24.0	100	ND		ug/Kg	05/19/23	12:06	LA	474923
			Acceptance Limits								
TCMX (S)	SW8082A		48 - 125		**66.0**		%	05/19/23	12:06	LA	474923
DCBP (S)	SW8082A		48 - 135		**55.0**		%	05/19/23	12:06	LA	474923

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/13/23, 1152 am
Date Reported: 05/22/23

Client Sample ID:	CS-03	**Lab Sample ID:**	2305124-003A
Project Name/Location:	VERNON	**Sample Matrix:**	Concrete
Project Number:	721040501		
Date/Time Sampled:	05/12/23 / 13:03		
SDG:			

Prep Method:	3546_PCB	**Prep Batch Date/Time:**	5/19/23 9:33:00AM
Prep Batch ID:	1151124	**Prep Analyst:**	SSUTRA

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Aroclor1016	SW8082A	1	35.0	100	ND		ug/Kg	05/19/23	12:23	La	474923
Aroclor1221	SW8082A	1	5.00	100	ND		ug/Kg	05/19/23	12:23	La	474923
Aroclor1232	SW8082A	1	17.0	100	ND		ug/Kg	05/19/23	12:23	La	474923
Aroclor1242	SW8082A	1	3.00	100	ND		ug/Kg	05/19/23	12:23	La	474923
Aroclor1248	SW8082A	1	2.00	100	ND		ug/Kg	05/19/23	12:23	La	474923
Aroclor1254	SW8082A	1	14.0	100	ND		ug/Kg	05/19/23	12:23	La	474923
Aroclor1260	SW8082A	1	24.0	100	ND		ug/Kg	05/19/23	12:23	La	474923
			Acceptance Limits								
TCMX (S)	SW8082A		48 - 125		**70.0**		%	05/19/23	12:23	La	474923
DCBP (S)	SW8082A		48 - 135		**64.0**		%	05/19/23	12:23	La	474923

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/13/23, 1152 am
Date Reported: 05/22/23

Client Sample ID:	CS-04	**Lab Sample ID:**	2305124-004A
Project Name/Location:	VERNON	**Sample Matrix:**	Concrete
Project Number:	721040501		
Date/Time Sampled:	05/12/23 / 11:24		
SDG:			

Prep Method:	3546_PCB	**Prep Batch Date/Time:**	5/19/23 9:33:00AM
Prep Batch ID:	1151124	**Prep Analyst:**	SSUTRA

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Aroclor1016	SW8082A	1	35.0	100	ND		ug/Kg	05/19/23	12:39	LA	474923
Aroclor1221	SW8082A	1	5.00	100	ND		ug/Kg	05/19/23	12:39	LA	474923
Aroclor1232	SW8082A	1	17.0	100	ND		ug/Kg	05/19/23	12:39	LA	474923
Aroclor1242	SW8082A	1	3.00	100	ND		ug/Kg	05/19/23	12:39	LA	474923
Aroclor1248	SW8082A	1	2.00	100	ND		ug/Kg	05/19/23	12:39	LA	474923
Aroclor1254	SW8082A	1	14.0	100	ND		ug/Kg	05/19/23	12:39	LA	474923
Aroclor1260	SW8082A	1	24.0	100	ND		ug/Kg	05/19/23	12:39	LA	474923
			Acceptance Limits								
TCMX (S)	SW8082A		48 - 125		**65.0**		%	05/19/23	12:39	LA	474923
DCBP (S)	SW8082A		48 - 135		**57.0**		%	05/19/23	12:39	LA	474923

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/13/23, 1152 am
Date Reported: 05/22/23

Client Sample ID:	CS-05	**Lab Sample ID:**	2305124-005A
Project Name/Location:	VERNON	**Sample Matrix:**	Concrete
Project Number:	721040501		
Date/Time Sampled:	05/12/23 / 10:56		
SDG:			

Prep Method:	3546_PCB	**Prep Batch Date/Time:**	5/19/23 9:33:00AM
Prep Batch ID:	1151124	**Prep Analyst:**	SSUTRA

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Aroclor1016	SW8082A	1	35.0	100	ND		ug/Kg	05/19/23	13:32	LA	474923
Aroclor1221	SW8082A	1	5.00	100	ND		ug/Kg	05/19/23	13:32	LA	474923
Aroclor1232	SW8082A	1	17.0	100	ND		ug/Kg	05/19/23	13:32	LA	474923
Aroclor1242	SW8082A	1	3.00	100	ND		ug/Kg	05/19/23	13:32	LA	474923
Aroclor1248	SW8082A	1	2.00	100	ND		ug/Kg	05/19/23	13:32	LA	474923
Aroclor1254	SW8082A	1	14.0	100	ND		ug/Kg	05/19/23	13:32	LA	474923
Aroclor1260	SW8082A	1	24.0	100	ND		ug/Kg	05/19/23	13:32	LA	474923
			Acceptance Limits								
TCMX (S)	SW8082A		48 - 125		**73.0**		%	05/19/23	13:32	LA	474923
DCBP (S)	SW8082A		48 - 135		**60.0**		%	05/19/23	13:32	LA	474923

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/13/23, 1152 am
Date Reported: 05/22/23

Client Sample ID:	CS-06	**Lab Sample ID:**	2305124-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Concrete
Project Number:	721040501		
Date/Time Sampled:	05/12/23 / 13:30		
SDG:			

Prep Method:	3546_PCB	**Prep Batch Date/Time:**	5/19/23 9:33:00AM
Prep Batch ID:	1151124	**Prep Analyst:**	SSUTRA

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Aroclor1016	SW8082A	1	35.0	100	ND		ug/Kg	05/19/23	13:49	LA	474923
Aroclor1221	SW8082A	1	5.00	100	ND		ug/Kg	05/19/23	13:49	LA	474923
Aroclor1232	SW8082A	1	17.0	100	ND		ug/Kg	05/19/23	13:49	LA	474923
Aroclor1242	SW8082A	1	3.00	100	ND		ug/Kg	05/19/23	13:49	LA	474923
Aroclor1248	SW8082A	1	2.00	100	ND		ug/Kg	05/19/23	13:49	LA	474923
Aroclor1254	SW8082A	1	14.0	100	ND		ug/Kg	05/19/23	13:49	LA	474923
Aroclor1260	SW8082A	1	24.0	100	ND		ug/Kg	05/19/23	13:49	LA	474923
			Acceptance Limits								
TCMX (S)	SW8082A		48 - 125		**55.0**		%	05/19/23	13:49	LA	474923
DCBP (S)	SW8082A		48 - 135		**49.0**		%	05/19/23	13:49	LA	474923

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305124	**Prep Method:**	3546_PCB	**Prep Date:**	05/19/23	**Prep Batch:**	1151124
Matrix:	Soil	**Analytical Method:**	SW8082A	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474923
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Aroclor1016	35.0	100	ND	
Aroclor1221	5.00	100	ND	
Aroclor1232	17.0	100	ND	
Aroclor1242	3.00	100	ND	
Aroclor1248	2.00	100	ND	
Aroclor1254	14.0	100	ND	
Aroclor1260	24.0	100	ND	
TCMX (S)			102	
DCBP (S)			83.0	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305124	**Prep Method:**	3546_PCB	**Prep Date:**	05/19/23	**Prep Batch:**	1151124
Matrix:	Soil	**Analytical Method:**	SW8082A	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474923
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Aroclor1016	53	100	ND	600	85.3	96.8	12.6	25 - 145	30	
Aroclor1260	36	100	ND	600	78.3	93.5	17.7	30 - 145	30	
TCMX (S)				0.10	82.0	102		48 - 125		
DCBP (S)				0.10	80.0	88.0		48 - 135		

Torrent LABORATORY, INC.

MS/MSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305124	**Prep Method:**	3546_PCB	**Prep Date:**	05/19/23	**Prep Batch:**	1151124
Matrix:	**Soil**	**Analytical Method:**	SW8082A	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474923
Spiked Sample:	2305124-002A						
Units:	ug/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Aroclor1016	53.0	100	ND	600	75.8	61.3	21.1	25 - 145	30	
Aroclor1260	36.0	100	ND	600	64.3	54.2	17.2	30 - 145	30	
TCMX (S)				0.10	71.0	59.0		48 - 125		
DCBP (S)				0.10	65.0	55.0		48 - 135		

Laboratory Qualifiers and Definitions

DEFINITIONS:

Accuracy/Bias (% Recovery) - The closeness of agreement between an observed value and an accepted reference value.
Blank (Method/Preparation Blank) -MB/PB - An analyte-free matrix to which all reagents are added in the same volumes/proportions as used in sample processing. The method blank is used to document contamination resulting from the analytical process.
Duplicate - a field sample and/or laboratory QC sample prepared in duplicate following all of the same processes and procedures used on the original sample (sample duplicate, LCSD, MSD)
Laboratory Control Sample (LCS ad LCSD) - A known matrix spiked with compounds representative of the target analyte(s). This is used to document laboratory performance.
Matrix - the component or substrate that contains the analyte of interest (e.g., - groundwater, sediment, soil, waste water, etc)
Matrix Spike (MS/MSD) - Client sample spiked with identical concentrations of target analyte (s). The spiking occurs prior to the sample preparation and analysis. They are used to document the precision and bias of a method in a given sample matrix.
Method Detection Limit (MDL) - the minimum concentration of a substance that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero
Practical Quantitation Limit/Reporting Limit/Limit of Quantitation (PQL/RL/LOQ) - a laboratory determined value at 2 to 5 times above the MDL that can be reproduced in a manner that results in a 99% confidence level that the result is both accurate and precise. PQLs/RLs/LODs reflect all preparation factors and/or dilution factors that have been applied to the sample during the preparation and/or analytical processes.
Precision (%RPD) - The agreement among a set of replicate/duplicate measurements without regard to known value of the replicates
Surrogate (S) or (Surr) - An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. Surrogates are used in most organic analysis to demonstrate matrix compatibility with the chosen method of analysis
Tentatively Identified Compound (TIC) - A compound not contained within the analytical calibration standards but present in the GCMS library of defined compounds. When the library is searched for an unknown compound, it can frequently give a tentative identification to the compound based on retention time and primary and secondary ion match. TICs are reported as estimates and are candidates for further investigation.
Units: the unit of measure used to express the reported result - **mg/L** and ***mg/Kg*** (equivalent to PPM - parts per million in **liquid** and ***solid***), **ug/L** and ***ug/Kg*** (equivalent to PPB - parts per billion in **liquid** and ***solid***), **ug/m3**, ***mg/m3***, **ppbv** and ***ppmv*** (all units of measure for reporting concentrations in air), **%** (equivalent to 10000 ppm or 1,000,000 ppb), **ug/Wipe** (concentration found on the surface of a single Wipe usually taken over a 100cm2 surface)

LABORATORY QUALIFIERS:

B - Indicates when the analyte is found in the associated method or preparation blank
D - Surrogate is not recoverable due to the necessary dilution of the sample
E - Indicates the reportable value is outside of the calibration range of the instrument but within the linear range of the instrument (unless otherwise noted) Values reported with an E qualifier should be considered as estimated.
H- Indicates that the recommended holding time for the analyte or compound has been exceeded
J- Indicates a value between the method MDL and PQL and that the reported concentration should be considered as estimated rather the quantitative
NA - Not Analyzed
N/A - Not Applicable
ND - Not Detected at a concentration greater than the PQL/RL or, if reported to the MDL, at greater than the MDL.
NR - Not recoverable - a matrix spike concentration is not recoverable due to a concentration within the original sample that is greater than four times the spike concentration added
R- The % RPD between a duplicate set of samples is outside of the absolute values established by laboratory control charts
S- Spike recovery is outside of established method and/or laboratory control limits. Further explanation of the use of this qualifier should be included within a case narrative
X -Used to indicate that a value based on pattern identification is within the pattern range but not typical of the pattern found in standards. Further explanation may or may not be provided within the sample footnote and/or the case narrative.

Torrent LABORATORY, INC.

Sample Receipt Checklist

Client Name: Langan

Project Name: VERNON

Work Order No.: 2305124

Date and Time Received: 5/13/2023 11:52:00AM

Received By: Linda

Physically Logged By: Tammy

Checklist Completed By: Nutan Kabir

Carrier Name: FedEx

Chain of Custody (COC) Information

Chain of custody present?	Yes
Chain of custody signed when relinquished and received?	Yes
Chain of custody agrees with sample labels?	Yes
Custody seals intact on sample bottles?	Not Present

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Not Present
Shipping Container/Cooler In Good Condition?	Yes
Samples in proper container/bottle?	Yes
Samples containers intact?	Yes
Sufficient sample volume for indicated test?	Yes

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes
Container/Temp Blank temperature in compliance?	Temperature: 1.0 °C
Water-VOA vials have zero headspace?	No VOA vials submitted
Water-pH acceptable upon receipt?	N/A

pH Checked by: na

pH Adjusted by: na

Comments:

Torrent LABORATORY, INC.

Login Summary Report

Client ID: TL5493 Langan
Project Name: VERNON
Project # : 721040501
Report Due Date: 5/22/2023

QC Level: II
TAT Requested: 5+ day:5
Date Received: 5/13/2023
Time Received: 11:52 am

Comments:

Work Order # : ***2305124***

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
2305124-001A	CS-01	05/12/23 12:15	Soil	11/08/23			PCBs_S_8082A	
2305124-002A	CS-02	05/12/23 12:40	Soil	11/08/23			PCBs_S_8082A	
2305124-003A	CS-03	05/12/23 13:03	Soil	11/08/23			PCBs_S_8082A	
2305124-004A	CS-04	05/12/23 11:24	Soil	11/08/23			PCBs_S_8082A	
2305124-005A	CS-05	05/12/23 10:56	Soil	11/08/23			PCBs_S_8082A	
2305124-006A	CS-06	05/12/23 13:30	Soil	11/08/23			PCBs_S_8082A	

Torrent LABORATORY, INC.

Pace ANALYTICAL SERVICES

4100 Atlas Ct. – Bakersfield, CA 93308 – 661.327.4911 – Fax: 661.327.1918 – www.pacelabs.com

Chain of Custody Form

2305124 Page 1 of 1

Report To:		Project #:	72140501
Client:	LANGAN	Project Name:	VERNON
Attn:	NICK CUTLER	BID#	
Street Address:	515 S. FLOWER ST	Sampler(s) Name Printed:	MELODY CHE
City, State, Zip:	LA, CA, 90071		MELISSIA CHAMBERS
Phone:	213 280 9[illegible] Fax:		
Email:	NCUTLER AND MCHE @ LANGAN.com		
Work Order #:			

Analysis Requested: PCB 8082

Comments:

Sample #	Description	Date Sampled	Time Sampled	Sample Matrix: Soil	Sludge	Drinking Water	Ground Water	Waste Water	Other	Notes
001A	CS-01	5/12/23	1215	✓					Concrete	
002A	CS-02	5/12/23	1240	✓					Concrete	
003A	CS-03	5/12/23	1303						Concrete	
004A	CS-04	5/12/23	1124						Concrete	
005A	CS-05	5/12/23	1056						Concrete	
006A	CS-06	5/12/23	1330						Concrete	

Result Request **Surcharge: ☐ STD (10 Day) ☑ 5 Day** ☐ 4 Day** ☐ 3 Day** ☐ 2 Day** ☐ 1 Day** Rush requests must be approved

Temp @ -1.3

Billing ☑ Same as above

Client: _____

Address: _____

City: _____ State ____ Zip ____

Attn: _____

P.O. #: _____

System # (Needed for CLIP)

GIS/Key ☐ Well Star ☐

EDF Required Geotracker ☐ Yes ☐ No Global ID

	Date	Time		Date	Time
1. Relinquished By: Melody Che	5/11/23	1400	1. Received By: LINDA ATIENZA	5/13/23	11:52am
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Pace Analytical Bakersfield does not accept samples containing radioactive material above background levels. Samples containing radioactive material must be disclosed prior to receipt. Any samples suspected of containing radioactive material above background levels will not be accepted and will be returned to client.

REV 12/2021

SOIL MANAGEMENT PLAN

GIC Vernon
3049, 3094, 3095, 3163, and 3200 East Vernon Avenue
Vernon, California

Prepared For:

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3333 Michelson Drive, Suite 150
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Prepared By:

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13 October 2023
Project No. 721040501

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Appendix C SCAQMD Rules 403, 1466, and 1166

Appendix D ASTM 6009-19: Standard Guide for Sampling Waste Piles

Appendix E Department of Toxic Substances Control Information Advisory Clean Imported Fill Material

SOIL MANAGEMENT PLAN
GIC Vernon
3049, 3094, 3095, 3163, and 3200 East Vernon Avenue
Vernon, California, 90058

1.0 INTRODUCTION

On behalf of Goodman (the Owner), Langan Engineering and Environmental Services, Inc. (Langan) has prepared this Soil Management Plan (SMP) for the approximately 29.2-acre property located at 3049, 3094, 3095, 3163, and 3200 East Vernon Avenue in the City of Vernon, California (the subject property). A subject property location map is provided as **Figure 1**. The subject property is identified as Los Angeles County Assessor Parcel Numbers (APNs):

- 6303-005-034
- 6303-005-035
- 6303-005-036
- 6303-013-052
- 6303-013-053
- 6303-013-054
- 6303-054-055

The historic use of the subject property described in Section 2.1.

The purpose of the SMP is to provide guidance on the handling of excavated soils encountered during grading and demolition during the subject property redevelopment activities (discussed further in Section 2.3).

Langan serves as the Environmental Consultant for the Owner, and it is understood that the Owner will provide the SMP to the pertinent contractors, as required.

2.0 SUBJECT PROPERTY DESCRIPTION

2.1 Subject Property Description and Location

The subject property consists of approximately 29.2-acres in the City of Vernon in Los Angeles County, California and is divided into a northern portion and southern portion of the subject property by East Vernon Avenue. The main entrance is located on South Soto Street, along the western border of the subject property, and the truck entrance is located on East Vernon Avenue. The current buildings on the subject property total approximately 688,038-square-feet and the

exterior areas are paved with asphalt and concrete. A Subject Property Plan is included as **Figure 2**.

2.2 Physical Setting

2.2.1 Geology

Subsurface soils at the subject property, observed during the May 2023 Phase II Environmental Site Assessment (ESA) performed by Langan, consisted of fill material between 1.5 to 6 feet in thickness and underlying native soils to the boring terminus. The fill soils encountered consist of loose to medium dense sand, silty sand, and sand with silt.

The underlying native soils consist of alluvial deposits composed of loose sand and medium stiff silt to depths of approximately five to 12.5 feet below ground surface (bgs). The upper alluvial sand and silt were typically underlain by medium dense to dense sand and silty sand to depths of approximately 24 to 35 feet bgs within the north portion of the subject property and to depths of approximately 33 to 40 feet within the south portion of the subject property.

A fine-grained layer consisting primarily of stiff to very stiff clayey and silty soils was encountered beneath the medium dense to very dense sand and silty sand to depths of approximately 38 to 46 feet bgs within the north portion of the subject property and 45 to 52 feet bgs within the south portion of the subject property.

2.2.2 Hydrogeology

The nearest surface water body is the Los Angeles River (LA River), which is located along the northeastern property line. In the vicinity of the subject property, LA River is channelized by concrete with a downstream flow to the south, towards Long Beach.

During environmental and geotechnical subsurface investigations completed in 2023 by Langan, groundwater was not encountered to the maximum drilled depth of approximately 75 feet bgs. According to the *Seismic Hazard Evaluation of the Los Angeles and South Gate 7.5-Minute Quadrangles, Los Angeles County, California, Seismic Hazard Zone Reports 029 & 34*, the historical high groundwater level at the subject property is greater than approximately 60 feet bgs.

2.3 Proposed Development

The Environmental Consultant understands that the Owner plans to redevelop the subject property. Redevelopment will include demolition, grading, and construction. The use of the

subject property will remain industrial.

3.0 SUMMARY OF PREVIOUS INVESTIGATIONS

3.1 Subject Property Background

As indicated in the May 2023 Langan Phase I ESA, the subject property was first developed for industrial use in approximately 1920 and has been iteratively developed since then. The industrial use included meat processing (1920 to 2023), fiberboard manufacturing (1928 to 1956), and auto repair and servicing (1920 to 2023). Since 1920, the meat packing facility expanded its operations to the entirety of the subject property north of East Vernon Avenue. South of East Vernon Avenue, the subject property was occupied with a gas station (1948 to 1952) and a paving company (1933 to 1967).

Three recognized environmental concerns (RECs) were identified for the subject property:

- REC-1 Historical Industrial Activity: There has been approximately 100-years of industrial activity on the subject property with associated infrastructure including rail spurs, electrical substations, vehicle maintenance and repair areas, hydraulic lifts, and hazardous materials storage. Potential constituents of concern associated with this REC include petroleum constituents, chlorinated solvents, polychlorinated biphenyls (PCBs), creosote, metals, and asbestos in the soil.

- REC-2 Petroleum Underground Storage Tanks (USTs): The EDR database report includes listings for 24 USTs of single-wall steel construction potentially installed on the subject property between 1929 and 1981. Langan reviewed supporting information for six USTs, but the statuses of the other 18 are unknown. The unknown statuses of the USTs, and age of the USTs indicated by available records indicate a potential for soil and soil vapor impacts at the subject property.

- REC-3 Industrial Activity in the Surrounding Area: There has been approximately 100 years of industrial activity on the adjacent properties and in the surrounding area of the subject property. Operations included a battery smelting and recycling facility, oil and gas production, meat packing and auto repair facilities. The current and historical operations in the vicinity of the subject property and the potential off-site sources of hazardous substances may have impacted the media on the subject property.

3.2 Previous Environmental Investigation Findings

The work scope and findings of Langan's May 30, 2023 *Phase II Environmental Site Investigation, 3049, 3094, 3095, 3163, and 3200 East Vernon Avenue, Vernon, California*, are summarized below, with a specific focus on findings relevant to subject property soils and worker health and safety.

3.2.1 Langan - Phase II Environmental Site Assessment Report

Langan conducted a subsurface investigation at the subject property in between May 3 through 12, 2023, to attempt to delineate potential impacts to soil and soil vapor identified in the May 2023 Phase I ESA. Activities included the installation and sampling of 13 soil boring locations and 20 temporary soil vapor points. Investigation locations are shown on **Figure 3**.

Select soil samples collected from borings were analyzed by the following laboratory methods. See **Appendix A** for analytical results summary tables and **Appendix B** for laboratory analytical reports.

- Volatile organic compounds (VOCs) by Environmental Protection Agency (EPA) Method 8260B
- Semi-volatile organic compounds (SVOCs) by EPA Method 8270 SIM
- California Administrative Manual (CAM) 17 Metals by EPA Method 6010B
- Pesticides by EPA Method 8081A
- Polychlorinated biphenyls (PCBs) by EPA Method 8082
- Asbestos by Polarized Light Microscopy (PLM)

Additionally, Hanby® total petroleum hydrocarbon (TPH) test kits were used in the field during drilling to evaluate the presence of TPH at five-foot intervals in each boring. During drilling, soils were screened for VOCs using a photoionization detector (PID) with readings measured in parts per million (ppm).

Soil vapor samples were collected from soil borings from temporary soil vapor probes at approximately 10 feet bgs and approximately 30 to 35 feet bgs in each boring. Soil vapor samples were analyzed by the following methods. See **Appendix A** for analytical results summary tables and **Appendix B** for laboratory analytical reports.

- VOCs by EPA Method TO-15;
- Fixed Gas (Methane, Oxygen, Carbon Dioxide) by ASTM Method D-1946; and
- Helium by ASTM Method D-1946.

3.3 Evaluation of Data

3.3.1 Evaluation of Soil Data

Based on the data collected from Langan's previous investigation, soil impacts are summarized in the section below and shown on **Figure 4**.

The results of the soil analyses were compared to San Francisco Bay Regional Water Quality

Control Board (SFB RWQCB)[1] Commercial/Industrial and Construction Worker Shallow Soil Exposure Environmental Screening Levels (ESLs), 2019 Rev. 2. Metal exceedances were detected for arsenic, lead, and nickel. Concentrations of arsenic above the Southern California background levels (12 milligrams per kilogram [mg/kg]) was detected in one sample (B-11-10) at a concentration of 34.4 mg/kg. Lead was detected above the commercial/industrial and construction worker ESL in one sample (B-11-10) at a concentration of 1,100 mg/kg. Nickel was detected above the construction worker ESL with a concentration of 136 mg/kg in one sample (B-11-10).

It should be recognized that unanticipated conditions in terms of impacted soils and vapors can be encountered during the earthwork and project development activities. The absence of impacts in areas or for chemicals not listed or described in the Phase II may not preclude the presence of such materials on the project.

Summaries of metals detected in the following locations of concern are identified in Tables 1 to 3 below:

Table 1: Sumps, Piping, Industrial Wastewater Infrastructure

Boring ID	Location of concern	Detected constituents	Exceedances
B-2	Proximity to the central industrial wastewater (IWW) sump and abandoned-in-place rail spur.	Arsenic, barium, chromium, cobalt, copper, lead, nickel, vanadium, and zinc. Field screening for VOCs: 40 ppm	Arsenic – commercial/industrial and construction worker ESL
B-3	Proximity to IWW piping and historical auto repair shops.	Arsenic, barium, hexavalent chromium, chromium, cobalt, copper, lead, nickel, vanadium, and zinc. Hanby® field screening for TPH: 10 ppm	Arsenic – commercial/industrial and construction worker ESL
B-11	Proximity to abandoned-in-place rail spur and IWW sumps.	Arsenic, barium, cadmium, hexavalent chromium, chromium, cobalt, copper, lead, nickel, vanadium, and zinc. Hanby® field screening for TPH: between 10 ppm and 700 ppm	None
B-12	Interior point in main building accessible by drill rig. Proximity to abandoned-in-place UST and catchment basins.	Barium, chromium, cobalt, copper, nickel, vanadium, and zinc.	None

Table 2: Petroleum Related Operations (historical service stations and off-site oil and gas operations)

Boring ID	Location of concern	Detected constituents	Exceedances
B-1	Proximity to former auto repair shop and adjacent to auto maintenance facility.	Arsenic, barium, chromium, cobalt, copper, lead, nickel, vanadium, and zinc.	Arsenic – commercial/industrial and construction worker ESL
B-3	Proximity to IWW piping and historical auto repair shops.	Arsenic, barium, hexavalent chromium, chromium, cobalt, copper, lead, nickel, vanadium, and zinc. Hanby® field screening for TPH: 10 ppm	Arsenic – commercial/industrial and construction worker ESL

[1] SFB RWQCB set standards that other regions, including the Los Angeles Region, follow.

Boring ID	Location of concern	Detected constituents	Exceedances
B-4	Proximity to eastern property boundary, off-property leaking UST case, and historical oil and gas operations to the south.	Arsenic, barium, chromium, cobalt, copper, nickel, vanadium, and zinc. Hanby® field screening for TPH: between 25 ppm and 75 ppm	Arsenic – commercial/industrial and construction worker ESL
B-5	Proximity to historical gas station operating in the mid-20th century.	Arsenic, barium, chromium, cobalt, copper, lead, nickel, vanadium, and zinc. Hanby® field screening for TPH: 350 ppm	Arsenic – commercial/industrial and construction worker ESL
B-6	Proximity to historical auto maintenance area and railroad in operation since the early 20th century.	Arsenic, barium, hexavalent chromium, chromium, cobalt, copper, lead, nickel, vanadium, and zinc. Hanby® field screening for TPH: 50 ppm	Arsenic – commercial/industrial and construction worker ESL
B-7	Proximity to historical auto maintenance area and former fueling station.	Arsenic, barium, chromium, cobalt, copper, lead, nickel, vanadium, and zinc. Hanby® field screening for TPH: between 75 ppm and >1,000 ppm.	Arsenic – commercial/industrial and construction worker ESL
B-8	Proximity to historical auto repair shops.	Arsenic, barium, chromium, cobalt, copper, nickel, vanadium, and zinc.	Arsenic – commercial/industrial and construction worker ESL
B-9	Proximity to historical gas station and rail spur in the southern portion.	Arsenic, barium, chromium, cobalt, copper, lead, nickel, vanadium, and zinc. Hanby® field screening for TPH: 700 ppm	Arsenic – commercial/industrial and construction worker ESL
B-10	Proximity to historical paving company.	Arsenic, barium, chromium, cobalt, copper, nickel, vanadium, and zinc.	Arsenic – commercial/industrial and construction worker ESL
B-12	Interior point in main building accessible by drill rig. Proximity to abandoned-in-place UST and catchment basins.	Barium, chromium, cobalt, copper, nickel, vanadium, and zinc.	None
B-13	Proximity to former auto maintenance area, historical auto repair areas, former UST, and catchment basins.	Barium, chromium, cobalt, copper, nickel, vanadium, and zinc.	None

Table 3: Abandoned rail spurs and active railroads – Metals

Boring ID	Location of concern	Detected constituents	Exceedances
B-2	Proximity to the central industrial wastewater (IWW) sump and abandoned-in-place rail spur.	Arsenic, barium, chromium, cobalt, copper, lead, nickel, vanadium, and zinc. Hanby® field screening for VOCs: 40 ppm	Arsenic – commercial/industrial and construction worker ESL
B-6	Proximity to historical auto maintenance area and railroad in operation since the early 20th century.	Arsenic, barium, hexavalent chromium, chromium, cobalt, copper, lead, nickel, vanadium, and zinc. Hanby® field screening for TPH: 50 ppm	Arsenic – commercial/industrial and construction worker ESL
B-9	Proximity to historical gas station and rail spur in the southern portion.	Arsenic, barium, chromium, cobalt, copper, lead, nickel, vanadium, and zinc. Hanby® field screening for TPH: 700 ppm	Arsenic – commercial/industrial and construction worker ESL
B-11	Proximity to abandoned-in-place rail spur and IWW sumps.	Arsenic, barium, cadmium, hexavalent chromium, chromium, cobalt, copper, lead, nickel, vanadium, and zinc. Hanby® field screening for TPH: between 10 ppm and 700 ppm	Arsenic – California background; commercial/industrial and construction worker ESL Lead – commercial/industrial and construction worker ESL Nickel – construction worker ESL

Metals were detected in all soil sample analyses. In addition to arsenic, lead, and nickel, detected metals included antimony, barium, cadmium, chromium, hexavalent chromium, cobalt, copper, mercury, silver, vanadium, and zinc. Other than the exceedances of ESLs described for lead, arsenic, and nickel, metals were not detected above respective commercial/industrial or construction work ESLs.

Given the historical use of the subject property, potential unknown impacted areas in soil may be encountered during future grading and other development activities.

3.3.2 Evaluation of Soil Vapor Data

Based on the data collected to date, the current understanding of the extent of shallow soil vapor impacts within the anticipated depths of excavation during redevelopment (approximately zero to 30 feet bgs) are summarized in the section below and shown on **Figure 5**.

Results of the soil vapor analyses were compared to the SFB RWQCB Commercial/Industrial Subslab/Soil Gas Vapor Intrusion ESLs, 2019 Rev. 2. Chloroform was detected in eight of the soil borings above the ESL (18 micrograms per cubic meter [ug/m^3]) ranging from 25 ug/m^3 (B4-SG-30) to 390 ug/m^3 (B12-SG-10). Tetrachloroethylene (PCE) was detected above the ESL (67 ug/m^3) in six soil vapor samples ranging from 110 ug/m^3 (B3-SG-30) to 590 ug/m^3 (B2-SG-10). VOCs were detected in all soil vapor samples below respective commercial/industrial ESLs, with the exception of chloroform and PCE, as described above.

Summaries of VOCs detected in the following locations of concern are identified in Tables 4 through 6 below:

Table 4: Sumps, Piping, Industrial Wastewater Infrastructure – VOCs

Boring ID	Location of concern	Detected constituents	Exceedances
B-2	Proximity to the central industrial wastewater (IWW) sump and abandoned-in-place rail spur.	1,1,2-Trichloro-1,2,2-Trifluoroethane, acetone, benzene, chloroform, ethyl acetate isopropanol, M,P-xylene, methyl ethyl ketone (2-Butanone), methylene chloride, n-hexane, o-xylene, PCE, TCE, toluene, and trichlorofluoromethane. Field screening for VOCs: 40 ppm	Chloroform – commercial/industrial ESL PCE – commercial/industrial ESL
B-3	Proximity to IWW piping and historical auto repair shops.	1,1,2-Trichloro-1,2,2-Trifluoroethane, 2-haxanone, acetone, carbon tetrachloride, chloroform, ethyl acetate, isopropanol, methyl ethyl ketone (2-Butanone), methyl isobutyl ketone (4-Methyl-2-Pentanone), methylene chloride, n-hexane, o-xylene, tert-butyl alcohol, PCE, tetrahydrofuran, TCE, toluene, and trichlorofluoromethane. Hanby® field screening for TPH: 10 ppm	Chloroform – commercial/industrial ESL PCE – commercial/industrial ESL

Boring ID	Location of concern	Detected constituents	Exceedances
B-11	Proximity to abandoned-in-place rail spur and IWW sumps.	Acetone, carbon tetrachloride, chloroform, n-hexane, tert-butyl alcohol, toluene, and trichlorofluoromethane. Hanby® field screening for TPH: between 10 ppm and 700 ppm	Chloroform – commercial/industrial ESL
B-12	Interior point in main building accessible by drill rig. Proximity to abandoned-in-place UST and catchment basins.	1,1-Dichloroethene, acetone, chloroform, isopropanol, methyl ethyl ketone (2-Butanone), methyl isobutyl ketone (4-Methyl-2-Pentanone), PCE, toluene, and trichlorofluoromethane.	Chloroform – commercial/industrial ESL

Table 5: Petroleum Related Operations (historical service stations and off-site oil and gas operations) –

Boring ID	Location of concern	Detected constituents	Exceedances
B-1	Proximity to former auto repair shop and adjacent to auto maintenance facility.	Acetone, carbon disulfide, ethyl acetate, M,P-xylene, methyl ethyl ketone (2-Butanone), methylene chloride, tert-butyl alcohol, PCE, toluene, and trichlorofluoromethane.	None
B-3	Proximity to IWW piping and historical auto repair shops.	1,1,2-Trichloro-1,2,2-Trifluoroethane, 2-haxanone, acetone, carbon tetrachloride, chloroform, ethyl acetate, isopropanol, methyl ethyl ketone (2-Butanone), methyl isobutyl ketone (4-Methyl-2-Pentanone), methylene chloride, n-hexane, o-xylene, tert-butyl alcohol, PCE, tetrahydrofuran, TCE, toluene, and trichlorofluoromethane. Hanby® field screening for TPH: 10 ppm	Chloroform – commercial/industrial ESL PCE – commercial/industrial ESL
B-4	Proximity to eastern property boundary, off-property leaking UST case, and historical oil and gas operations to the south.	1,1-Difluoroethane, acetone, chloroform, ethyl acetate, isopropanol, methyl ethyl ketone (2-Butanone), methyl isobutyl ketone (4-Methyl-2-Pentanone), methylene chloride, n-hexane, tert-butyl alcohol, PCE, toluene, and trichlorofluoromethane. Hanby® field screening for TPH: between 25 ppm and 75 ppm	Chloroform – commercial/industrial ESL
B-5	Proximity to historical gas station operating in the mid-20th century.	Acetone, chloroform, ethyl acetate, isopropanol, methyl ethyl ketone (2-Butanone), tert-butyl alcohol, PCE, toluene, and trichlorofluoromethane. Hanby® field screening for TPH: 350 ppm	Chloroform – commercial/industrial ESL PCE – commercial/industrial ESL
B-6	Proximity to historical auto maintenance area and railroad in operation since the early 20th century.	2-Hexanone (MBK), acetone, chloroform, ethyl acetate, methyl ethyl ketone (2-Butanone), tert-butyl alcohol, PCE, toluene, and trichlorofluoromethane. Hanby® field screening for TPH: 50 ppm	None
B-7	Proximity to historical auto maintenance area and former fueling station.	2-Hexanone (MBK), acetone, chloroform, ethyl acetate, isopropanol, methyl ethyl ketone (2-Butanone), tert-butyl alcohol, PCE, toluene, and trichlorofluoromethane. Hanby® field screening for TPH: between 75 ppm and >1,000 ppm	Chloroform – commercial/industrial ESL PCE – commercial/industrial ESL

Boring ID	Location of concern	Detected constituents	Exceedances
B-8	Proximity to historical auto repair shops.	Acetone, chloroform, ethyl acetate, isopropanol, methyl ethyl ketone (2-Butanone), tert-butyl alcohol, PCE, toluene, and trichlorofluoromethane.	Chloroform – commercial/industrial ESL
B-12	Interior point in main building accessible by drill rig. Proximity to abandoned-in-place UST and catchment basins.	1,1-Dichloroethene, acetone, chloroform, isopropanol, methyl ethyl ketone (2-Butanone), methyl isobutyl ketone (4-Methyl-2-Pentanone), PCE, toluene, and trichlorofluoromethane.	Chloroform – commercial/industrial ESL
B-13	Proximity to former auto maintenance area, historical auto repair areas, former UST, and catchment basins.	Acetone, carbon tetrachloride, chloroform, dichlorodifluoromethane, ethyl acetate, isopropanol, methyl ethyl ketone (2-Butanone), tert-butyl alcohol, PCE, toluene, and trichlorofluoromethane.	Chloroform – commercial/industrial ESL

Table 6: Abandoned rail spurs and active railroads – VOCs

Boring ID	Location of concern	Detected constituents	Exceedances
B-2	Proximity to the central industrial wastewater (IWW) sump and abandoned-in-place rail spur.	1,1,2-Trichloro-1,2,2-Trifluoroethane, acetone, benzene, chloroform, ethyl acetate isopropanol, M,P-xylene, methyl ethyl ketone (2-Butanone), methylene chloride, n-hexane, o-xylene, PCE, TCE, toluene, and trichlorofluoromethane.	Chloroform – commercial/industrial ESL PCE – commercial/industrial ESL
B-6	Proximity to historical auto maintenance area and railroad in operation since the early 20th century.	2-Hexanone (MBK), acetone, chloroform, ethyl acetate, methyl ethyl ketone (2-Butanone), tert-butyl alcohol, PCE, toluene, and trichlorofluoromethane. Hanby® field screening for TPH: 50 ppm	None
B-11	Proximity to abandoned-in-place rail spur and IWW sumps.	Acetone, carbon tetrachloride, chloroform, n-hexane, tert-butyl alcohol, toluene, and trichlorofluoromethane. Hanby® field screening for TPH: between 10 ppm and 700 ppm	Chloroform – commercial/industrial ESL

4.0 WORK PLANS

The following will be completed prior to soil disturbance activities, as appropriate for the phase of work.

4.1 Health and Safety Plan

On-site contractors will be required to prepare Health and Safety Plans (HASPs) per 29 Code of Federal Regulations (CFR) 1910 and 1926, that address OSHA health safety and all other applicable federal, state (e.g., Cal OSHA), and local regulations. The HASPs should address the potential for impacted soils and shallow soil vapor in work areas, with identified procedures that will be implemented for the protection of on-site workers. The Contractor's HASPs will be reviewed by the Environmental Consultant and implemented by the Contractors.

4.2 Excavation and Sampling Plans

If additional evidence of impacts are observed during soil disturbance activities, soils should be segregated and stockpiled for evaluation/sampling. In consultation with the Environmental Consultant, additional plans should be developed based on the stockpile sample results and by the nature and extent of the sample results, impacts, excavation and confirmatory sampling plans should be considered for soil disturbance in these areas.

4.3 Air Quality Mitigation Plan

4.3.1 Permits

4.3.1.1 Dust Monitoring – SCAQMD Rule 403

South Coast Air Quality Management District (SCAQMD) permit for Rule 403 will be applicable during the construction and grading phases of this project. The Contractor will need to complete and submit a Large Operation Notification to SCAQMD within at least 7 days of qualifying as a large operation, as defined in Rule 403. The Contractor will be required to comply with the implementation of best available dust control measures during active operations capable of generating fugitive dust as identified in the rule. Documentation related to the implementation of the permit, including the Large Operation Notification, daily records of dust control actions taken, and any air monitoring records or other forms related to the permit shall be provided to the Owner and Environmental Consultant and a copy shall be maintained by the Contractor for at least three years. A copy of Rule 403 is included in **Appendix C**.

4.3.1.2 Toxic Air Particulate Monitoring – SCAQMD Rule 1466

SCAQMD Rule 1466 regulates the amount of particulate emissions from soils with toxic air contaminants, including arsenic, lead, and nickel, during earth-moving activities, such as grading and excavation. The Contractor will be responsible for notifying the SCAQMD of the planned field activities at least 72 hours and no more than 30 days prior to conducting earth-moving activities and adhering to the permit for the duration of permitted activities within the permitted area. Particulate matter measurements conducted by the Contractor will be recorded daily and maintained on-site throughout the duration of field activities in accordance with the SCAQMD Rule 1466. Documentation related to the implementation of the permit, shall be provided to the Owner and Environmental Consultant and a copy shall be maintained by the Contractor for at least three years. A copy of Rule 1466 is included in **Appendix C**.

4.3.1.3 VOC Monitoring – SCAQMD Rule 1166

SCAQMD Rule 1166 permit regulates the management of VOC-contaminated soil during excavation or grading. If encountered conditions or observations are made during construction

and demolition activities to indicate that a permit under Rule 1166 is required, the Environmental Consultant will be responsible for notifying the SCAQMD of the planned field activities and obtaining the required permit. The Contractor will be responsible for adhering to the permit for the duration of permitted activities in the permitted area. Activities that can trigger work under Rule 1166 may include:

- Excavation of a UST or piping which has stored VOCs
- Excavation or grading of soil known to contain VOC material including gasoline, diesel, crude oil, lubricant, waste oil, adhesive, paint, stain, solvent, resin, monomer, and/or any other material containing VOCs
- The handling or storage of VOC-contaminated soil (soil which registers > 50 ppm or greater using an organic vapor analyzer calibrated with hexane) at or from an excavation or grading site.
- The treatment of VOC-contaminated soil at a facility, i.e. on-site treatment options such as land farming or via rotary kiln treatment..

A copy of Rule 1166 is included in **Appendix C**.

5.0 SOILS MANAGEMENT PROCEDURES

The sections below detail the general soil management procedures to be implemented at the subject property.

All on-site work that involves disturbances of soil should be conducted in a manner that minimizes worker exposure and protects public health and the environment from potential contaminants, including dust, and should be in accordance with the soil management methods described within this plan.

It is assumed that all soil disturbances will be conducted under a site-specific construction Stormwater Pollution Prevention Plan (SWPPP), to be prepared and monitored for compliance by Goodman's Qualified SWPPP Practitioner (QSP).

To the extent possible, soils should be segregated based on the location from which the soil was excavated. During excavation and soil handling, soils should be screened regularly by a combination of PID measurements, Hanby® TPH test kits, or olfactory and visual observations. If evidence that soil is impacts is observed, then soil will be excavated and placed in a separate stockpile and managed as impacted soil potentially requiring off-site disposal. It is understood

that the Environmental Consultant will screen soils, document results, and record stockpile locations and volumes, as required.

These soils will be characterized via sampling to determine proper disposition. Options include on-site management and/or disposal off-site at a licensed disposal facility, depending on sample results. Soil designated for off-site disposal will be transported to the appropriate licensed facilities for the identified contamination as recommended by the Contractor and reviewed by the Environmental Consultant. As disposal facilities are identified, facility and waste profile information should be amended to the SMP.

The soil and waste staging areas will be located prior to the start of field activities. The staging areas may be relocated periodically throughout the project to accommodate the progression of the subject property development activities.

In general, all stockpiled soils will need to be characterized via sampling, to determine disposition as discussed in detail in Section 6.3.

5.1 Subject Property Constituents of Concern and Previously Identified Soil Impacts

Based on the analytical data presented in the summary of previous investigations, the constituents of concern (COCs) at the subject property include arsenic, lead, nickel, chloroform, and PCE. Additional COCs that were not identified in the previous investigation may be present at the subject property. Analytical results detailing exceedances of screening levels per location are presented in **Figure 4** for soil and **Figure 5** for soil vapor, respectively.

5.2 Stockpile Management

5.2.1 General Guidelines

Soil stockpiles generated from known areas of impacts or with indications of impacts are to be covered and underlain with polyethylene sheeting and kept covered at all times to prevent soil transport by wind or rainwater runoff. Broken or ripped tarps must be promptly replaced. When not covered, the soil stockpile surfaces should be kept visibly moist by water spray, or other suitable effective means. While stockpiles are in place, the stockpile should be inspected and maintained by the Contractor daily, and before and after every storm event.

Impacted stockpiles should be kept to one area of the subject property and be well labeled and/or marked as an area with suspected or known contaminated soils. In addition, the stockpile should be identified on a subject property plan for proper documentation of its location and extent.

Stockpile areas should be appropriately managed by the Contractor to control stormwater run-on and run-off in accordance with applicable laws and regulations. Best management practices should always be implemented for erosion and sediment control. Top sheeting must be adequately secured so that all surface areas are covered.

5.3 Stockpile Sampling

Soil stockpiles will be sampled by the Environmental Consultant, as required. Sampling protocol will be predicated on the off-site disposal facilities' requirements. The contactor is required to provide a list of proposed disposal facilities no later than two weeks prior to the commencement of excavation activities. The proposed disposal facilities are to be approved by Goodman and the Environmental Consultant at least 3 days prior to exporting.

5.3.1 Stockpile Sampling

Stockpile sampling will be performed in coordination with the Environmental Consultant and consistent with guidance, such as EPA SW-846 Compendium, Chapter 9: Sampling Plan[2], DTSC Information Advisory Clean Imported Fill Material Fact Sheet[3], and disposal facility profiling requirements.

5.3.2 Analytical Testing

Samples of stockpiled soil will require chemical testing, including, but not limited to, the following, for on-site reuse:

- TPH-DRO and TPH-MRO by EPA Method 8015 Modified by EPA Method 3630;
- TPH-GRO by EPA Method 8015 Modified;
- VOCs by EPA Method 8260;

To screen the material for disposal requirements (as required by the approved disposal facility), the soil results will be compared to:

- California Code of Regulations (CCR), Title 22, Total Threshold Limit Value (TTLC)
- 10 times the California CCR Title 22 Soluble Threshold Limit Value (STLC) value
- 20 times the TCLP value

[2] https://www.epa.gov/hw-sw846/chapter-nine-sw-846-compendium-sampling-plans
[3] https://dtsc.ca.gov/information-advisory-clean-imported-fill-material-fact-sheet/

The 10X STLC and 20X TCLP are triggers to determine if the soil samples need to be further analyzed for leaching by STLC or TCLP to determine if the stockpile may be classified as hazardous.

If the 95% UCL of the results exceed TTLC, the soil will be considered hazardous by California Title 22, and will be disposed of off-site.

If the 95% UCL of the results do not exceed TTLC but are above STLC and TCLP hazardous triggers, the samples will be analyzed for STLC and/or TCLP, as appropriate. The 95% UCL of the results of the STLC and/or TCLP analysis will be compared to their respective limits to establish the appropriate reuse or disposal option as indicated above.

Based on the data collected, an alternative approach (e.g., composite sampling) may be followed as outlined in ASTM D6009-19: Standard Guide for Sampling Waste Piles or other ASTM standards (**Appendix D**). Additional chemical tests may be warranted if soil disposition is to be at a disposal facility. Specific required tests should be requested from the planned disposal facility.

5.4 Disposition of Soils

The results of the sampling and analysis will be used as a guide to evaluate the following proposed dispositions of soils.

5.4.1 General Reuse

Soil for general on-site reuse will meet one of the following criteria:

- PID readings below 50 ppm;
- Dataset results in all concentrations that do not exceed applicable SLs; or
- Dataset analytical results with calculated 95% UCL concentrations below applicable SLs and hazardous waste criteria

5.4.2 Conditional Reuse

Upon the Owner's approval, soil may be retained and proposed for reuse under asphalt cover if 95% UCL concentrations are above applicable SLs but below hazardous waste criteria. This decision may depend on an expanded risk or other evaluations, alternative measures of soil isolation or enhanced land use restriction covenants, and coordination with the Department of Toxic Substances Control (DTSC).

5.4.3 Off-Site Soil Disposal

Soil considered for off-site landfill disposal will meet one of the following criteria:

- PID readings above 1,000 ppm;
- Dataset results in all concentrations of a certain constituent that exceed applicable SLs; or
- Dataset analytical results with calculated 95% UCL concentrations above applicable SLs and/or hazardous waste criteria

Soil identified for disposal off-site will be sourced from a stockpile that has been chemically tested and profiled. Soil will be directly loaded from the stockpile into a container, dump truck, or trailer and immediately transported to the licensed soil disposal facility. The material is be handled and transported in accordance with applicable Department of Transportation (DOT) regulations and other applicable local, state, and federal regulations. All transport of the stockpiled materials will be performed by licensed haulers with current permits in accordance with appropriate local, state, and federal regulations. Loaded vehicles leaving the subject property will be appropriately placarded, lined and securely covered in accordance with applicable federal, state, local, and DOT requirements (or other applicable transportation requirements).

Before transporting soil off-site, trucks must use a tarp cover (or equivalent) and soil must be sufficiently wetted during loading to avoid generating dust. Excess soil should be removed from bumpers, fenders, or other exterior surfaces of the cargo compartment where soil may collect. Haul trucks transporting soil off-site must follow established subject property access protocols, as required, to meet the requirements of the subject property's construction SWPPP.

If warranted, site personnel may be stationed at the access and egress points to monitor inflow into and outflow from the subject property, document truck number, destination, and truck ticket number. Contractor site personnel must inspect all trucks exiting the subject property and must conduct necessary cleaning to prevent track out.

Soil excavated and removed from the subject property will be tracked using bills of lading, tickets, or manifests to confirm disposal/placement area. The Contractor should provide documentation regarding the exporting, tonnage/yardage, and the receiving facility to the Owner on a weekly basis.

Soil from the subject property shall not be offered as fill material off-site without prior written authorization from the Owner. Labeling requirements for transportation of waste shall be in

accordance with Title 29 of the CFR, Parts 172 and 173, and any other applicable law. Records of exported soil shall be maintained by the Contractor and copies provided to the Owner. A pre-approved list of potential disposal facilities to be used for the project will be appended to this report as **Table 1** as submitted by the Contractor and approved by the Owner.

5.5 Imported Backfill

Soil or crushed material to be imported to the subject property as backfill will be imported from a documented clean source such as a quarry or gravel pit. It is assumed that a documented clean soil source will include environmental soil analytical data. This information should be obtained and compared against criteria presented in the California DTSC Information Advisory Clean Imported Fill Material, dated October 2001. A copy of the advisory is included in **Appendix E** for reference and referral. The appropriateness of the provided test data is be evaluated by Environmental Consultant, with consideration of sample date(s), approximate volume and/or acreage the sample(s) are representative of, and chemical tests conducted.

All data should be received at least five business days prior to the date of the anticipated import date. In the event that additional soil sampling of the imported soil is required, additional time should time should be scheduled for sampling and laboratory turnaround time (two weeks or more).

6.0 IDENTIFICATION AND MANAGEMENT OF UNANTICIPATED CONDITIONS

The sections below describe "Unanticipated Conditions" that require special handling and management under this SMP.

The following conditions, if encountered at the subject property or within areas immediately adjacent to the subject property, shall be considered an "Unanticipated Condition" and may require additional assessment:

- Soil with unusual coloring or staining, which may indicate the presence of VOCs or TPH;
- Soil with strong or unusual odors, which may indicate the presence of VOCs or TPH;
- Oily or shiny soil or soil saturated with free-phase petroleum product;
- Soil vapor indicated by strong or unusual odor;
- Oil or other petroleum hydrocarbon materials;
- Soil screening results indicative of soil impacts above applicable ESLs;
- Unknown or unidentified liquids;

- Buried structures, including, but not limited to, former USTs, pipelines, sumps, or vaults that may potentially contain hazardous materials; and
- Former wells.
- Other Unanticipated Conditions not listed above

Encountering an Unanticipated Condition at the subject property during grading, construction, or development may present a health and safety exposure concern, depending on the nature and extent of hazardous substances or petroleum products that may be associated with the condition. In the event that such conditions are encountered, the Contractor must notify the Owner, stop work in the area, secure the subject property, provide health and safety guidelines for personnel for the new conditions and request the Environmental Consultant to sample and test the soil and advise the Contractor and Owner how to manage any such materials as discussed in Sections 4.2 and 5.4 above. Agency notifications will be required if conditions meet the threshold for reporting.

7.0 HEALTH AND SAFETY MEASURES

Working near contaminated media or encountering an Unanticipated Condition during soil intrusive activities at the subject property may present a health and safety exposure concern, depending on the nature and extent of hazardous substances associated with the condition. The Contractor is responsible for all health and safety controls on the jobsite. Potential routes of exposure to hazardous substances are through the following four exposure pathways:

- Dermal (skin) contact with soil, liquid, or other media containing hazardous substances;
- Inhalation of chemically-affected dust;
- Inhalation of VOCs from contaminated soil or soil gas; and
- Ingestion of soil, liquid, or other media containing hazardous substances.

On-site contractors that may contact potentially contaminated soil or soil vapor at the subject property during demolition or construction activities are required to prepare a site-specific HASP that complies with applicable occupational health and safety standards, including, but not limited to, 29 CFR 1910.120.

All HASPs must be maintained by on-site environmental health and safety personnel. This section is not intended to relieve any person, including contractors or employers, of other mandated worker health and safety planning and training requirements under relevant federal, state, or local statutes. Personnel conducting the work are responsible for reviewing information about subject

property conditions, potential health and safety concerns, and toxicological information for COCs or when preparing a HASP for the subject property. Contractors working in areas of known or suspected impacts must ensure that workers have appropriate health and safety training, site-specific training, and personal protective equipment (PPE) as determined by the relevant HASP.

8.0 SITE VISITS

The Environmental Consultant will conduct periodic site visits and/or continuous observations when soil disturbance operations are occurring, to review the implementation of this SMP and/or to document soil excavation and stockpiling. It is expected that a representative from SCAQMD will also be performing periodic site visits to review implementation of SCAQMD permit conditions during construction.

9.0 REPORTING

The Contractor shall provide documentation of exported soil volumes, including bills of lading or haul tickets, truck numbers, etc. on a minimum of a weekly basis. All documentation regarding the receiving facility shall be submitted to the Owner at least two weeks in advance of the export activities. Any unanticipated conditions will be documented with photos and a description log of the condition. In addition, VOC concentration measurements, dust control methods, and other field screening data will be recorded daily and maintained on-site by the Contractor throughout the duration of field activities in accordance with the permits specified above. All activities associated with the management of soil (including soil disposal from and import onto the subject property) will be documented either in a standalone report that will be provided to the Owner for recordkeeping and SCAQMD permit requirements.

10.0 LIMITATIONS

This SMP has been prepared on behalf of the Owner. The conclusions and recommendations in this report concerning the subject property are the professional opinions of the Environmental Consultant's personnel involved with the project, and this report should not be considered a legal interpretation of existing environmental regulations. Opinions presented herein apply to subject property conditions existing at the time of our assessment and cannot necessarily be taken to apply to subject property changes or conditions of which the Environmental Consultant is not aware and has not had the opportunity to evaluate. The SMP is subject to revisions following any supplemental subsurface investigations performed at the subject property by Environmental Consultant and scheduled before redevelopment activities commence.

11.0 REFERENCES

The following references were reviewed as part of this SMP:

American Society for Testing and Materials (ASTM), D6009-19: Standard Guide for Sampling Waste Piles, October 2019.

California Department of Toxic Substances Control, Information Advisory Clean, Imported Fill Material, October 2001.

Department of Toxic Substances Control, Human and Ecological Risk Office Note 3: DTSC-Modified Recommended Soil, Ambient Air and Tap Water Screening levels, Table 2, June 2020.

Department of Toxic Substances Control, Human and Ecological Risk Office Note 3: DTSC-Modified Recommended Screening Levels for Tap Water that Exceed State or Federal Maximum Contaminant Levels, Table 4, June 2020.

Environmental Protection Agency, Industrial Air Regional Screening Levels, November 2019

Langan 2023, Phase II Investigation Report, 3049, 3094, 3095, 3163, and 3200 East Vernon Avenue, 30 May 2023.

San Francisco Bay Area Regional Water Quality Control Board, Environmental Screening Levels for Groundwater Direct Exposure Human Health Risk Levels – Tap water Cancer Risk and Non-cancer Hazard (2019 Rev 2).

South Coast Air Quality Management District, Rule 403 – Fugitive Dust, Amended 3 June 2005.

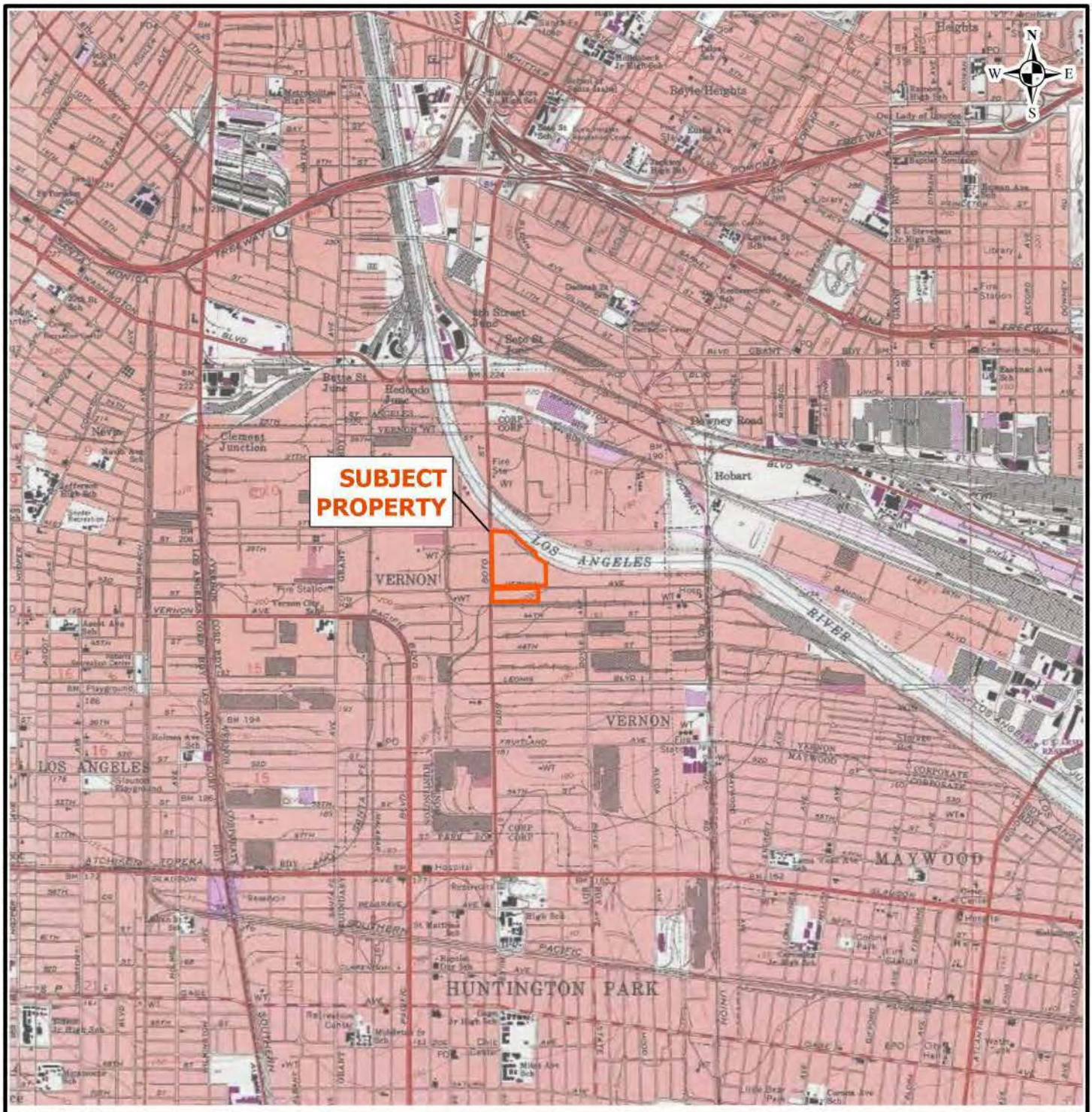
South Coast Air Quality Management District, Rule 1166 - Volatile Organic Compound Emissions from Decontamination of Soil, Amended 11 May 2001.

South Coast Air Quality Management District, Rule 1466 – Control of Particulate Emissions from Soils with Toxic Air Contaminants, Amended 4 June 2021.

United States Environmental Protection Agency, Test Methods for Evaluating Solid Waste: Physical / Chemical Methods Compendium (SW-846), Chapter 9: Sampling Plan, September 1986.

United States Environmental Protection Agency, Class I Resource Conservation and Recovery Act Toxicity Characteristic Leaching Procedure, October 2009.

FIGURES


SUBJECT PROPERTY
N
W
E
S
Heights
Belvie Heights
Bethune Jr High Sch
Bethune Jr High Sch
Eastern Ave Sch
Fire Station
Library
Bethune Jr High Sch
Bethune Jr High Sch
Bethune Jr High Sch



LEGEND

INFERRED GROUNDWATER FLOW DIRECTION

SUBJECT PROPERTY

NOTES:
1. AERIAL IMAGERY PROVIDED BY NEARMAP. FLOWN ON 01/26/2023.
2. ALL LOCATIONS OF SUBJECT PROPERTY RECONNAISSANCE OBSERVATIONS ARE APPROXIMATE.

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Project
3049 EAST VERNON AVE
VERNON
LOS ANGELES COUNTY CALIFORNIA

Figure Title
SUBJECT PROPERTY LAYOUT

Project No.	721040501
Date	9/13/2023
Scale	1" = 250 feet
Drawn By	AC
Figure	2

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LEGEND

BORING LOCATIONS

SUBJECT PROPERTY

NOTES:
1. AERIAL IMAGERY PROVIDED BY NEARMAP. FLOWN ON 01/26/2023.
2. ALL LOCATIONS OF SUBJECT PROPERTY RECONNAISSANCE OBSERVATIONS ARE APPROXIMATE.

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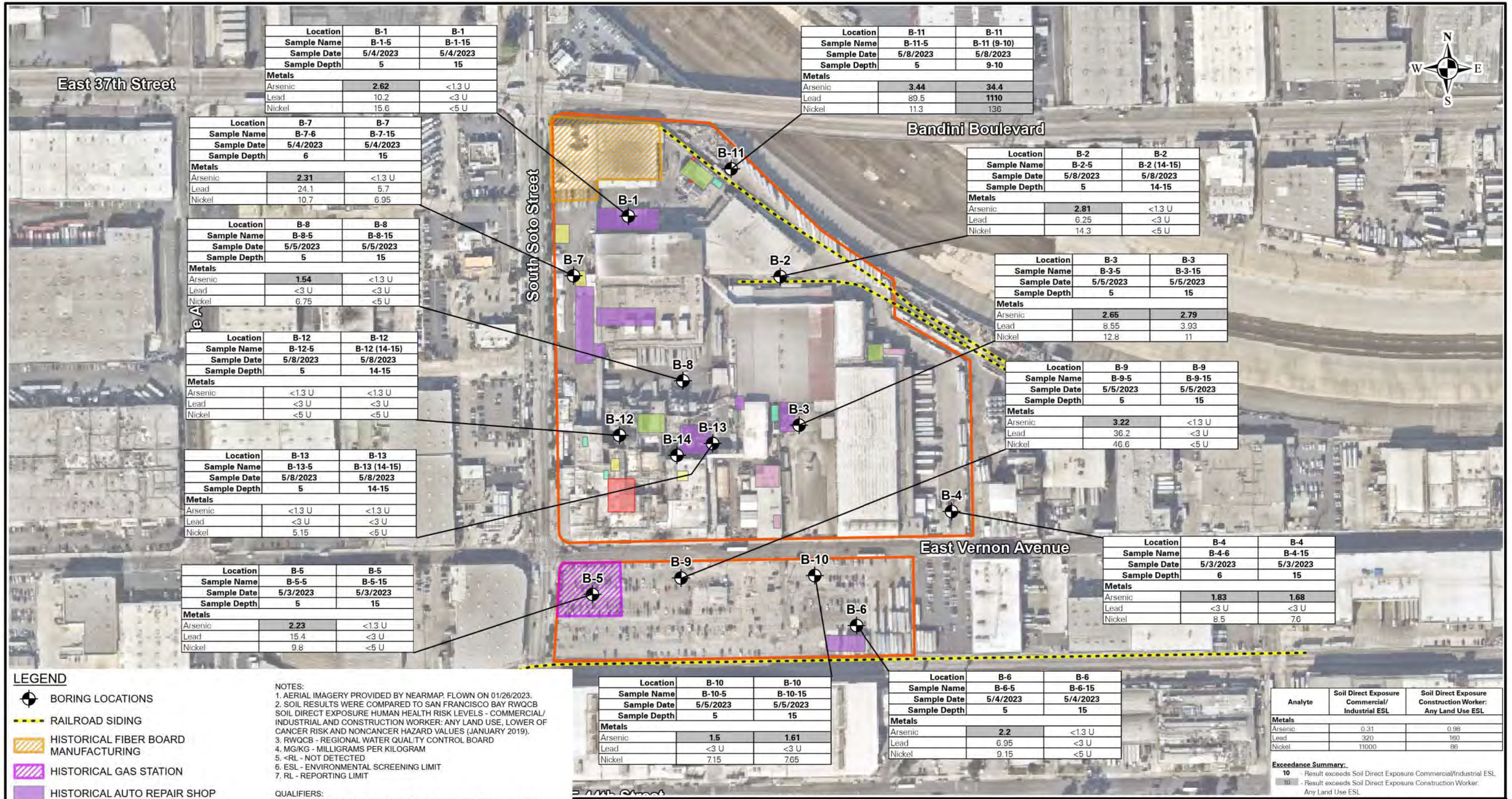
Figure Title
SAMPLE LOCATION MAP

Project No.	721040501
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Scale	1" = 250 feet
Drawn By	OG

Figure 3

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Location	B-1	B-1
Sample Name	B-1-5	B-1-15
Sample Date	5/4/2023	5/4/2023
Sample Depth	5	15
Metals		
Arsenic	**2.62**	<1.3 U
Lead	10.2	<3 U
Nickel	15.6	<5 U

Location	B-11	B-11
Sample Name	B-11-5	B-11 (9-10)
Sample Date	5/8/2023	5/8/2023
Sample Depth	5	9-10
Metals		
Arsenic	**3.44**	**34.4**
Lead	89.5	**1110**
Nickel	11.3	136

Location	B-7	B-7
Sample Name	B-7-6	B-7-15
Sample Date	5/4/2023	5/4/2023
Sample Depth	6	15
Metals		
Arsenic	**2.31**	<1.3 U
Lead	24.1	5.7
Nickel	10.7	6.95

Location	B-2	B-2
Sample Name	B-2-5	B-2 (14-15)
Sample Date	5/8/2023	5/8/2023
Sample Depth	5	14-15
Metals		
Arsenic	**2.81**	<1.3 U
Lead	6.25	<3 U
Nickel	14.3	<5 U

Location	B-8	B-8
Sample Name	B-8-5	B-8-15
Sample Date	5/5/2023	5/5/2023
Sample Depth	5	15
Metals		
Arsenic	**1.54**	<1.3 U
Lead	<3 U	<3 U
Nickel	6.75	<5 U

Location	B-3	B-3
Sample Name	B-3-5	B-3-15
Sample Date	5/5/2023	5/5/2023
Sample Depth	5	15
Metals		
Arsenic	**2.65**	**2.79**
Lead	8.55	3.93
Nickel	12.8	11

Location	B-12	B-12
Sample Name	B-12-5	B-12 (14-15)
Sample Date	5/8/2023	5/8/2023
Sample Depth	5	14-15
Metals		
Arsenic	<1.3 U	<1.3 U
Lead	<3 U	<3 U
Nickel	<5 U	<5 U

Location	B-9	B-9
Sample Name	B-9-5	B-9-15
Sample Date	5/5/2023	5/5/2023
Sample Depth	5	15
Metals		
Arsenic	**3.22**	<1.3 U
Lead	36.2	<3 U
Nickel	46.6	<5 U

Location	B-13	B-13
Sample Name	B-13-5	B-13 (14-15)
Sample Date	5/8/2023	5/8/2023
Sample Depth	5	14-15
Metals		
Arsenic	<1.3 U	<1.3 U
Lead	<3 U	<3 U
Nickel	5.15	<5 U

Location	B-4	B-4
Sample Name	B-4-6	B-4-15
Sample Date	5/3/2023	5/3/2023
Sample Depth	6	15
Metals		
Arsenic	**1.83**	**1.68**
Lead	<3 U	<3 U
Nickel	8.5	7.6

Location	B-5	B-5
Sample Name	B-5-5	B-5-15
Sample Date	5/3/2023	5/3/2023
Sample Depth	5	15
Metals		
Arsenic	**2.23**	<1.3 U
Lead	15.4	<3 U
Nickel	9.8	<5 U

Location	B-10	B-10
Sample Name	B-10-5	B-10-15
Sample Date	5/5/2023	5/5/2023
Sample Depth	5	15
Metals		
Arsenic	**1.5**	**1.61**
Lead	<3 U	<3 U
Nickel	7.15	7.65

Location	B-6	B-6
Sample Name	B-6-5	B-6-15
Sample Date	5/4/2023	5/4/2023
Sample Depth	5	15
Metals		
Arsenic	**2.2**	<1.3 U
Lead	6.95	<3 U
Nickel	9.15	<5 U

Analyte	Soil Direct Exposure Commercial/ Industrial ESL	Soil Direct Exposure Construction Worker: Any Land Use ESL
Metals		
Arsenic	0.31	0.98
Lead	320	160
Nickel	11000	86

Exceedance Summary:

10 - Result exceeds Soil Direct Exposure Commercial/Industrial ESL

10 - Result exceeds Soil Direct Exposure Construction Worker: Any Land Use ESL

LEGEND

- BORING LOCATIONS
- RAILROAD SIDING
- HISTORICAL FIBER BOARD MANUFACTURING
- HISTORICAL GAS STATION
- HISTORICAL AUTO REPAIR SHOP
- HISTORICAL SUBSTATION
- HISTORICAL UST
- ENGINE ROOM
- MAINTENANCE BUILDINGS
- HAZARDOUS WASTE STORAGE AREA
- SUBJECT PROPERTY

NOTES:
1. AERIAL IMAGERY PROVIDED BY NEARMAP, FLOWN ON 01/26/2023.
2. SOIL RESULTS WERE COMPARED TO SAN FRANCISCO BAY RWQCB SOIL DIRECT EXPOSURE HUMAN HEALTH RISK LEVELS - COMMERCIAL/ INDUSTRIAL AND CONSTRUCTION WORKER: ANY LAND USE, LOWER OF CANCER RISK AND NONCANCER HAZARD VALUES (JANUARY 2019).
3. RWQCB - REGIONAL WATER QUALITY CONTROL BOARD
4. MG/KG - MILLIGRAMS PER KILOGRAM
5. <RL - NOT DETECTED
6. ESL - ENVIRONMENTAL SCREENING LIMIT
7. RL - REPORTING LIMIT

QUALIFIERS:
U - THE ANALYTE WAS ANALYZED FOR, BUT WAS NOT DETECTED AT A LEVEL GREATER THAN OR EQUAL TO THE LEVEL OF THE RL OR THE SAMPLE CONCENTRATION FOR RESULTS IMPACTED BY BLANK CONTAMINATION.

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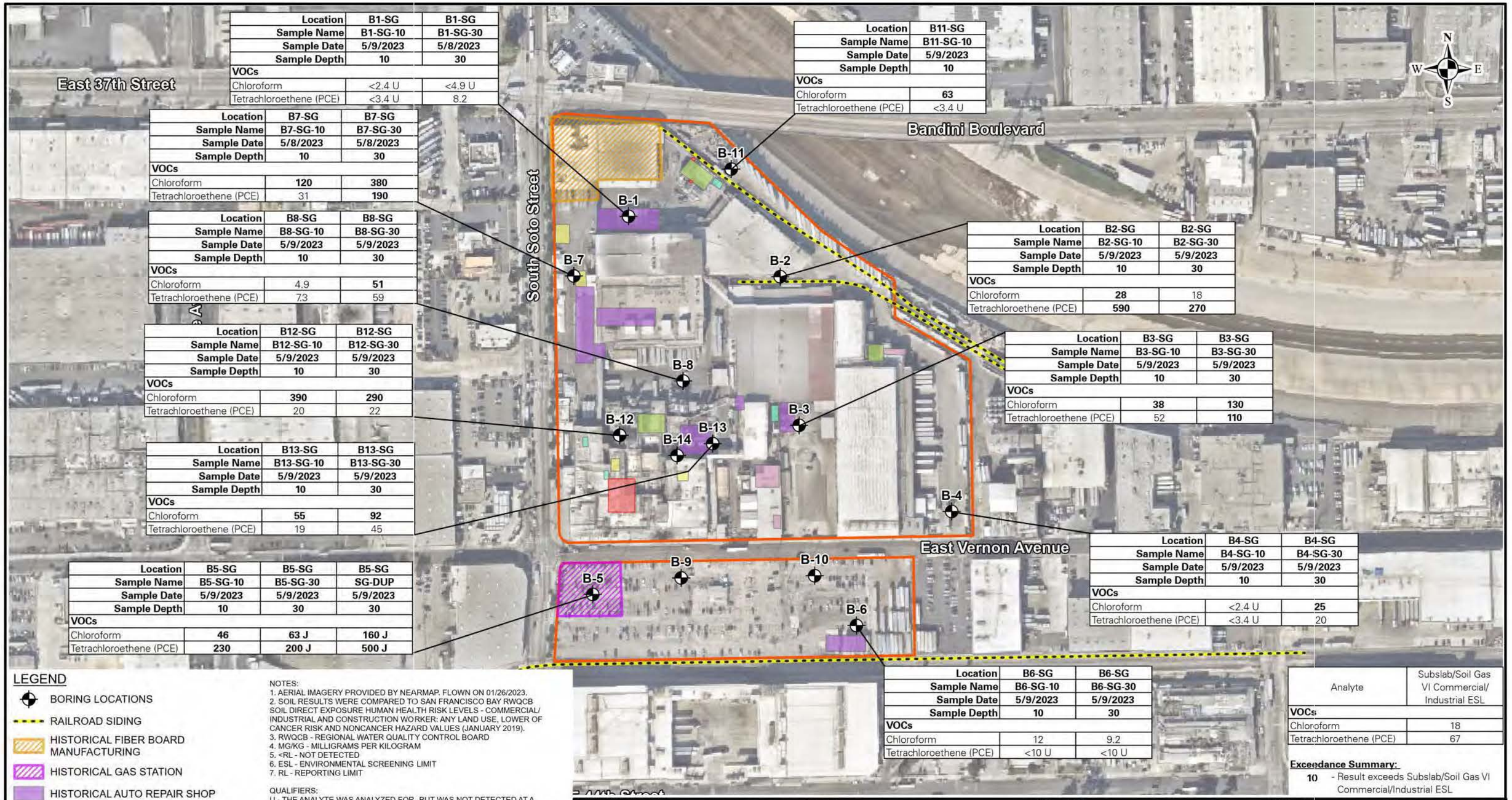
Project
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LOS ANGELES COUNTY CALIFORNIA

Figure Title
SOIL SAMPLE RESULTS EXCEEDANCE SUMMARY

Project No. 721040501
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Figure 4

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Location	B1-SG	B1-SG
Sample Name	B1-SG-10	B1-SG-30
Sample Date	5/9/2023	5/8/2023
Sample Depth	10	30
VOCs		
Chloroform	<2.4 U	<4.9 U
Tetrachloroethene (PCE)	<3.4 U	8.2

Location	B11-SG
Sample Name	B11-SG-10
Sample Date	5/9/2023
Sample Depth	10
VOCs	
Chloroform	**63**
Tetrachloroethene (PCE)	<3.4 U

Location	B7-SG	B7-SG
Sample Name	B7-SG-10	B7-SG-30
Sample Date	5/8/2023	5/8/2023
Sample Depth	10	30
VOCs		
Chloroform	**120**	**380**
Tetrachloroethene (PCE)	31	**190**

Location	B2-SG	B2-SG
Sample Name	B2-SG-10	B2-SG-30
Sample Date	5/9/2023	5/9/2023
Sample Depth	10	30
VOCs		
Chloroform	**28**	18
Tetrachloroethene (PCE)	**590**	**270**

Location	B8-SG	B8-SG
Sample Name	B8-SG-10	B8-SG-30
Sample Date	5/9/2023	5/9/2023
Sample Depth	10	30
VOCs		
Chloroform	4.9	**51**
Tetrachloroethene (PCE)	7.3	59

Location	B3-SG	B3-SG
Sample Name	B3-SG-10	B3-SG-30
Sample Date	5/9/2023	5/9/2023
Sample Depth	10	30
VOCs		
Chloroform	**38**	**130**
Tetrachloroethene (PCE)	52	**110**

Location	B12-SG	B12-SG
Sample Name	B12-SG-10	B12-SG-30
Sample Date	5/9/2023	5/9/2023
Sample Depth	10	30
VOCs		
Chloroform	**390**	**290**
Tetrachloroethene (PCE)	20	22

Location	B13-SG	B13-SG
Sample Name	B13-SG-10	B13-SG-30
Sample Date	5/9/2023	5/9/2023
Sample Depth	10	30
VOCs		
Chloroform	**55**	**92**
Tetrachloroethene (PCE)	19	45

Location	B4-SG	B4-SG
Sample Name	B4-SG-10	B4-SG-30
Sample Date	5/9/2023	5/9/2023
Sample Depth	10	30
VOCs		
Chloroform	<2.4 U	**25**
Tetrachloroethene (PCE)	<3.4 U	20

Location	B5-SG	B5-SG	B5-SG
Sample Name	B5-SG-10	B5-SG-30	SG-DUP
Sample Date	5/9/2023	5/9/2023	5/9/2023
Sample Depth	10	30	30
VOCs			
Chloroform	**46**	**63 J**	**160 J**
Tetrachloroethene (PCE)	**230**	**200 J**	**500 J**

Location	B6-SG	B6-SG
Sample Name	B6-SG-10	B6-SG-30
Sample Date	5/9/2023	5/9/2023
Sample Depth	10	30
VOCs		
Chloroform	12	9.2
Tetrachloroethene (PCE)	<10 U	<10 U

Analyte	Subslab/Soil Gas VI Commercial/ Industrial ESL
VOCs	
Chloroform	18
Tetrachloroethene (PCE)	67

Exceedance Summary:

10 - Result exceeds Subslab/Soil Gas VI Commercial/Industrial ESL

LEGEND

- BORING LOCATIONS
- RAILROAD SIDING
- HISTORICAL FIBER BOARD MANUFACTURING
- HISTORICAL GAS STATION
- HISTORICAL AUTO REPAIR SHOP
- HISTORICAL SUBSTATION
- HISTORICAL UST
- ENGINE ROOM
- MAINTENANCE BUILDINGS
- HAZARDOUS WASTE STORAGE AREA
- SUBJECT PROPERTY

NOTES:
1. AERIAL IMAGERY PROVIDED BY NEARMAP. FLOWN ON 01/26/2023.
2. SOIL RESULTS WERE COMPARED TO SAN FRANCISCO BAY RWQCB SOIL DIRECT EXPOSURE HUMAN HEALTH RISK LEVELS - COMMERCIAL/ INDUSTRIAL AND CONSTRUCTION WORKER: ANY LAND USE, LOWER OF CANCER RISK AND NONCANCER HAZARD VALUES (JANUARY 2019).
3. RWQCB - REGIONAL WATER QUALITY CONTROL BOARD
4. MG/KG - MILLIGRAMS PER KILOGRAM
5. <RL - NOT DETECTED
6. ESL - ENVIRONMENTAL SCREENING LIMIT
7. RL - REPORTING LIMIT

QUALIFIERS:
U - THE ANALYTE WAS ANALYZED FOR, BUT WAS NOT DETECTED AT A LEVEL GREATER THAN OR EQUAL TO THE LEVEL OF THE RL OR THE SAMPLE CONCENTRATION FOR RESULTS IMPACTED BY BLANK CONTAMINATION.
J - THE ANALYTE WAS POSITIVELY IDENTIFIED AND THE ASSOCIATED NUMERICAL VALUE IS THE APPROXIMATE CONCENTRATION OF THE ANALYTE IN THE SAMPLE.

250 0 250
SCALE IN FEET

LANGAN

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Project
3049 EAST VERNON AVE
VERNON
LOS ANGELES COUNTY CALIFORNIA

Figure Title
SOIL VAPOR SCREENING LIMIT EXCEEDANCES

Project No.	721040501
Date	9/13/2023
Scale	1" = 250 feet
Drawn By	OG
Figure	5

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TABLES

APPENDIX A

Appendix D
Summary of Soil Vapor Analytical Results
3049, 3094, 3095, 3163, and 3200 East Vernon Avenue, Vernon, California

Analyte	CAS Number	Subslab/ Soil Gas VI Commercial/ Industrial ESL	Location	B1-SG	B1-SG	B2-SG	B2-SG	B3-SG	B3-SG	B4-SG	B4-SG	B5-SG	B5-SG	B5-SG
			Sample Name	B1-SG-10	B1-SG-30	B2-SG-10	B2-SG-30	B3-SG-10	B3-SG-30	B4-SG-10	B4-SG-30	B5-SG-10	B5-SG-30	SG-DUP
			Sample Date	05/09/2023	05/08/2023	05/09/2023	05/09/2023	05/09/2023	05/09/2023	05/09/2023	05/09/2023	05/09/2023	05/09/2023	05/09/2023
			Sample Depth	10	30	10	30	10	30	10	30	10	30	30
			Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Volatile Organic Compounds														
1,1,1,2-Tetrachloroethane	630-20-6	55	ug/m3	<3.4 U	<6.9 U	<10 U	<6.9 U	<10 U	<3.4 U	<3.4 U	<10 U	<6.9 U	<3.4 U	<10 U
1,1,1-Trichloroethane	71-55-6	150,000	ug/m3	<2.7 U	<5.5 U	<8.2 U	<5.5 U	<8.2 U	<2.7 U	<2.7 U	<8.2 U	<5.5 U	<2.7 U	<8.2 U
1,1,2,2-Tetrachloroethane	79-34-5	7	ug/m3	<3.4 U	<6.9 U	<10 U	<6.9 U	<10 U	<3.4 U	<3.4 U	<10 U	<6.9 U	<3.4 U	<10 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NS	ug/m3	<3.8 U	<7.7 U	<11 U	8.7	<11 U	7	<3.8 U	<11 U	<7.7 U	<3.8 U	<11 U
1,1,2-Trichloroethane	79-00-5	26	ug/m3	<2.7 U	<5.5 U	<8.2 U	<5.5 U	<8.2 U	<2.7 U	<2.7 U	<8.2 U	<5.5 U	<2.7 U	<8.2 U
1,1-Dichloroethane	75-34-3	260	ug/m3	<2 U	<4.1 U	<6.1 U	<4.1 U	<6.1 U	<2 U	<2 U	<6.1 U	<4.1 U	<2 U	<6.1 U
1,1-Dichloroethene	75-35-4	10,000	ug/m3	<2 U	<4 U	<6 U	<4 U	<6 U	<2 U	<2 U	<6 U	<4 U	<2 U	<6 U
1,1-Difluoroethane	75-37-6	NS	ug/m3	<14 U	<27 U	<41 U	<27 U	<41 U	<14 U	<14 U	26,000 J	<27 U	<14 U	<41 U
1,2,4-Trichlorobenzene	120-82-1	290	ug/m3	<3.7 U	<7.4 U	<11 U	<7.4 U	<11 U	<3.7 U	<3.7 U	<11 U	<7.4 U	<3.7 U	<11 U
1,2,4-Trimethylbenzene	95-63-6	NS	ug/m3	<2.5 U	<4.9 U	<7.4 U	<4.9 U	<7.4 U	<2.5 U	<2.5 U	<7.4 U	<4.9 U	<2.5 U	<7.4 U
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	0.68	ug/m3	<3.8 U	<7.7 U	<12 U	<7.7 U	<12 U	<3.8 U	<3.8 U	<12 U	<7.7 U	<3.8 U	<12 U
1,2-Dichlorobenzene	95-50-1	29,000	ug/m3	<3 U	<6 U	<9 U	<6 U	<9 U	<3 U	<3 U	<9 U	<6 U	<3 U	<9 U
1,2-Dichloroethane	107-06-2	16	ug/m3	<2 U	<4.1 U	<6.1 U	<4.1 U	<6.1 U	<2 U	<2 U	<6.1 U	<4.1 U	<2 U	<6.1 U
1,2-Dichloropropane	78-87-5	41	ug/m3	<2.3 U	<4.6 U	<6.9 U	<4.6 U	<6.9 U	<2.3 U	<2.3 U	<6.9 U	<4.6 U	<2.3 U	<6.9 U
1,2-Dichlorotetrafluoroethane	76-14-2	NS	ug/m3	<3.5 U	<7 U	<10 U	<7 U	<10 U	<3.5 U	<3.5 U	<10 U	<7 U	<3.5 U	<10 U
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	NS	ug/m3	<2.5 U	<4.9 U	<7.4 U	<4.9 U	<7.4 U	<2.5 U	<2.5 U	<7.4 U	<4.9 U	<2.5 U	<7.4 U
1,3-Butadiene	106-99-0	NS	ug/m3	<1.1 U	<2.2 U	<3.3 U	<2.2 U	<3.3 U	<1.1 U	<1.1 U	<3.3 U	<2.2 U	<1.1 U	<3.3 U
1,3-Dichlorobenzene	541-73-1	NS	ug/m3	<3 U	<6 U	<9 U	<6 U	<9 U	<3 U	<3 U	<9 U	<6 U	<3 U	<9 U
1,4-Dichlorobenzene	106-46-7	37	ug/m3	<3 U	<6 U	<9 U	<6 U	<9 U	<3 U	<3 U	<9 U	<6 U	<3 U	<9 U
1,4-Dioxane (P-Dioxane)	123-91-1	53	ug/m3	<3.6 U	<7.2 U	<11 U	<7.2 U	<11 U	<3.6 U	<3.6 U	<11 U	<7.2 U	<3.6 U	<11 U
2-Hexanone (MBK)	591-78-6	NS	ug/m3	<2.1 U	<4.1 U	<6.2 U	<4.1 U	11	<2.1 U	<2.1 U	<6.2 U	<4.1 U	<2.1 U	<6.2 U
4-Ethyltoluene	622-96-8	NS	ug/m3	<2.5 U	<4.9 U	<7.4 U	<4.9 U	<7.4 U	<2.5 U	<2.5 U	<7.4 U	<4.9 U	<2.5 U	<7.4 U
Acetone	67-64-1	4,500,000	ug/m3	41	230	<36 U	53	480 J	33	25	550	44	36	37
Benzene	71-43-2	14	ug/m3	<1.6 U	<3.2 U	<4.8 U	13	<4.8 U	<1.6 U	<1.6 U	<4.8 U	<3.2 U	<1.6 U	<4.8 U
Bromodichloromethane	75-27-4	11	ug/m3	<3.4 U	<6.7 U	<10 U	<6.7 U	<10 U	<3.4 U	<3.4 U	<10 U	<6.7 U	<3.4 U	<10 U
Bromoform	75-25-2	370	ug/m3	<5.2 U	<10 U	<16 U	<10 U	<16 U	<5.2 U	<5.2 U	<16 U	<10 U	<5.2 U	<16 U
Bromomethane	74-83-9	730	ug/m3	<1.9 U	<3.9 U	<5.8 U	<3.9 U	<5.8 U	<1.9 U	<1.9 U	<5.8 U	<3.9 U	<1.9 U	<5.8 U
Butane, 2-Methoxy-2-Methyl	994-05-8	NS	ug/m3	<2.1 U	<4.2 U	<6.3 U	<4.2 U	<6.3 U	<2.1 U	<2.1 U	<6.3 U	<4.2 U	<2.1 U	<6.3 U
Carbon Disulfide	75-15-0	NS	ug/m3	<1.6 U	5.3	<4.7 U	32	<4.7 U	<1.6 U	<1.6 U	<4.7 U	<3.1 U	<1.6 U	<4.7 U
Carbon Tetrachloride	56-23-5	68	ug/m3	<3.1 U	<6.3 U	<9.4 U	<6.3 U	<9.4 U	19	<3.1 U	<9.4 U	<6.3 U	<3.1 U	<9.4 U
Chlorobenzene	108-90-7	7,300	ug/m3	<2.3 U	<4.6 U	<6.9 U	<4.6 U	<6.9 U	<2.3 U	<2.3 U	<6.9 U	<4.6 U	<2.3 U	<6.9 U
Chloroethane	75-00-3	1,500,000	ug/m3	<1.3 U	<2.6 U	<4 U	<2.6 U	<4 U	<1.3 U	<1.3 U	<4 U	<2.6 U	<1.3 U	<4 U
Chloroform	67-66-3	**18**	ug/m3	<2.4 U	<4.9 U	**28**	18	**38**	**130**	<2.4 U	**25**	**46**	**63 J**	**160 J**
Chloromethane	74-87-3	13,000	ug/m3	<4.1 U	<8.3 U	<12 U	<8.3 U	<12 U	<4.1 U	<4.1 U	<12 U	<8.3 U	<4.1 U	<12 U
Cis-1,2-Dichloroethene	156-59-2	1,200	ug/m3	<2 U	<4 U	<5.9 U	<4 U	<5.9 U	<2 U	<2 U	<5.9 U	<4 U	<2 U	<5.9 U
Cis-1,3-Dichloropropene	10061-01-5	NS	ug/m3	<2.3 U	<4.5 U	<6.8 U	<4.5 U	<6.8 U	<2.3 U	<2.3 U	<6.8 U	<4.5 U	<2.3 U	<6.8 U
Dibromochloromethane	124-48-1	NS	ug/m3	<4.3 U	<8.5 U	<13 U	<8.5 U	<13 U	<4.3 U	<4.3 U	<13 U	<8.5 U	<4.3 U	<13 U
Dichlorodifluoromethane	75-71-8	NS	ug/m3	<2.5 U	<5 U	<7.4 U	<5 U	<7.4 U	<2.5 U	<2.5 U	<7.4 U	<5 U	<2.5 U	<7.4 U
Ethyl Acetate	141-78-6	NS	ug/m3	<1.8 U	37	<5.4 U	19	40	17	<1.8 U	80	18	11 J	29 J
Ethyl Tert-Butyl Ether	637-92-3	NS	ug/m3	<2.1 U	<4.2 U	<6.3 U	<4.2 U	<6.3 U	<2.1 U	<2.1 U	<6.3 U	<4.2 U	<2.1 U	<6.3 U
Ethylbenzene	100-41-4	160	ug/m3	<2.2 U	<4.3 U	<6.5 U	<4.3 U	<6.5 U	<2.2 U	<2.2 U	<6.5 U	<4.3 U	<2.2 U	<6.5 U
Hexachlorobutadiene	87-68-3	19	ug/m3	<5.3 U	<11 U	<16 U	<11 U	<16 U	<5.3 U	<5.3 U	<16 U	<11 U	<5.3 U	<16 U
Isopropanol	67-63-0	NS	ug/m3	<12 U	<25 U	<37 U	55	<37 U	17	21	170	<25 U	12	<37 U
Isopropyl Ether	108-20-3	NS	ug/m3	<2.1 U	<4.2 U	<6.3 U	<4.2 U	<6.3 U	<2.1 U	<2.1 U	<6.3 U	<4.2 U	<2.1 U	<6.3 U
M,P-Xylene	179601-23-1	NS	ug/m3	<2.2 U	5.2	<6.5 U	13	<6.5 U	<2.2 U	<2.2 U	<6.5 U	<4.3 U	<2.2 U	<6.5 U
Methyl Ethyl Ketone (2-Butanone)	78-93-3	730,000	ug/m3	2.9	32	<4.4 U	16	36	14	2.2	69	15	9.5 J	24 J
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone	108-10-1	440,000	ug/m3	<2.1 U	<4.1 U	<6.2 U	<4.1 U	<6.2 U	2.3	<2.1 U	<6.2 U	<4.1 U	<2.1 U	<6.2 U
Methylene Chloride	75-09-2	410	ug/m3	14	<21 U	<31 U	<21 U	<31 U	<10 U	<10 U	<31 U	<21 U	<10 U	<31 U
Naphthalene	91-20-3	12	ug/m3	<2.6 U	<5.2 U	<7.9 U	<5.2 U	<7.9 U	<2.6 U	<2.6 U	<7.9 U	<5.2 U	<2.6 U	<7.9 U
n-Hexane	110-54-3	NS	ug/m3	<1.8 U	<3.5 U	<5.3 U	8.1	<5.3 U	1.9	<1.8 U	<5.3 U	<3.5 U	<1.8 U	<5.3 U
o-Xylene (1,2-Dimethylbenzene)	95-47-6	NS	ug/m3	<2.2 U	<4.3 U	<6.5 U	4.9	<6.5 U	<2.2 U	<2.2 U	<6.5 U	<4.3 U	<2.2 U	<6.5 U
Styrene	100-42-5	130,000	ug/m3	<2.1 U	<4.3 U	<6.4 U	<4.3 U	<6.4 U	<2.1 U	<2.1 U	<6.4 U	<4.3 U	<2.1 U	<6.4 U
Tert-Butyl Alcohol	75-65-0	NS	ug/m3	2.2	6.4	<4.5 U	<3 U	11	3.8	5.1	28	3.8	3.9 J	11 J
Tert-Butyl Methyl Ether	1634-04-4	1,600	ug/m3	<1.8 U	<3.6 U	<5.4 U	<3.6 U	<5.4 U	<1.8 U	<1.8 U	<5.4 U	<3.6 U	<1.8 U	<5.4 U
Tetrachloroethene (PCE)	127-18-4	**67**	ug/m3	<3.4 U	8.2	**590**	**270**	52	**110**	<3.4 U	20	**230**	**200 J**	**500 J**
Tetrahydrofuran	109-99-9	NS	ug/m3	<1.5 U	<3 U	<4.4 U	<3 U	<4.4 U	3	<1.5 U	<4.4 U	<3 U	<1.5 U	<4.4 U
Toluene	108-88-3	44,000	ug/m3	6.2	95	13	71	15	29	<1.9 U	22	12	4.6	10
Trans-1,2-Dichloroethene	156-60-5	12,000	ug/m3	<2 U	<4 U	<5.9 U	<4 U	<5.9 U	<2 U	<2 U	<5.9 U	<4 U	<2 U	<5.9 U
Trans-1,3-Dichloropropene	10061-02-6	NS	ug/m3	<2.3 U	<4.5 U	<6.8 U	<4.5 U	<6.8 U	<2.3 U	<2.3 U	<6.8 U	<4.5 U	<2.3 U	<6.8 U
Trichloroethene (TCE)	79-01-6	100	ug/m3	<2.7 U	<5.4 U	<8.1 U	5.9	<8.1 U	4.5	<2.7 U	<8.1 U	<5.4 U	<2.7 U	<8.1 U
Trichlorofluoromethane	75-69-4	NS	ug/m3	31	300	36	96	27	29	<2.8 U	36	16	8.7 J	20 J
Vinyl Acetate	108-05-4	NS	ug/m3	<1.8 U	<3.5 U	<5.3 U	<3.5 U	<5.3 U	<1.8 U	<1.8 U	<5.3 U	<3.5 U	<1.8 U	<5.3 U
Vinyl Chloride	75-01-4	5.2	ug/m3	<1.3 U	<2.6 U	<3.8 U	<2.6 U	<3.8 U	<1.3 U	<1.3 U	<3.8 U	<2.6 U	<1.3 U	<3.8 U

ESL - Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, 2019 Rev. 2
ug/m3 - microgram per cubic meter
NS - no standard

Appendix D
Summary of Soil Vapor Analytical Results
3049, 3094, 3095, 3163, and 3200 East Vernon Avenue, Vernon, California

Analyte	CAS Number	Subslab/ Soil Gas VI Commercial/ Industrial ESL	Location	B6-SG	B6-SG	B7-SG	B7-SG	B8-SG	B8-SG	B11-SG	B12-SG	B12-SG	B13-SG	B13-SG
			Sample Name	B6-SG-10	B6-SG-30	B7-SG-10	B7-SG-30	B8-SG-10	B8-SG-30	B11-SG-10	B12-SG-10	B12-SG-30	B13-SG-10	B13-SG-30
			Sample Date	05/09/2023	05/09/2023	05/08/2023	05/08/2023	05/09/2023	05/09/2023	05/09/2023	05/09/2023	05/09/2023	05/09/2023	05/09/2023
			Sample Depth	10	30	10	30	10	30	10	10	30	10	30
			Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Volatile Organic Compounds														
1,1,1,2-Tetrachloroethane	630-20-6	55	ug/m3	<10 U	<10 U	<10 U	<10 U	<3.4 U	<21 U	<3.4 U	<10 U	<3.4 U	<3.4 U	<10 U
1,1,1-Trichloroethane	71-55-6	150,000	ug/m3	<8.2 U	<8.2 U	<8.2 U	<8.2 U	<2.7 U	<16 U	<2.7 U	<8.2 U	<2.7 U	<2.7 U	<8.2 U
1,1,2,2-Tetrachloroethane	79-34-5	7	ug/m3	<10 U	<10 U	<10 U	<10 U	<3.4 U	<21 U	<3.4 U	<10 U	<3.4 U	<3.4 U	<10 U
1,1,2-Trichloro-1,2,2-Trifluoroethane	76-13-1	NS	ug/m3	<11 U	<11 U	<11 U	<11 U	<3.8 U	<23 U	<3.8 U	<11 U	<3.8 U	<3.8 U	<11 U
1,1,2-Trichloroethane	79-00-5	26	ug/m3	<8.2 U	<8.2 U	<8.2 U	<8.2 U	<2.7 U	<16 U	<2.7 U	<8.2 U	<2.7 U	<2.7 U	<8.2 U
1,1-Dichloroethane	75-34-3	260	ug/m3	<6.1 U	<6.1 U	<6.1 U	<6.1 U	<2 U	<12 U	<2 U	<6.1 U	<2 U	<2 U	<6.1 U
1,1-Dichloroethene	75-35-4	10,000	ug/m3	<6 U	<6 U	<6 U	<6 U	<2 U	<12 U	<2 U	6.5	<2 U	<2 U	<6 U
1,1-Difluoroethane	75-37-6	NS	ug/m3	<41 U	<41 U	<41 U	<41 U	<14 U	<81 U	<14 U	<41 U	<14 U	<14 U	<41 U
1,2,4-Trichlorobenzene	120-82-1	290	ug/m3	<11 U	<11 U	<11 U	<11 U	<3.7 U	<22 U	<3.7 U	<11 U	<3.7 U	<3.7 U	<11 U
1,2,4-Trimethylbenzene	95-63-6	NS	ug/m3	<7.4 U	<7.4 U	<7.4 U	<7.4 U	<2.5 U	<15 U	<2.5 U	<7.4 U	<2.5 U	<2.5 U	<7.4 U
1,2-Dibromoethane (Ethylene Dibromide)	106-93-4	0.68	ug/m3	<12 U	<12 U	<12 U	<12 U	<3.8 U	<23 U	<3.8 U	<12 U	<3.8 U	<3.8 U	<12 U
1,2-Dichlorobenzene	95-50-1	29,000	ug/m3	<9 U	<9 U	<9 U	<9 U	<3 U	<18 U	<3 U	<9 U	<3 U	<3 U	<9 U
1,2-Dichloroethane	107-06-2	16	ug/m3	<6.1 U	<6.1 U	<6.1 U	<6.1 U	<2 U	<12 U	<2 U	<6.1 U	<2 U	<2 U	<6.1 U
1,2-Dichloropropane	78-87-5	41	ug/m3	<6.9 U	<6.9 U	<6.9 U	<6.9 U	<2.3 U	<14 U	<2.3 U	<6.9 U	<2.3 U	<2.3 U	<6.9 U
1,2-Dichlorotetrafluoroethane	76-14-2	NS	ug/m3	<10 U	<10 U	<10 U	<10 U	<3.5 U	<21 U	<3.5 U	<10 U	<3.5 U	<3.5 U	<10 U
1,3,5-Trimethylbenzene (Mesitylene)	108-67-8	NS	ug/m3	<7.4 U	<7.4 U	<7.4 U	<7.4 U	<2.5 U	<15 U	<2.5 U	<7.4 U	<2.5 U	<2.5 U	<7.4 U
1,3-Butadiene	106-99-0	NS	ug/m3	<3.3 U	<3.3 U	<3.3 U	<3.3 U	<1.1 U	<6.6 U	<1.1 U	<3.3 U	<1.1 U	<1.1 U	<3.3 U
1,3-Dichlorobenzene	541-73-1	NS	ug/m3	<9 U	<9 U	<9 U	<9 U	<3 U	<18 U	<3 U	<9 U	<3 U	<3 U	<9 U
1,4-Dichlorobenzene	106-46-7	37	ug/m3	<9 U	<9 U	<9 U	<9 U	<3 U	<18 U	<3 U	<9 U	<3 U	<3 U	<9 U
1,4-Dioxane (P-Dioxane)	123-91-1	53	ug/m3	<11 U	<11 U	<11 U	<11 U	<3.6 U	<22 U	<3.6 U	<11 U	<3.6 U	<3.6 U	<11 U
2-Hexanone (MBK)	591-78-6	NS	ug/m3	<6.2 U	7.7	<6.2 U	11	<2.1 U	<12 U	<2.1 U	<6.2 U	<2.1 U	<2.1 U	<6.2 U
4-Ethyltoluene	622-96-8	NS	ug/m3	<7.4 U	<7.4 U	<7.4 U	<7.4 U	<2.5 U	<15 U	<2.5 U	<7.4 U	<2.5 U	<2.5 U	<7.4 U
Acetone	67-64-1	4,500,000	ug/m3	270	510	250	410	48	260	22	<36 U	250 J	23	160
Benzene	71-43-2	14	ug/m3	<4.8 U	<4.8 U	<4.8 U	<4.8 U	<1.6 U	<9.6 U	<1.6 U	<4.8 U	<1.6 U	<1.6 U	<4.8 U
Bromodichloromethane	75-27-4	11	ug/m3	<10 U	<10 U	<10 U	<10 U	<3.4 U	<20 U	<3.4 U	<10 U	<3.4 U	<3.4 U	<10 U
Bromoform	75-25-2	370	ug/m3	<16 U	<16 U	<16 U	<16 U	<5.2 U	<31 U	<5.2 U	<16 U	<5.2 U	<5.2 U	<16 U
Bromomethane	74-83-9	730	ug/m3	<5.8 U	<5.8 U	<5.8 U	<5.8 U	<1.9 U	<12 U	<1.9 U	<5.8 U	<1.9 U	<1.9 U	<5.8 U
Butane, 2-Methoxy-2-Methyl	994-05-8	NS	ug/m3	<6.3 U	<6.3 U	<6.3 U	<6.3 U	<2.1 U	<13 U	<2.1 U	<6.3 U	<2.1 U	<2.1 U	<6.3 U
Carbon Disulfide	75-15-0	NS	ug/m3	<4.7 U	<4.7 U	<4.7 U	<4.7 U	<1.6 U	<9.3 U	<1.6 U	<4.7 U	<1.6 U	<1.6 U	<4.7 U
Carbon Tetrachloride	56-23-5	68	ug/m3	<9.4 U	<9.4 U	<9.4 U	<9.4 U	<3.1 U	<19 U	4	<9.4 U	<3.1 U	3.1	<9.4 U
Chlorobenzene	108-90-7	7,300	ug/m3	<6.9 U	<6.9 U	<6.9 U	<6.9 U	<2.3 U	<14 U	<2.3 U	<6.9 U	<2.3 U	<2.3 U	<6.9 U
Chloroethane	75-00-3	1,500,000	ug/m3	<4 U	<4 U	<4 U	<4 U	<1.3 U	<7.9 U	<1.3 U	<4 U	<1.3 U	<1.3 U	<4 U
Chloroform	67-66-3	**18**	ug/m3	12	9.2	**120**	**380**	4.9	**51**	**63**	**390**	**290**	**55**	**92**
Chloromethane	74-87-3	13,000	ug/m3	<12 U	<12 U	<12 U	<12 U	<4.1 U	<25 U	<4.1 U	<12 U	<4.1 U	<4.1 U	<12 U
Cis-1,2-Dichloroethene	156-59-2	1,200	ug/m3	<5.9 U	<5.9 U	<5.9 U	<5.9 U	<2 U	<12 U	<2 U	<5.9 U	<2 U	<2 U	<5.9 U
Cis-1,3-Dichloropropene	10061-01-5	NS	ug/m3	<6.8 U	<6.8 U	<6.8 U	<6.8 U	<2.3 U	<14 U	<2.3 U	<6.8 U	<2.3 U	<2.3 U	<6.8 U
Dibromochloromethane	124-48-1	NS	ug/m3	<13 U	<13 U	<13 U	<13 U	<4.3 U	<26 U	<4.3 U	<13 U	<4.3 U	<4.3 U	<13 U
Dichlorodifluoromethane	75-71-8	NS	ug/m3	<7.4 U	<7.4 U	<7.4 U	<7.4 U	<2.5 U	<15 U	<2.5 U	<7.4 U	<2.5 U	2.5	<7.4 U
Ethyl Acetate	141-78-6	NS	ug/m3	<5.4 U	48	28	68	12	44	<1.8 U	<5.4 U	<1.8 U	<1.8 U	11
Ethyl Tert-Butyl Ether	637-92-3	NS	ug/m3	<6.3 U	<6.3 U	<6.3 U	<6.3 U	<2.1 U	<13 U	<2.1 U	<6.3 U	<2.1 U	<2.1 U	<6.3 U
Ethylbenzene	100-41-4	160	ug/m3	<6.5 U	<6.5 U	<6.5 U	<6.5 U	<2.2 U	<13 U	<2.2 U	<6.5 U	<2.2 U	<2.2 U	<6.5 U
Hexachlorobutadiene	87-68-3	19	ug/m3	<16 U	<16 U	<16 U	<16 U	<5.3 U	<32 U	<5.3 U	<16 U	<5.3 U	<5.3 U	<16 U
Isopropanol	67-63-0	NS	ug/m3	<37 U	<37 U	68	<37 U	80	<74 U	<12 U	<37 U	190	29	660
Isopropyl Ether	108-20-3	NS	ug/m3	<6.3 U	<6.3 U	<6.3 U	<6.3 U	<2.1 U	<13 U	<2.1 U	<6.3 U	<2.1 U	<2.1 U	<6.3 U
M,P-Xylene	179601-23-1	NS	ug/m3	<6.5 U	<6.5 U	<6.5 U	<6.5 U	<2.2 U	<13 U	<2.2 U	<6.5 U	<2.2 U	<2.2 U	<6.5 U
Methyl Ethyl Ketone (2-Butanone)	78-93-3	730,000	ug/m3	17	42	23	57	10	38	<1.5 U	8.3	7.1	6.6	11
Methyl Isobutyl Ketone (4-Methyl-2-Pentanone	108-10-1	440,000	ug/m3	<6.2 U	<6.2 U	<6.2 U	<6.2 U	<2.1 U	<12 U	<2.1 U	6.3	<2.1 U	<2.1 U	<6.2 U
Methylene Chloride	75-09-2	410	ug/m3	<31 U	<31 U	<31 U	<31 U	<10 U	<62 U	<10 U	<31 U	<10 U	<10 U	<31 U
Naphthalene	91-20-3	12	ug/m3	<7.9 U	<7.9 U	<7.9 U	<7.9 U	<2.6 U	<16 U	<2.6 U	<7.9 U	<2.6 U	<2.6 U	<7.9 U
n-Hexane	110-54-3	NS	ug/m3	<5.3 U	<5.3 U	<5.3 U	<5.3 U	<1.8 U	<11 U	27	<5.3 U	<1.8 U	<1.8 U	<5.3 U
o-Xylene (1,2-Dimethylbenzene)	95-47-6	NS	ug/m3	<6.5 U	<6.5 U	<6.5 U	<6.5 U	<2.2 U	<13 U	<2.2 U	<6.5 U	<2.2 U	<2.2 U	<6.5 U
Styrene	100-42-5	130,000	ug/m3	<6.4 U	<6.4 U	<6.4 U	<6.4 U	<2.1 U	<13 U	<2.1 U	<6.4 U	<2.1 U	<2.1 U	<6.4 U
Tert-Butyl Alcohol	75-65-0	NS	ug/m3	<4.5 U	7.2	13	<4.5 U	42	12	10	<4.5 U	<1.5 U	9.7	11
Tert-Butyl Methyl Ether	1634-04-4	1,600	ug/m3	<5.4 U	<5.4 U	<5.4 U	<5.4 U	<1.8 U	<11 U	<1.8 U	<5.4 U	<1.8 U	<1.8 U	<5.4 U
Tetrachloroethene (PCE)	127-18-4	**67**	ug/m3	<10 U	<10 U	31	**190**	7.3	59	<3.4 U	20	22	19	45
Tetrahydrofuran	109-99-9	NS	ug/m3	<4.4 U	<4.4 U	<4.4 U	<4.4 U	<1.5 U	<8.9 U	<1.5 U	<4.4 U	<1.5 U	<1.5 U	<4.4 U
Toluene	108-88-3	44,000	ug/m3	19	25	8.1	37	11	76	14	15	20	11	8.2
Trans-1,2-Dichloroethene	156-60-5	12,000	ug/m3	<5.9 U	<5.9 U	<5.9 U	<5.9 U	<2 U	<12 U	<2 U	<5.9 U	<2 U	<2 U	<5.9 U
Trans-1,3-Dichloropropene	10061-02-6	NS	ug/m3	<6.8 U	<6.8 U	<6.8 U	<6.8 U	<2.3 U	<14 U	<2.3 U	<6.8 U	<2.3 U	<2.3 U	<6.8 U
Trichloroethene (TCE)	79-01-6	100	ug/m3	<8.1 U	<8.1 U	<8.1 U	<8.1 U	<2.7 U	<16 U	<2.7 U	<8.1 U	<2.7 U	<2.7 U	<8.1 U
Trichlorofluoromethane	75-69-4	NS	ug/m3	270	210	<8.4 U	78	95	980	31	61	65	8.3	23
Vinyl Acetate	108-05-4	NS	ug/m3	<5.3 U	<5.3 U	<5.3 U	<5.3 U	<1.8 U	<11 U	<1.8 U	<5.3 U	<1.8 U	<1.8 U	<5.3 U
Vinyl Chloride	75-01-4	5.2	ug/m3	<3.8 U	<3.8 U	<3.8 U	<3.8 U	<1.3 U	<7.7 U	<1.3 U	<3.8 U	<1.3 U	<1.3 U	<3.8 U

ESL - Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, 2
ug/m3 - microgram per cubic meter
NS - no standard

Appendix D
Summary of Soil Analytical Results
3049, 3094, 3095, 3163, and 3200 East Vernon Avenue, Vernon, California

Analyte	CAS Number	Soil Direct Exposure Commercial/ Industrial ESL	Soil Direct Exposure Construction Worker: Any Land Use ESL	Location	B-1	B-1	B-2	B-2	B-2	B-2	B-3	B-3	B-3	B-3	B-4	B-4	B-5	B-5
				Sample Name	B-1-5	B-1-15	B-2-5	B-2 (9-10)	B-2 (14-15)	B-2 (29-30)	B-3-5	B-3-10	B-3-15	B-3-30	B-4-6	B-4-15	B-5-5	B-5-15
				Sample Date	05/04/2023	05/04/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/05/2023	05/05/2023	05/05/2023	05/05/2023	05/03/2023	05/03/2023	05/03/2023	05/03/2023
				Sample Depth	5	15	5	9-10	14-15	29-30	5	10	15	30	6	15	5	15
				Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Volatile Organic Compounds (VOCs)																		
1,1,1,2-Tetrachloroethane	630-20-6	0.89	190	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
1,1,1-Trichloroethane	71-55-6	7,300	7,200	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	2.7	49	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	5.1	6.3	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	16	370	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	350	350	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
1,1-Dichloropropene	563-58-6	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
1,2,3-Trichlorobenzene	87-61-6	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
1,2,3-Trichloropropane	96-18-4	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	110	240	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
1,2,4-Trimethylbenzene	95-63-6	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
1,2-Dibromo-3-Chloropropane	96-12-8	0.059	1.1	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	0.16	3.3	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	9,400	7,800	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	2.1	45	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	4.4	66	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
1,3,5-Trimethylbenzene	108-67-8	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
1,3-Dichloropropane	142-28-9	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	12	280	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
2,2-Dichloropropane	594-20-7	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
2-Butanone	78-93-3	200,000	120,000	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
2-Chlorotoluene	95-49-8	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
4-Chlorotoluene	106-43-4	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
Benzene	71-43-2	1.4	33	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
Bromobenzene	108-86-1	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
Bromochloromethane	74-97-5	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
Bromodichloromethane	75-27-4	1.3	28	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
Bromoform	75-25-2	80	1200	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
Bromomethane	74-83-9	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	0.44	10	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
Chlorobenzene	108-90-7	1,300	1,200	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
Chloroethane	75-00-3	59,000	59,000	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
Chloroform	67-66-3	1.4	34	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
Chloromethane	74-87-3	470	470	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	85	78	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
cis-1,3-Dichloropropene	10061-01-5	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
Dibromochloromethane	124-48-1	39	290	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
Dibromomethane	74-95-3	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
Diisopropyl ether	108-20-3	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
Ethyl tert-Butyl ether	637-92-3	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
Ethylbenzene	100-41-4	26	540	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
Freon 113	76-13-1	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	5.3	100	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
Isopropyl Benzene	98-82-8	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
m,p-Xylene	179601-23-1	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
Methylene Chloride	75-09-2	25	490	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
MTBE	1634-04-4	210	4,100	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
Naphthalene	91-20-3	17	400	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
n-Butylbenzene	104-51-8	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
n-Propylbenzene	103-65-1	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
o-Xylene	95-47-6	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
p-Isopropyltoluene	99-87-6	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
sec-Butyl Benzene	135-98-8	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
Styrene	100-42-5	33,000	25,000	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
TAME	994-05-8	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
TBA	75-65-0	NS	NS	mg/kg	NA	NA	NA	<0.05	NA	<0.05	NA	<0.05	NA	<0.05	NA	NA	NA	NA
tert-Butylbenzene	98-06-6	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
Tetrachloroethene	127-18-4	2.7	33	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
Toluene	108-88-3	5,300	4,700	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	600	570	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
trans-1,3-Dichloropropene	10061-02-6	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
Trichloroethene	79-01-6	6.1	18	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA
Vinyl Chloride	75-01-4	0.15	3.4	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01	NA	NA	NA	NA

ESL - Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, 2019 Rev. 2
mg/kg - miligrams per kilogram
NS - no standard
NA - not analyzed

Analyte	CAS Number	Soil Direct Exposure Commercial/ Industrial ESL	Soil Direct Exposure Construction Worker: Any Land Use ESL	Location	B-5	B-6	B-6	B-7	B-7	B-7	B-8	B-8	B-8	B-9	B-9	B-10	B-10
				Sample Name	B-5-30	B-6-5	B-6-15	B-7-6	B-7-15	B-7-30	B-8-5	B-8-15	B-8-30	B-9-5	B-9-15	B-10-5	B-10-15
				Sample Date	05/03/2023	05/04/2023	05/04/2023	05/04/2023	05/04/2023	05/04/2023	05/05/2023	05/05/2023	05/05/2023	05/05/2023	05/05/2023	05/05/2023	05/05/2023
				Sample Depth	30	5	15	6	15	30	5	15	30	5	15	5	15
				Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Volatile Organic Compounds (VOCs)																	
1,1,1,2-Tetrachloroethane	630-20-6	0.89	190	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
1,1,1-Trichloroethane	71-55-6	7,300	7,200	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	2.7	49	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	5.1	6.3	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
1,1-Dichloroethane	75-34-3	16	370	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
1,1-Dichloroethene	75-35-4	350	350	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
1,1-Dichloropropene	563-58-6	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
1,2,3-Trichlorobenzene	87-61-6	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
1,2,3-Trichloropropane	96-18-4	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	110	240	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
1,2,4-Trimethylbenzene	95-63-6	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
1,2-Dibromo-3-Chloropropane	96-12-8	0.059	1.1	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	0.16	3.3	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	9,400	7,800	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
1,2-Dichloroethane	107-06-2	2.1	45	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
1,2-Dichloropropane	78-87-5	4.4	66	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
1,3,5-Trimethylbenzene	108-67-8	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
1,3-Dichloropropane	142-28-9	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	12	280	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
2,2-Dichloropropane	594-20-7	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
2-Butanone	78-93-3	200,000	120,000	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
2-Chlorotoluene	95-49-8	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
4-Chlorotoluene	106-43-4	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
Benzene	71-43-2	1.4	33	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
Bromobenzene	108-86-1	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
Bromochloromethane	74-97-5	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
Bromodichloromethane	75-27-4	1.3	28	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
Bromoform	75-25-2	80	1200	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
Bromomethane	74-83-9	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
Carbon Tetrachloride	56-23-5	0.44	10	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
Chlorobenzene	108-90-7	1,300	1,200	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
Chloroethane	75-00-3	59,000	59,000	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
Chloroform	67-66-3	1.4	34	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
Chloromethane	74-87-3	470	470	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	85	78	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
cis-1,3-Dichloropropene	10061-01-5	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
Dibromochloromethane	124-48-1	39	290	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
Dibromomethane	74-95-3	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
Dichlorodifluoromethane	75-71-8	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
Diisopropyl ether	108-20-3	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
Ethyl tert-Butyl ether	637-92-3	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
Ethylbenzene	100-41-4	26	540	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
Freon 113	76-13-1	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
Hexachlorobutadiene	87-68-3	5.3	100	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
Isopropyl Benzene	98-82-8	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
m,p-Xylene	179601-23-1	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
Methylene Chloride	75-09-2	25	490	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
MTBE	1634-04-4	210	4,100	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
Naphthalene	91-20-3	17	400	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
n-Butylbenzene	104-51-8	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
n-Propylbenzene	103-65-1	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
o-Xylene	95-47-6	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
p-Isopropyltoluene	99-87-6	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
sec-Butyl Benzene	135-98-8	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
Styrene	100-42-5	33,000	25,000	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
TAME	994-05-8	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
TBA	75-65-0	NS	NS	mg/kg	<0.05	NA	NA	NA	NA	<0.05	NA	NA	<0.05	NA	NA	NA	NA
tert-Butylbenzene	98-06-6	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
Tetrachloroethene	127-18-4	2.7	33	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
Toluene	108-88-3	5,300	4,700	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	600	570	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
trans-1,3-Dichloropropene	10061-02-6	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
Trichloroethene	79-01-6	6.1	18	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
Trichlorofluoromethane	75-69-4	NS	NS	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA
Vinyl Chloride	75-01-4	0.15	3.4	mg/kg	<0.01	NA	NA	NA	NA	<0.01	NA	NA	<0.01	NA	NA	NA	NA

ESL - Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, 2019 Re
mg/kg - miligrams per kilogram
NS - no standard
NA - not analyzed

Appendix D
Summary of Soil Analytical Results
3049, 3094, 3095, 3163, and 3200 East Vernon Avenue, Vernon, California

Analyte	CAS Number	Soil Direct Exposure Commercial/ Industrial ESL	Soil Direct Exposure Construction Worker: Any Land Use ESL	Location	B-11	B-11	B-12	B-12	B-12	B-12	B-13	B-13	B-13	B-13
				Sample Name	B-11-5	B-11 (9-10)	B-12-5	B-12 (9-10)	B-12 (14-15)	B-12 (29-30.5)	B-13-5	B-13 (9-10)	B-13 (14-15)	B-13 (29-30)
				Sample Date	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023
				Sample Depth	5	9-10	5	9-10	14-15	29-30.5	5	9-10	14-15	29-30
				Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Volatile Organic Compounds (VOCs)														
1,1,1,2-Tetrachloroethane	630-20-6	0.89	190	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,1,1-Trichloroethane	71-55-6	7,300	7,200	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,1,2,2-Tetrachloroethane	79-34-5	2.7	49	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,1,2-Trichloroethane	79-00-5	5.1	6.3	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,1-Dichloroethane	75-34-3	16	370	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,1-Dichloroethene	75-35-4	350	350	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,1-Dichloropropene	563-58-6	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,2,3-Trichlorobenzene	87-61-6	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,2,3-Trichloropropane	96-18-4	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,2,4-Trichlorobenzene	120-82-1	110	240	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,2,4-Trimethylbenzene	95-63-6	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,2-Dibromo-3-Chloropropane	96-12-8	0.059	1.1	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,2-Dibromoethane	106-93-4	0.16	3.3	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,2-Dichlorobenzene	95-50-1	9,400	7,800	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,2-Dichloroethane	107-06-2	2.1	45	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,2-Dichloropropane	78-87-5	4.4	66	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,3,5-Trimethylbenzene	108-67-8	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,3-Dichlorobenzene	541-73-1	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,3-Dichloropropane	142-28-9	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
1,4-Dichlorobenzene	106-46-7	12	280	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
2,2-Dichloropropane	594-20-7	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
2-Butanone	78-93-3	200,000	120,000	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
2-Chlorotoluene	95-49-8	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
4-Chlorotoluene	106-43-4	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Benzene	71-43-2	1.4	33	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Bromobenzene	108-86-1	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Bromochloromethane	74-97-5	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Bromodichloromethane	75-27-4	1.3	28	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Bromoform	75-25-2	80	1200	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Bromomethane	74-83-9	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Carbon Tetrachloride	56-23-5	0.44	10	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Chlorobenzene	108-90-7	1,300	1,200	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Chloroethane	75-00-3	59,000	59,000	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Chloroform	67-66-3	1.4	34	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Chloromethane	74-87-3	470	470	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
cis-1,2-Dichloroethene	156-59-2	85	78	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
cis-1,3-Dichloropropene	10061-01-5	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Dibromochloromethane	124-48-1	39	290	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Dibromomethane	74-95-3	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Dichlorodifluoromethane	75-71-8	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Diisopropyl ether	108-20-3	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Ethyl tert-Butyl ether	637-92-3	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Ethylbenzene	100-41-4	26	540	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Freon 113	76-13-1	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Hexachlorobutadiene	87-68-3	5.3	100	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Isopropyl Benzene	98-82-8	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
m,p-Xylene	179601-23-1	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Methylene Chloride	75-09-2	25	490	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
MTBE	1634-04-4	210	4,100	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Naphthalene	91-20-3	17	400	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
n-Butylbenzene	104-51-8	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
n-Propylbenzene	103-65-1	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
o-Xylene	95-47-6	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
p-Isopropyltoluene	99-87-6	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
sec-Butyl Benzene	135-98-8	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Styrene	100-42-5	33,000	25,000	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
TAME	994-05-8	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
TBA	75-65-0	NS	NS	mg/kg	NA	NA	NA	<0.05	NA	<0.05	NA	<0.05	NA	<0.05
tert-Butylbenzene	98-06-6	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Tetrachloroethene	127-18-4	2.7	33	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Toluene	108-88-3	5,300	4,700	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
trans-1,2-Dichloroethene	156-60-5	600	570	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
trans-1,3-Dichloropropene	10061-02-6	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Trichloroethene	79-01-6	6.1	18	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Trichlorofluoromethane	75-69-4	NS	NS	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01
Vinyl Chloride	75-01-4	0.15	3.4	mg/kg	NA	NA	NA	<0.01	NA	<0.01	NA	<0.01	NA	<0.01

ESL - Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, 2019 Re
mg/kg - miligrams per kilogram
NS - no standard
NA - not analyzed

Analyte	CAS Number	Soil Direct Exposure Commercial/ Industrial ESL	Soil Direct Exposure Construction Worker: Any Land Use ESL	Location	B-1	B-1	B-2	B-2	B-2	B-2	B-3	B-3	B-3	B-3	B-4	B-4	B-5	B-5
				Sample Name	B-1-5	B-1-15	B-2-5	B-2 (9-10)	B-2 (14-15)	B-2 (29-30)	B-3-5	B-3-10	B-3-15	B-3-30	B-4-6	B-4-15	B-5-5	B-5-15
				Sample Date	05/04/2023	05/04/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/05/2023	05/05/2023	05/05/2023	05/05/2023	05/03/2023	05/03/2023	05/03/2023	05/03/2023
				Sample Depth	5	15	5	9-10	14-15	29-30	5	10	15	30	6	15	5	15
				Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Semi-Volatile Organic Compounds (SVOCs)																		
1,2,4-Trichlorobenzene	120-82-1	110	240	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	9400	7800	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
1,2-Dinitrobenzene	528-29-0	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
1,3-Dinitrobenzene	99-65-0	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	12	280	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
1,4-Dinitrobenzene	100-25-4	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
1-Methylnaphthalene	90-12-0	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
2,3,4,6-Tetrachlorophenol	58-90-2	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA
2,3,5,6-Tetrachlorophenol	935-95-5	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	120000	35000	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	47	350	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	3500	1100	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	24000	7100	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	2300	710	mg/kg	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	11	79	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
2,6-Dichlorophenol	87-65-0	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
2-Chlorophenol	95-57-8	5800	1800	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	3000	670	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
2-Methylphenol (o-Cresol)	95-48-7	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA
2-Nitrophenol	88-75-5	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	2.7	20	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
3-/4-Methylphenol (p-/m-Cresol)	65794-96-9	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
4-Nitrophenol	100-02-7	NS	NS	mg/kg	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720	NA	NA	NA	NA
Acenaphthene	83-32-9	45000	10000	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Acenaphthylene	208-96-8	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Anthracene	120-12-7	230000	50000	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Azobenzene	103-33-3	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Benzidine	92-87-5	NS	NS	mg/kg	NA	NA	NA	<0.147	NA	<0.147	NA	<0.147	NA	<0.147	NA	NA	NA	NA
Benzo(a)anthracene	56-55-3	20	110	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Benzo(a)pyrene	50-32-8	2.1	10	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Benzo(b)fluorathene	205-99-2	21	110	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Benzo(g,h,i)perylene	191-24-2	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
benzo(k)fluorathene	207-08-9	210	910	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Benzoic Acid	65-85-0	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA
Benzyl Alcohol	100-51-6	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA
Bis(2-Chloroethoxy)methane	111-91-1	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Bis(2-chloroethyl)ether	111-44-4	0.47	6.4	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	108-60-1	23	270	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	160	950	mg/kg	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	NS	NS	mg/kg	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720	NA	NA	NA	NA
Carbazole	86-74-8	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Chrysene	218-01-9	2100	9100	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Dibenzo(a,h)anthracene	53-70-3	2.1	11	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Dibenzofuran	132-64-9	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Diethylphthalate	84-66-2	660000	150000	mg/kg	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720	NA	NA	NA	NA
Dimethyl phthalate	131-11-3	NS	NS	mg/kg	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Di-n-Octylphthalate	117-84-0	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Diphenylamine	122-39-4	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Fluoranthene	206-44-0	30000	6700	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Fluorene	86-73-7	30000	6700	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Hexachloro-1,3-butadiene	87-68-3	5.3	100	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	0.78	7.7	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Hexachloroethane	67-72-1	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Indeno(1,2,3-c,d)pyrene	193-39-5	21	110	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Isophorone	78-59-1	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Naphthalene	91-20-3	17	400	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Nitrobenzene	98-95-3	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
N-Methyl-2-Pyrrolidone (NMP)	872-50-4	NS	NS	mg/kg	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	NS	NS	mg/kg	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720	NA	NA	NA	NA
N-nitroso-di-n-propylamine	621-64-7	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Pentachlorophenol	87-86-5	4	20	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA
Phenanthrene	85-01-8	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Phenol	108-95-2	350000	98000	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288	NA	NA	NA	NA
Pyrene	129-00-0	23000	5000	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144	NA	NA	NA	NA
Pyridine	110-86-1	NS	NS	mg/kg	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720	NA	NA	NA	NA

ESL - Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, 2019 Rev. 2
mg/kg - miligrams per kilogram
NS - no standard
NA - not analyzed

Analyte	CAS Number	Soil Direct Exposure Commercial/ Industrial ESL	Soil Direct Exposure Construction Worker: Any Land Use ESL	Location	B-5	B-6	B-6	B-7	B-7	B-7	B-8	B-8	B-8	B-9	B-9	B-10	B-10
				Sample Name	B-5-30	B-6-5	B-6-15	B-7-6	B-7-15	B-7-30	B-8-5	B-8-15	B-8-30	B-9-5	B-9-15	B-10-5	B-10-15
				Sample Date	05/03/2023	05/04/2023	05/04/2023	05/04/2023	05/04/2023	05/04/2023	05/05/2023	05/05/2023	05/05/2023	05/05/2023	05/05/2023	05/05/2023	05/05/2023
				Sample Depth	30	5	15	6	15	30	5	15	30	5	15	5	15
				Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Semi-Volatile Organic Compounds (SVOCs)																	
1,2,4-Trichlorobenzene	120-82-1	110	240	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	9400	7800	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
1,2-Dinitrobenzene	528-29-0	NS	NS	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	NS	NS	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
1,3-Dinitrobenzene	99-65-0	NS	NS	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	12	280	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
1,4-Dinitrobenzene	100-25-4	NS	NS	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
1-Methylnaphthalene	90-12-0	NS	NS	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
2,3,4,6-Tetrachlorophenol	58-90-2	NS	NS	mg/kg	<0.288	NA	NA	NA	NA	<0.288	NA	NA	<0.288	NA	NA	NA	NA
2,3,5,6-Tetrachlorophenol	935-95-5	NS	NS	mg/kg	<0.288	NA	NA	NA	NA	<0.288	NA	NA	<0.288	NA	NA	NA	NA
2,4,5-Trichlorophenol	95-95-4	120000	35000	mg/kg	<0.288	NA	NA	NA	NA	<0.288	NA	NA	<0.288	NA	NA	NA	NA
2,4,6-Trichlorophenol	88-06-2	47	350	mg/kg	<0.288	NA	NA	NA	NA	<0.288	NA	NA	<0.288	NA	NA	NA	NA
2,4-Dichlorophenol	120-83-2	3500	1100	mg/kg	<0.288	NA	NA	NA	NA	<0.288	NA	NA	<0.288	NA	NA	NA	NA
2,4-Dimethylphenol	105-67-9	24000	7100	mg/kg	<0.288	NA	NA	NA	NA	<0.288	NA	NA	<0.288	NA	NA	NA	NA
2,4-Dinitrophenol	51-28-5	2300	710	mg/kg	<0.720	NA	NA	NA	NA	<0.720	NA	NA	<0.720	NA	NA	NA	NA
2,4-Dinitrotoluene	121-14-2	11	79	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
2,6-Dichlorophenol	87-65-0	NS	NS	mg/kg	<0.288	NA	NA	NA	NA	<0.288	NA	NA	<0.288	NA	NA	NA	NA
2,6-Dinitrotoluene	606-20-2	NS	NS	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
2-Chloronaphthalene	91-58-7	NS	NS	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
2-Chlorophenol	95-57-8	5800	1800	mg/kg	<0.288	NA	NA	NA	NA	<0.288	NA	NA	<0.288	NA	NA	NA	NA
2-Methylnaphthalene	91-57-6	3000	670	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
2-Methylphenol (o-Cresol)	95-48-7	NS	NS	mg/kg	<0.288	NA	NA	NA	NA	<0.288	NA	NA	<0.288	NA	NA	NA	NA
2-Nitrophenol	88-75-5	NS	NS	mg/kg	<0.288	NA	NA	NA	NA	<0.288	NA	NA	<0.288	NA	NA	NA	NA
3,3-Dichlorobenzidine	91-94-1	2.7	20	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
3-/4-Methylphenol (p-/m-Cresol)	65794-96-9	NS	NS	mg/kg	<0.288	NA	NA	NA	NA	<0.288	NA	NA	<0.288	NA	NA	NA	NA
4,6-Dinitro-2-methylphenol	534-52-1	NS	NS	mg/kg	<0.288	NA	NA	NA	NA	<0.288	NA	NA	<0.288	NA	NA	NA	NA
4-Bromophenyl-phenylether	101-55-3	NS	NS	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
4-Chloro-3-methylphenol	59-50-7	NS	NS	mg/kg	<0.288	NA	NA	NA	NA	<0.288	NA	NA	<0.288	NA	NA	NA	NA
4-Chlorophenyl-phenylether	7005-72-3	NS	NS	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
4-Nitrophenol	100-02-7	NS	NS	mg/kg	<0.720	NA	NA	NA	NA	<0.720	NA	NA	<0.720	NA	NA	NA	NA
Acenaphthene	83-32-9	45000	10000	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Acenaphthylene	208-96-8	NS	NS	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Anthracene	120-12-7	230000	50000	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Azobenzene	103-33-3	NS	NS	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Benzidine	92-87-5	NS	NS	mg/kg	<0.147	NA	NA	NA	NA	<0.147	NA	NA	<0.147	NA	NA	NA	NA
Benzo(a)anthracene	56-55-3	20	110	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Benzo(a)pyrene	50-32-8	2.1	10	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Benzo(b)fluorathene	205-99-2	21	110	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Benzo(g,h,i)perylene	191-24-2	NS	NS	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
benzo(k)fluorathene	207-08-9	210	910	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Benzoic Acid	65-85-0	NS	NS	mg/kg	<0.288	NA	NA	NA	NA	<0.288	NA	NA	<0.288	NA	NA	NA	NA
Benzyl Alcohol	100-51-6	NS	NS	mg/kg	<0.288	NA	NA	NA	NA	<0.288	NA	NA	<0.288	NA	NA	NA	NA
Bis(2-Chloroethoxy)methane	111-91-1	NS	NS	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Bis(2-chloroethyl)ether	111-44-4	0.47	6.4	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Bis(2-chloroisopropyl)ether	108-60-1	23	270	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Bis(2-Ethylhexyl)phthalate	117-81-7	160	950	mg/kg	<0.720	NA	NA	NA	NA	<0.720	NA	NA	<0.720	NA	NA	NA	NA
Butylbenzylphthalate	85-68-7	NS	NS	mg/kg	<0.720	NA	NA	NA	NA	<0.720	NA	NA	<0.720	NA	NA	NA	NA
Carbazole	86-74-8	NS	NS	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Chrysene	218-01-9	2100	9100	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Dibenzo(a,h)anthracene	53-70-3	2.1	11	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Dibenzofuran	132-64-9	NS	NS	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Diethylphthalate	84-66-2	660000	150000	mg/kg	<0.720	NA	NA	NA	NA	<0.720	NA	NA	<0.720	NA	NA	NA	NA
Dimethyl phthalate	131-11-3	NS	NS	mg/kg	<0.720	NA	NA	NA	NA	<0.720	NA	NA	<0.720	NA	NA	NA	NA
Di-n-butylphthalate	84-74-2	NS	NS	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Di-n-Octylphthalate	117-84-0	NS	NS	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Diphenylamine	122-39-4	NS	NS	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Fluoranthene	206-44-0	30000	6700	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Fluorene	86-73-7	30000	6700	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Hexachloro-1,3-butadiene	87-68-3	5.3	100	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Hexachlorobenzene	118-74-1	0.78	7.7	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Hexachlorocyclopentadiene	77-47-4	NS	NS	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Hexachloroethane	67-72-1	NS	NS	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Indeno(1,2,3-c,d)pyrene	193-39-5	21	110	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Isophorone	78-59-1	NS	NS	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Naphthalene	91-20-3	17	400	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Nitrobenzene	98-95-3	NS	NS	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
N-Methyl-2-Pyrrolidone (NMP)	872-50-4	NS	NS	mg/kg	<0.720	NA	NA	NA	NA	<0.720	NA	NA	<0.720	NA	NA	NA	NA
N-Nitrosodimethylamine	62-75-9	NS	NS	mg/kg	<0.720	NA	NA	NA	NA	<0.720	NA	NA	<0.720	NA	NA	NA	NA
N-nitroso-di-n-propylamine	621-64-7	NS	NS	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Pentachlorophenol	87-86-5	4	20	mg/kg	<0.288	NA	NA	NA	NA	<0.288	NA	NA	<0.288	NA	NA	NA	NA
Phenanthrene	85-01-8	NS	NS	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Phenol	108-95-2	350000	98000	mg/kg	<0.288	NA	NA	NA	NA	<0.288	NA	NA	<0.288	NA	NA	NA	NA
Pyrene	129-00-0	23000	5000	mg/kg	<0.144	NA	NA	NA	NA	<0.144	NA	NA	<0.144	NA	NA	NA	NA
Pyridine	110-86-1	NS	NS	mg/kg	<0.720	NA	NA	NA	NA	<0.720	NA	NA	<0.720	NA	NA	NA	NA

ESL - Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, 2019 Re
mg/kg - miligrams per kilogram
NS - no standard
NA - not analyzed

Analyte	CAS Number	Soil Direct Exposure Commercial/ Industrial ESL	Soil Direct Exposure Construction Worker: Any Land Use ESL	Location	B-11	B-11	B-12	B-12	B-12	B-12	B-13	B-13	B-13	B-13
				Sample Name	B-11-5	B-11 (9-10)	B-12-5	B-12 (9-10)	B-12 (14-15)	B-12 (29-30.5)	B-13-5	B-13 (9-10)	B-13 (14-15)	B-13 (29-30)
				Sample Date	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023
				Sample Depth	5	9-10	5	9-10	14-15	29-30.5	5	9-10	14-15	29-30
				Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Semi-Volatile Organic Compounds (SVOCs)														
1,2,4-Trichlorobenzene	120-82-1	110	240	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
1,2-Dichlorobenzene	95-50-1	9400	7800	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
1,2-Dinitrobenzene	528-29-0	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
1,3-Dichlorobenzene	541-73-1	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
1,3-Dinitrobenzene	99-65-0	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
1,4-Dichlorobenzene	106-46-7	12	280	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
1,4-Dinitrobenzene	100-25-4	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
1-Methylnaphthalene	90-12-0	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
2,3,4,6-Tetrachlorophenol	58-90-2	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
2,3,5,6-Tetrachlorophenol	935-95-5	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
2,4,5-Trichlorophenol	95-95-4	120000	35000	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
2,4,6-Trichlorophenol	88-06-2	47	350	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
2,4-Dichlorophenol	120-83-2	3500	1100	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
2,4-Dimethylphenol	105-67-9	24000	7100	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
2,4-Dinitrophenol	51-28-5	2300	710	mg/kg	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720
2,4-Dinitrotoluene	121-14-2	11	79	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
2,6-Dichlorophenol	87-65-0	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
2,6-Dinitrotoluene	606-20-2	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
2-Chloronaphthalene	91-58-7	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
2-Chlorophenol	95-57-8	5800	1800	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
2-Methylnaphthalene	91-57-6	3000	670	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
2-Methylphenol (o-Cresol)	95-48-7	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
2-Nitrophenol	88-75-5	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
3,3-Dichlorobenzidine	91-94-1	2.7	20	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
3-/4-Methylphenol (p-/m-Cresol)	65794-96-9	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
4,6-Dinitro-2-methylphenol	534-52-1	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
4-Bromophenyl-phenylether	101-55-3	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
4-Chloro-3-methylphenol	59-50-7	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
4-Chlorophenyl-phenylether	7005-72-3	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
4-Nitrophenol	100-02-7	NS	NS	mg/kg	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720
Acenaphthene	83-32-9	45000	10000	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Acenaphthylene	208-96-8	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Anthracene	120-12-7	230000	50000	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Azobenzene	103-33-3	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Benzidine	92-87-5	NS	NS	mg/kg	NA	NA	NA	<0.147	NA	<0.147	NA	<0.147	NA	<0.147
Benzo(a)anthracene	56-55-3	20	110	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Benzo(a)pyrene	50-32-8	2.1	10	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Benzo(b)fluorathene	205-99-2	21	110	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Benzo(g,h,i)perylene	191-24-2	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
benzo(k)fluorathene	207-08-9	210	910	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Benzoic Acid	65-85-0	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
Benzyl Alcohol	100-51-6	NS	NS	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
Bis(2-Chloroethoxy)methane	111-91-1	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Bis(2-chloroethyl)ether	111-44-4	0.47	6.4	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Bis(2-chloroisopropyl)ether	108-60-1	23	270	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Bis(2-Ethylhexyl)phthalate	117-81-7	160	950	mg/kg	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720
Butylbenzylphthalate	85-68-7	NS	NS	mg/kg	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720
Carbazole	86-74-8	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Chrysene	218-01-9	2100	9100	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Dibenzo(a,h)anthracene	53-70-3	2.1	11	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Dibenzofuran	132-64-9	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Diethylphthalate	84-66-2	660000	150000	mg/kg	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720
Dimethyl phthalate	131-11-3	NS	NS	mg/kg	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720
Di-n-butylphthalate	84-74-2	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Di-n-Octylphthalate	117-84-0	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Diphenylamine	122-39-4	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Fluoranthene	206-44-0	30000	6700	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Fluorene	86-73-7	30000	6700	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Hexachloro-1,3-butadiene	87-68-3	5.3	100	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Hexachlorobenzene	118-74-1	0.78	7.7	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Hexachlorocyclopentadiene	77-47-4	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Hexachloroethane	67-72-1	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Indeno(1,2,3-c,d)pyrene	193-39-5	21	110	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Isophorone	78-59-1	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Naphthalene	91-20-3	17	400	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Nitrobenzene	98-95-3	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
N-Methyl-2-Pyrrolidone (NMP)	872-50-4	NS	NS	mg/kg	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720
N-Nitrosodimethylamine	62-75-9	NS	NS	mg/kg	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720
N-nitroso-di-n-propylamine	621-64-7	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Pentachlorophenol	87-86-5	4	20	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
Phenanthrene	85-01-8	NS	NS	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Phenol	108-95-2	350000	98000	mg/kg	NA	NA	NA	<0.288	NA	<0.288	NA	<0.288	NA	<0.288
Pyrene	129-00-0	23000	5000	mg/kg	NA	NA	NA	<0.144	NA	<0.144	NA	<0.144	NA	<0.144
Pyridine	110-86-1	NS	NS	mg/kg	NA	NA	NA	<0.720	NA	<0.720	NA	<0.720	NA	<0.720

ESL - Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, 2019 Re
mg/kg - miligrams per kilogram
NS - no standard
NA - not analyzed

Appendix D
Summary of Soil Analytical Results
3049, 3094, 3095, 3163, and 3200 East Vernon Avenue, Vernon, California

Analyte	CAS Number	Soil Direct Exposure Commercial/ Industrial ESL	Soil Direct Exposure Construction Worker: Any Land Use ESL	Location	B-1	B-1	B-2	B-2	B-2	B-2	B-3	B-3	B-3
				Sample Name	B-1-5	B-1-15	B-2-5	B-2 (9-10)	B-2 (14-15)	B-2 (29-30)	B-3-5	B-3-10	B-3-15
				Sample Date	05/04/2023	05/04/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/05/2023	05/05/2023	05/05/2023
				Sample Depth	5	15	5	9-10	14-15	29-30	5	10	15
				Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result
Pesticides													
4,4'-DDD	72-54-8	12	81	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA
4,4'-DDE	72-55-9	8.3	57	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA
4,4'-DDT	50-29-3	8.5	57	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA
Aldrin	309-00-2	0.15	7.4	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA
Alpha BHC (Alpha Hexachlorocyclohexane)	319-84-6	NS	NS	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA
Alpha Chlordane	5103-71-9	NS	NS	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA
Alpha Endosulfan	959-98-8	NS	NS	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA
Beta Bhc (Beta Hexachlorocyclohexane)	319-85-7	NS	NS	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA
Beta Endosulfan	33213-65-9	NS	NS	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA
Chlordane (Technical)	12789-03-6	2.2	14	mg/kg	<0.02 UJ	NA	<0.02 U	NA	NA	NA	<0.2 U	NA	NA
Delta Bhc (Delta Hexachlorocyclohexane)	319-86-8	NS	NS	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA
Dieldrin	60-57-1	0.16	1.1	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA
Endosulfan Sulfate	1031-07-8	NS	NS	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA
Endrin	72-20-8	290	74	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA
Endrin Aldehyde	7421-93-4	NS	NS	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA
Endrin Ketone	53494-70-5	NS	NS	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA
Gamma Bhc (Lindane)	58-89-9	2.5	16	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA
Gamma Chlordane (Trans)	5103-74-2	NS	NS	mg/kg	<0.003 UJ	NA	<0.003 U	NA	NA	NA	<0.03 U	NA	NA
Heptachlor	76-44-8	0.53	3.7	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA
Heptachlor Epoxide	1024-57-3	0.28	1.9	mg/kg	<0.002 UJ	NA	<0.002 U	NA	NA	NA	<0.02 U	NA	NA
Methoxychlor	72-43-5	4800	1200	mg/kg	<0.006 UJ	NA	<0.006 U	NA	NA	NA	<0.06 U	NA	NA
Toxaphene	8001-35-2	2.2	14	mg/kg	<0.05 UJ	NA	<0.05 U	NA	NA	NA	<0.5 U	NA	NA
Polychlorinated Biphenyl													
PCB-1016 (Aroclor 1016)	12674-11-2	NS	NS	mg/kg	NA	NA	<0.1 U	NA	NA	NA	NA	NA	NA
PCB-1221 (Aroclor 1221)	11104-28-2	NS	NS	mg/kg	NA	NA	<0.1 U	NA	NA	NA	NA	NA	NA
PCB-1232 (Aroclor 1232)	11141-16-5	NS	NS	mg/kg	NA	NA	<0.1 U	NA	NA	NA	NA	NA	NA
PCB-1242 (Aroclor 1242)	53469-21-9	NS	NS	mg/kg	NA	NA	<0.1 U	NA	NA	NA	NA	NA	NA
PCB-1248 (Aroclor 1248)	12672-29-6	NS	NS	mg/kg	NA	NA	<0.1 U	NA	NA	NA	NA	NA	NA
PCB-1254 (Aroclor 1254)	11097-69-1	NS	NS	mg/kg	NA	NA	<0.1 U	NA	NA	NA	NA	NA	NA
PCB-1260 (Aroclor 1260)	11096-82-5	NS	NS	mg/kg	NA	NA	<0.1 U	NA	NA	NA	NA	NA	NA
Metals													
Antimony	7440-36-0	160	50	mg/kg	<5 U	<5 U	<5 U	NA	<5 U	NA	<5 U	NA	<5 U
Arsenic	7440-38-2	**0.31**	0.98	mg/kg	**2.62**	<1.3 U	**2.81**	NA	<1.3 U	NA	**2.65**	NA	**2.79**
Barium	7440-39-3	220000	3000	mg/kg	171	43.2	148	NA	55.5 J	NA	111	NA	106
Beryllium	7440-41-7	230	27	mg/kg	<5 U	<5 U	<5 U	NA	<5 U	NA	<5 U	NA	<5 U
Cadmium	7440-43-9	1100	51	mg/kg	<0.75 U	<0.75 U	<0.75 U	NA	<0.75 U	NA	<0.75 U	NA	<0.75 U
Chromium, Hexavalent	18540-29-9	6.2	2.8	mg/kg	<0.01 U	<0.01 U	<0.01 U	NA	<0.01 U	NA	0.0903	NA	<0.01 U
Chromium, Total	7440-47-3	NS	NS	mg/kg	24.5	<5 U	21.8	NA	5.3	NA	19.4	NA	17
Cobalt	7440-48-4	350	28	mg/kg	13.8	<5 U	12.9	NA	<5 U	NA	9.8	NA	10.1
Copper	7440-50-8	47000	14000	mg/kg	28.9	<5 U	25.2	NA	<5 U	NA	30.7	NA	20.3
Lead	7439-92-1	**320**	160	mg/kg	10.2	<3 U	6.25	NA	<3 U	NA	8.55	NA	3.93
Mercury	7439-97-6	190	44	mg/kg	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 UJ	NA	<0.5 U	NA	<0.5 U
Molybdenum	7439-98-7	5800	1800	mg/kg	<5 U	<5 U	<5 U	NA	<5 U	NA	<5 U	NA	<5 U
Nickel	7440-02-0	11000	86	mg/kg	15.6	<5 U	14.3	NA	<5 U	NA	12.8	NA	11
Selenium	7782-49-2	5800	1700	mg/kg	<1.1 U	<1.1 U	<1.1 U	NA	<1.1 U	NA	<1.1 U	NA	<1.1 U
Silver	7440-22-4	5800	1800	mg/kg	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U
Thallium	7440-28-0	12	3.5	mg/kg	<5 U	<5 U	<5 U	NA	<5 U	NA	<5 U	NA	<5 U
Vanadium	7440-62-2	5800	470	mg/kg	53.5	13.8	54	NA	14.2	NA	42	NA	46.6
Zinc	7440-66-6	350000	110000	mg/kg	91.5	14.7	63.5	NA	17.6	NA	60.5	NA	48.1

ESL - Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, 2019 Rev. 2
mg/kg - miligrams per kilogram
NS - no standard
NA - not analyzed

Analyte	CAS Number	Soil Direct Exposure Commercial/ Industrial ESL	Soil Direct Exposure Construction Worker: Any Land Use ESL	Location	B-3	B-4	B-4	B-5	B-5	B-5	B-6	B-6	B-7
				Sample Name	B-3-30	B-4-6	B-4-15	B-5-5	B-5-15	B-5-30	B-6-5	B-6-15	B-7-6
				Sample Date	05/05/2023	05/03/2023	05/03/2023	05/03/2023	05/03/2023	05/03/2023	05/04/2023	05/04/2023	05/04/2023
				Sample Depth	30	6	15	5	15	30	5	15	6
				Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result
Pesticides													
4,4'-DDD	72-54-8	12	81	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	72-55-9	8.3	57	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	50-29-3	8.5	57	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	0.15	7.4	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha BHC (Alpha Hexachlorocyclohexane)	319-84-6	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha Chlordane	5103-71-9	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha Endosulfan	959-98-8	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beta Bhc (Beta Hexachlorocyclohexane)	319-85-7	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beta Endosulfan	33213-65-9	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlordane (Technical)	12789-03-6	2.2	14	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta Bhc (Delta Hexachlorocyclohexane)	319-86-8	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	0.16	1.1	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	290	74	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Bhc (Lindane)	58-89-9	2.5	16	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Chlordane (Trans)	5103-74-2	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	0.53	3.7	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	0.28	1.9	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	4800	1200	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	2.2	14	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated Biphenyl													
PCB-1016 (Aroclor 1016)	12674-11-2	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1221 (Aroclor 1221)	11104-28-2	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1232 (Aroclor 1232)	11141-16-5	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1242 (Aroclor 1242)	53469-21-9	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1248 (Aroclor 1248)	12672-29-6	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1254 (Aroclor 1254)	11097-69-1	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1260 (Aroclor 1260)	11096-82-5	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals													
Antimony	7440-36-0	160	50	mg/kg	NA	<5 U	<5 U	<5 U	<5 U	NA	<5 U	<5 U	<5 U
Arsenic	7440-38-2	**0.31**	0.98	mg/kg	NA	**1.83**	**1.68**	**2.23**	<1.3 U	NA	**2.2**	<1.3 U	**2.31**
Barium	7440-39-3	220000	3000	mg/kg	NA	108	84.5	89	51.5	NA	103	58	105
Beryllium	7440-41-7	230	27	mg/kg	NA	<5 U	<5 U	<5 U	<5 U	NA	<5 U	<5 U	<5 U
Cadmium	7440-43-9	1100	51	mg/kg	NA	<0.75 U	<0.75 U	<0.75 U	<0.75 U	NA	<0.75 U	<0.75 U	<0.75 U
Chromium, Hexavalent	18540-29-9	6.2	2.8	mg/kg	NA	<0.01 U	<0.01 U	<0.01 U	<0.01 U	NA	0.0124	<0.01 U	<0.01 U
Chromium, Total	7440-47-3	NS	NS	mg/kg	NA	13.5	14.1	16.3	7.15	NA	15.9	5.5	16.6
Cobalt	7440-48-4	350	28	mg/kg	NA	9	7.75	8.05	<5 U	NA	9.05	<5 U	8.8
Copper	7440-50-8	47000	14000	mg/kg	NA	12.1	15.8	21.4	5.5	NA	18.6	5.8	22.5
Lead	7439-92-1	**320**	160	mg/kg	NA	<3 U	<3 U	15.4	<3 U	NA	6.95	<3 U	24.1
Mercury	7439-97-6	190	44	mg/kg	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U
Molybdenum	7439-98-7	5800	1800	mg/kg	NA	<5 U	<5 U	<5 U	<5 U	NA	<5 U	<5 U	<5 U
Nickel	7440-02-0	11000	86	mg/kg	NA	8.5	7.6	9.8	<5 U	NA	9.15	<5 U	10.7
Selenium	7782-49-2	5800	1700	mg/kg	NA	<1.1 U	<1.1 U	<1.1 U	<1.1 U	NA	<1.1 U	<1.1 U	<1.1 U
Silver	7440-22-4	5800	1800	mg/kg	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U
Thallium	7440-28-0	12	3.5	mg/kg	NA	<5 U	<5 U	<5 U	<5 U	NA	<5 U	<5 U	<5 U
Vanadium	7440-62-2	5800	470	mg/kg	NA	36.2	37.2	40.5	27.9	NA	42.2	20.2	38.5
Zinc	7440-66-6	350000	110000	mg/kg	NA	45.6	39.6	60.5	22.6	NA	53.5	23.6	66

ESL - Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, 2019 Re
mg/kg - miligrams per kilogram
NS - no standard
NA - not analyzed

Analyte	CAS Number	Soil Direct Exposure Commercial/ Industrial ESL	Soil Direct Exposure Construction Worker: Any Land Use ESL	Location	B-7	B-7	B-8	B-8	B-8	B-9	B-9	B-10	B-10
				Sample Name	B-7-15	B-7-30	B-8-5	B-8-15	B-8-30	B-9-5	B-9-15	B-10-5	B-10-15
				Sample Date	05/04/2023	05/04/2023	05/05/2023	05/05/2023	05/05/2023	05/05/2023	05/05/2023	05/05/2023	05/05/2023
				Sample Depth	15	30	5	15	30	5	15	5	15
				Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result
Pesticides													
4,4'-DDD	72-54-8	12	81	mg/kg	NA	NA	<0.002 U	NA	NA	NA	NA	NA	NA
4,4'-DDE	72-55-9	8.3	57	mg/kg	NA	NA	<0.002 U	NA	NA	NA	NA	NA	NA
4,4'-DDT	50-29-3	8.5	57	mg/kg	NA	NA	<0.002 U	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	0.15	7.4	mg/kg	NA	NA	<0.002 U	NA	NA	NA	NA	NA	NA
Alpha BHC (Alpha Hexachlorocyclohexane)	319-84-6	NS	NS	mg/kg	NA	NA	<0.002 U	NA	NA	NA	NA	NA	NA
Alpha Chlordane	5103-71-9	NS	NS	mg/kg	NA	NA	<0.002 U	NA	NA	NA	NA	NA	NA
Alpha Endosulfan	959-98-8	NS	NS	mg/kg	NA	NA	<0.002 U	NA	NA	NA	NA	NA	NA
Beta Bhc (Beta Hexachlorocyclohexane)	319-85-7	NS	NS	mg/kg	NA	NA	<0.002 U	NA	NA	NA	NA	NA	NA
Beta Endosulfan	33213-65-9	NS	NS	mg/kg	NA	NA	<0.002 U	NA	NA	NA	NA	NA	NA
Chlordane (Technical)	12789-03-6	2.2	14	mg/kg	NA	NA	<0.02 U	NA	NA	NA	NA	NA	NA
Delta Bhc (Delta Hexachlorocyclohexane)	319-86-8	NS	NS	mg/kg	NA	NA	<0.002 U	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	0.16	1.1	mg/kg	NA	NA	<0.002 U	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	NS	NS	mg/kg	NA	NA	<0.002 U	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	290	74	mg/kg	NA	NA	<0.002 U	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	NS	NS	mg/kg	NA	NA	<0.002 U	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	NS	NS	mg/kg	NA	NA	<0.002 U	NA	NA	NA	NA	NA	NA
Gamma Bhc (Lindane)	58-89-9	2.5	16	mg/kg	NA	NA	<0.002 U	NA	NA	NA	NA	NA	NA
Gamma Chlordane (Trans)	5103-74-2	NS	NS	mg/kg	NA	NA	<0.003 U	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	0.53	3.7	mg/kg	NA	NA	<0.002 U	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	0.28	1.9	mg/kg	NA	NA	<0.002 U	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	4800	1200	mg/kg	NA	NA	<0.006 U	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	2.2	14	mg/kg	NA	NA	<0.05 U	NA	NA	NA	NA	NA	NA
Polychlorinated Biphenyl													
PCB-1016 (Aroclor 1016)	12674-11-2	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1221 (Aroclor 1221)	11104-28-2	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1232 (Aroclor 1232)	11141-16-5	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1242 (Aroclor 1242)	53469-21-9	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1248 (Aroclor 1248)	12672-29-6	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1254 (Aroclor 1254)	11097-69-1	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
PCB-1260 (Aroclor 1260)	11096-82-5	NS	NS	mg/kg	NA	NA	NA	NA	NA	NA	NA	NA	NA
Metals													
Antimony	7440-36-0	160	50	mg/kg	<5 U	NA	<5 U	<5 U	NA	<5 U	<5 U	<5 U	<5 U
Arsenic	7440-38-2	**0.31**	0.98	mg/kg	<1.3 U	NA	**1.54**	<1.3 U	NA	**3.22**	<1.3 U	**1.5**	**1.61**
Barium	7440-39-3	220000	3000	mg/kg	57.5	NA	82	60.5	NA	127	51.5	84	90.5
Beryllium	7440-41-7	230	27	mg/kg	<5 U	NA	<5 U	<5 U	NA	<5 U	<5 U	<5 U	<5 U
Cadmium	7440-43-9	1100	51	mg/kg	<0.75 U	NA	<0.75 U	<0.75 U	NA	<0.75 U	<0.75 U	<0.75 U	<0.75 U
Chromium, Hexavalent	18540-29-9	6.2	2.8	mg/kg	<0.01 U	NA	<0.01 U	<0.01 U	NA	<0.01 U	<0.01 U	<0.01 U	<0.01 U
Chromium, Total	7440-47-3	NS	NS	mg/kg	10.4	NA	12.2	9	NA	39.8	7.05	12	12.2
Cobalt	7440-48-4	350	28	mg/kg	<5 U	NA	7.6	5.9	NA	11	<5 U	7.35	8.2
Copper	7440-50-8	47000	14000	mg/kg	10.5	NA	9.5	7	NA	43.7	6.05	10.6	11.2
Lead	7439-92-1	**320**	160	mg/kg	5.7	NA	<3 U	<3 U	NA	36.2	<3 U	<3 U	<3 U
Mercury	7439-97-6	190	44	mg/kg	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
Molybdenum	7439-98-7	5800	1800	mg/kg	<5 U	NA	<5 U	<5 U	NA	<5 U	<5 U	<5 U	<5 U
Nickel	7440-02-0	11000	86	mg/kg	6.95	NA	6.75	<5 U	NA	46.6	<5 U	7.15	7.65
Selenium	7782-49-2	5800	1700	mg/kg	<1.1 U	NA	<1.1 U	<1.1 U	NA	<1.1 U	<1.1 U	<1.1 U	<1.1 U
Silver	7440-22-4	5800	1800	mg/kg	<0.5 U	NA	<0.5 U	<0.5 U	NA	<0.5 U	<0.5 U	<0.5 U	<0.5 U
Thallium	7440-28-0	12	3.5	mg/kg	<5 U	NA	<5 U	<5 U	NA	<5 U	<5 U	<5 U	<5 U
Vanadium	7440-62-2	5800	470	mg/kg	23.3	NA	38.7	34	NA	48.4	27.5	33.7	35.5
Zinc	7440-66-6	350000	110000	mg/kg	28.2	NA	37.9	26.7	NA	80.5	21.7	34.3	39.5

ESL - Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, 2019 Re
mg/kg - miligrams per kilogram
NS - no standard
NA - not analyzed

Appendix D
Summary of Soil Analytical Results
3049, 3094, 3095, 3163, and 3200 East Vernon Avenue, Vernon, California

Analyte	CAS Number	Soil Direct Exposure Commercial/ Industrial ESL	Soil Direct Exposure Construction Worker: Any Land Use ESL	Location	B-11	B-11	B-12	B-12	B-12	B-12	B-13	B-13	B-13	B-13
				Sample Name	B-11-5	B-11 (9-10)	B-12-5	B-12 (9-10)	B-12 (14-15)	B-12 (29-30.5)	B-13-5	B-13 (9-10)	B-13 (14-15)	B-13 (29-30)
				Sample Date	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023	05/08/2023
				Sample Depth	5	9-10	5	9-10	14-15	29-30.5	5	9-10	14-15	29-30
				Unit	Result	Result	Result	Result	Result	Result	Result	Result	Result	Result
Pesticides														
4,4'-DDD	72-54-8	12	81	mg/kg	<0.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDE	72-55-9	8.3	57	mg/kg	<0.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
4,4'-DDT	50-29-3	8.5	57	mg/kg	<0.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Aldrin	309-00-2	0.15	7.4	mg/kg	<0.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha BHC (Alpha Hexachlorocyclohexane)	319-84-6	NS	NS	mg/kg	<0.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha Chlordane	5103-71-9	NS	NS	mg/kg	<0.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Alpha Endosulfan	959-98-8	NS	NS	mg/kg	<0.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beta Bhc (Beta Hexachlorocyclohexane)	319-85-7	NS	NS	mg/kg	<0.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Beta Endosulfan	33213-65-9	NS	NS	mg/kg	<0.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Chlordane (Technical)	12789-03-6	2.2	14	mg/kg	<0.4 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Delta Bhc (Delta Hexachlorocyclohexane)	319-86-8	NS	NS	mg/kg	<0.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Dieldrin	60-57-1	0.16	1.1	mg/kg	<0.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endosulfan Sulfate	1031-07-8	NS	NS	mg/kg	<0.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin	72-20-8	290	74	mg/kg	<0.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Aldehyde	7421-93-4	NS	NS	mg/kg	<0.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Endrin Ketone	53494-70-5	NS	NS	mg/kg	<0.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Bhc (Lindane)	58-89-9	2.5	16	mg/kg	<0.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Chlordane (Trans)	5103-74-2	NS	NS	mg/kg	<0.06 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor	76-44-8	0.53	3.7	mg/kg	<0.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Heptachlor Epoxide	1024-57-3	0.28	1.9	mg/kg	<0.04 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Methoxychlor	72-43-5	4800	1200	mg/kg	<0.12 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Toxaphene	8001-35-2	2.2	14	mg/kg	<1 U	NA	NA	NA	NA	NA	NA	NA	NA	NA
Polychlorinated Biphenyl														
PCB-1016 (Aroclor 1016)	12674-11-2	NS	NS	mg/kg	<0.1 U	NA	<0.1 U	NA	NA	NA	<0.1 U	NA	NA	NA
PCB-1221 (Aroclor 1221)	11104-28-2	NS	NS	mg/kg	<0.1 U	NA	<0.1 U	NA	NA	NA	<0.1 U	NA	NA	NA
PCB-1232 (Aroclor 1232)	11141-16-5	NS	NS	mg/kg	<0.1 U	NA	<0.1 U	NA	NA	NA	<0.1 U	NA	NA	NA
PCB-1242 (Aroclor 1242)	53469-21-9	NS	NS	mg/kg	<0.1 U	NA	<0.1 U	NA	NA	NA	<0.1 U	NA	NA	NA
PCB-1248 (Aroclor 1248)	12672-29-6	NS	NS	mg/kg	<0.1 U	NA	<0.1 U	NA	NA	NA	<0.1 U	NA	NA	NA
PCB-1254 (Aroclor 1254)	11097-69-1	NS	NS	mg/kg	<0.1 U	NA	<0.1 U	NA	NA	NA	<0.1 U	NA	NA	NA
PCB-1260 (Aroclor 1260)	11096-82-5	NS	NS	mg/kg	<0.1 U	NA	<0.1 U	NA	NA	NA	<0.1 U	NA	NA	NA
Metals														
Antimony	7440-36-0	160	50	mg/kg	<5 U	24.4	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA
Arsenic	7440-38-2	**0.31**	0.98	mg/kg	**3.44**	**34.4**	<1.3 U	NA	<1.3 U	NA	<1.3 U	NA	<1.3 U	NA
Barium	7440-39-3	220000	3000	mg/kg	105	1,020	55.5	NA	42.3	NA	61.5	NA	45.5	NA
Beryllium	7440-41-7	230	27	mg/kg	<5 U	<5 U	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA
Cadmium	7440-43-9	1100	51	mg/kg	<0.75 U	3.64	<0.75 U	NA	<0.75 U	NA	<0.75 U	NA	<0.75 U	NA
Chromium, Hexavalent	18540-29-9	6.2	2.8	mg/kg	<0.01 U	0.249	<0.01 U	NA	<0.01 U	NA	<0.01 U	NA	<0.01 U	NA
Chromium, Total	7440-47-3	NS	NS	mg/kg	13.9	42.9	8.35	NA	14.7	NA	8.3	NA	6.15	NA
Cobalt	7440-48-4	350	28	mg/kg	8	13.9	5.05	NA	<5 U	NA	5.5	NA	<5 U	NA
Copper	7440-50-8	47000	14000	mg/kg	45.8	800	7.6	NA	5	NA	6.85	NA	<5 U	NA
Lead	7439-92-1	**320**	160	mg/kg	89.5	**1,110**	<3 U	NA	<3 U	NA	<3 U	NA	<3 U	NA
Mercury	7439-97-6	190	44	mg/kg	<0.5 U	0.61	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
Molybdenum	7439-98-7	5800	1800	mg/kg	<5 U	<5 U	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA
Nickel	7440-02-0	11000	86	mg/kg	11.3	136	<5 U	NA	<5 U	NA	5.15	NA	<5 U	NA
Selenium	7782-49-2	5800	1700	mg/kg	<1.1 U	<1.1 U	<1.1 U	NA	<1.1 U	NA	<1.1 U	NA	<1.1 U	NA
Silver	7440-22-4	5800	1800	mg/kg	<0.5 U	2.89	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA	<0.5 U	NA
Thallium	7440-28-0	12	3.5	mg/kg	<5 U	<5 U	<5 U	NA	<5 U	NA	<5 U	NA	<5 U	NA
Vanadium	7440-62-2	5800	470	mg/kg	40.3	69.5	25.3	NA	21.1	NA	26.3	NA	19.1	NA
Zinc	7440-66-6	350000	110000	mg/kg	93.5	1,150	24.6	NA	18.8	NA	26.9	NA	19.8	NA

ESL - Environmental Screening Levels, San Francisco Bay Regional Water Quality Control Board, 2019 Rev
mg/kg - miligrams per kilogram
NS - no standard
NA - not analyzed

APPENDIX B

Torrent
LABORATORY, INC.

Langan
135 Main Street, Suite 1500
San Francisco, California 94105
Tel: 415.955.5200

RE: VERNON

Work Order No.: 2305105 Rev: 2

Dear Nick Cutler:

Torrent Laboratory, Inc. received 22 sample(s) on May 12, 2023 for the analyses presented in the following Report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.

Torrent Laboratory, Inc. is certified by the State of California, ELAP #1991. If you have any questions regarding these test results, please feel free to contact the Project Management Team at (408)263-5258; ext 204.



Kathie Evans
Project Manager

May 19, 2023
Date

Torrent LABORATORY, INC.

Date: 5/19/2023

Client: Langan

Project: VERNON

Work Order: 2305105

CASE NARRATIVE

Unless otherwise indicated in the following narrative, no issues encountered with the receiving, preparation, analysis or reporting of the results associated with this work order.

Unless otherwise indicated in the following narrative, no results have been method and/or field blank corrected.

Reported results relate only to the items/samples tested by the laboratory.

This report shall not be reproduced, except in full, without the written approval of Torrent Laboratory, Inc.

REVISIONS

Report revised to include additionally requested data.

Analytical Comments for method 6010B, 2305105-003 MS/MSD, QC Preparation Batch ID 1151065, Note:The % recoveries for Barium are outside of laboratory control limits but % RPD is within limits. The associated LCS/LCSD is within both % Recovery and % RPD limits. No corrective action required.

Analytical Comments for method 6010B, 2305105-003 MS/MSD, QC Preparation Batch ID 1151065, Note:The % recoveries for Mercury are outside of laboratory control limits but % RPD is within limits. The associated LCS/LCSD is within both % Recovery and % RPD limits. No corrective action required.

Rev. 1 (5/19/23)

Report revised to include additionally requested SVOC and VOC data.

Rev. 2 (5/23/23)

Torrent LABORATORY, INC.

Sample Result Summary

Report prepared for: Nick Cutler
Langan

Date Received: 05/12/23
Date Reported: 05/19/23

B-2-5 2305105-001

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	2.81	mg/Kg
Barium	SW6010B	1	0.055	5.00	148	mg/Kg
Chromium	SW6010B	1	0.075	5.00	21.8	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	12.9	mg/Kg
Copper	SW6010B	1	0.20	5.00	25.2	mg/Kg
Lead	SW6010B	1	0.10	3.00	6.25	mg/Kg
Nickel	SW6010B	1	0.50	5.00	14.3	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	54.0	mg/Kg
Zinc	SW6010B	1	0.30	5.00	63.5	mg/Kg

B-2 (9-10) 2305105-002

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

B-2 (14-15) 2305105-003

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Barium	SW6010B	1	0.055	5.00	55.5	mg/Kg
Chromium	SW6010B	1	0.075	5.00	5.30	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	14.2	mg/Kg
Zinc	SW6010B	1	0.30	5.00	17.6	mg/Kg

B-2 (29-30) 2305105-006

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

B-11-5 2305105-007

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	3.44	mg/Kg
Barium	SW6010B	1	0.055	5.00	105	mg/Kg
Chromium	SW6010B	1	0.075	5.00	13.9	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	8.00	mg/Kg
Copper	SW6010B	1	0.20	5.00	45.8	mg/Kg
Lead	SW6010B	1	0.10	3.00	89.5	mg/Kg
Nickel	SW6010B	1	0.50	5.00	11.3	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	40.3	mg/Kg
Zinc	SW6010B	1	0.30	5.00	93.5	mg/Kg

Torrent LABORATORY, INC.

Sample Result Summary

Report prepared for: Nick Cutler
Langan

Date Received: 05/12/23
Date Reported: 05/19/23

B-11 (9-10) 2305105-008

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Antimony	SW6010B	1	0.050	5.00	24.4	mg/Kg
Arsenic	SW6010B	1	0.15	1.30	34.4	mg/Kg
Barium	SW6010B	1	0.055	5.00	1020	mg/Kg
Cadmium	SW6010B	1	0.10	0.750	3.64	mg/Kg
Chromium	SW6010B	1	0.075	5.00	42.9	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	13.9	mg/Kg
Copper	SW6010B	1	0.20	5.00	800	mg/Kg
Lead	SW6010B	1	0.10	3.00	1110	mg/Kg
Nickel	SW6010B	1	0.50	5.00	136	mg/Kg
Silver	SW6010B	1	0.15	0.500	2.89	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	69.5	mg/Kg
Zinc	SW6010B	1	0.30	5.00	1150	mg/Kg
Hexavalent Chromium	SW7199	1	3.1	10	249	ug/Kg
Mercury	SW7471B	1	0.083	0.50	0.61	mg/Kg

B-12-5 2305105-009

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Barium	SW6010B	1	0.055	5.00	55.5	mg/Kg
Chromium	SW6010B	1	0.075	5.00	8.35	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	5.05	mg/Kg
Copper	SW6010B	1	0.20	5.00	7.60	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	25.3	mg/Kg
Zinc	SW6010B	1	0.30	5.00	24.6	mg/Kg

B-12 (9-10) 2305105-010

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

B-12 (14-15) 2305105-011

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Barium	SW6010B	1	0.055	5.00	42.3	mg/Kg
Chromium	SW6010B	1	0.075	5.00	14.7	mg/Kg
Copper	SW6010B	1	0.20	5.00	5.00	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	21.1	mg/Kg
Zinc	SW6010B	1	0.30	5.00	18.8	mg/Kg

Torrent LABORATORY, INC.

Sample Result Summary

Report prepared for: Nick Cutler
Langan

Date Received: 05/12/23
Date Reported: 05/19/23

B-13-5 2305105-014

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Barium	SW6010B	1	0.055	5.00	61.5	mg/Kg
Chromium	SW6010B	1	0.075	5.00	8.30	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	5.50	mg/Kg
Copper	SW6010B	1	0.20	5.00	6.85	mg/Kg
Nickel	SW6010B	1	0.50	5.00	5.15	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	26.3	mg/Kg
Zinc	SW6010B	1	0.30	5.00	26.9	mg/Kg

B-13 (9-10) 2305105-015

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

B-13 (14-15) 2305105-016

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Barium	SW6010B	1	0.055	5.00	45.5	mg/Kg
Chromium	SW6010B	1	0.075	5.00	6.15	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	19.1	mg/Kg
Zinc	SW6010B	1	0.30	5.00	19.8	mg/Kg

B-13 (29-30) 2305105-019

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

B-12 (29-30.5) 2305105-022

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2-5	**Lab Sample ID:**	2305105-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:03		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151158	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	12:37	PH	474858

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2-5	**Lab Sample ID:**	2305105-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:03		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/16/23	12:20:00PM
Prep Batch ID:	1150991	**Prep Analyst:**	AJNG	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/17/23	13:24	BJAY	474739

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2-5	**Lab Sample ID:**	2305105-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:03		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/16/23 12:15:00PM
Prep Batch ID:	1150990	**Prep Analyst:**	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/16/23	20:39	AT	474758
Arsenic	SW6010B	1	0.15	1.30	**2.81**		mg/Kg	05/16/23	20:39	AT	474758
Barium	SW6010B	1	0.055	5.00	**148**		mg/Kg	05/16/23	20:39	AT	474758
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/16/23	20:39	AT	474758
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/16/23	20:39	AT	474758
Chromium	SW6010B	1	0.075	5.00	**21.8**		mg/Kg	05/16/23	20:39	AT	474758
Cobalt	SW6010B	1	0.070	5.00	**12.9**		mg/Kg	05/16/23	20:39	AT	474758
Copper	SW6010B	1	0.20	5.00	**25.2**		mg/Kg	05/16/23	20:39	AT	474758
Lead	SW6010B	1	0.10	3.00	**6.25**		mg/Kg	05/16/23	20:39	AT	474758
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/16/23	20:39	AT	474758
Nickel	SW6010B	1	0.50	5.00	**14.3**		mg/Kg	05/16/23	20:39	AT	474758
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/16/23	20:39	AT	474758
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/16/23	20:39	AT	474758
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/16/23	20:39	AT	474758
Vanadium	SW6010B	1	0.10	5.00	**54.0**		mg/Kg	05/16/23	20:39	AT	474758
Zinc	SW6010B	1	0.30	5.00	**63.5**		mg/Kg	05/16/23	20:39	AT	474758

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2-5	**Lab Sample ID:**	2305105-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:03		
SDG:			

Prep Method:	3546_PCB	**Prep Batch Date/Time:**	5/16/23 9:41:00AM
Prep Batch ID:	1150974	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Aroclor1016	SW8082A	1	35.0	100	ND		ug/Kg	05/16/23	11:46	AK	474707
Aroclor1221	SW8082A	1	5.00	100	ND		ug/Kg	05/16/23	11:46	AK	474707
Aroclor1232	SW8082A	1	17.0	100	ND		ug/Kg	05/16/23	11:46	AK	474707
Aroclor1242	SW8082A	1	3.00	100	ND		ug/Kg	05/16/23	11:46	AK	474707
Aroclor1248	SW8082A	1	2.00	100	ND		ug/Kg	05/16/23	11:46	AK	474707
Aroclor1254	SW8082A	1	14.0	100	ND		ug/Kg	05/16/23	11:46	AK	474707
Aroclor1260	SW8082A	1	24.0	100	ND		ug/Kg	05/16/23	11:46	AK	474707
			Acceptance Limits								
TCMX (S)	SW8082A		48 - 125		**99.0**		%	05/16/23	11:46	AK	474707
DCBP (S)	SW8082A		48 - 135		**93.0**		%	05/16/23	11:46	AK	474707

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2-5	**Lab Sample ID:**	2305105-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:03		
SDG:			

Prep Method:	3546_OCP	**Prep Batch Date/Time:**	5/13/23 10:20:00AM
Prep Batch ID:	1150929	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
alpha-BHC	SW8081B	1	0.25	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
gamma-BHC (Lindane)	SW8081B	1	0.71	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
beta-BHC	SW8081B	1	0.44	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
delta-BHC	SW8081B	1	0.65	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
Heptachlor	SW8081B	1	0.27	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
Aldrin	SW8081B	1	0.29	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
Heptachlor Epoxide	SW8081B	1	0.31	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
gamma-Chlordane	SW8081B	1	1.5	3.0	ND		ug/Kg	05/13/23	21:05	LA	474648
alpha-Chlordane	SW8081B	1	0.36	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
4,4'-DDE	SW8081B	1	0.61	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
Endosulfan I	SW8081B	1	0.29	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
Dieldrin	SW8081B	1	0.25	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
Endrin	SW8081B	1	0.79	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
4,4'-DDD	SW8081B	1	0.64	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
Endosulfan II	SW8081B	1	0.34	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
4,4'-DDT	SW8081B	1	0.74	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
Endrin Aldehyde	SW8081B	1	0.51	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
Methoxychlor	SW8081B	1	2.6	6.0	ND		ug/Kg	05/13/23	21:05	LA	474648
Endosulfan Sulfate	SW8081B	1	0.51	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
Endrin Ketone	SW8081B	1	0.43	2.0	ND		ug/Kg	05/13/23	21:05	LA	474648
Chlordane, Technical	SW8081B	1	2.7	20	ND		ug/Kg	05/13/23	21:05	LA	474648
Toxaphene	SW8081B	1	22	50	ND		ug/Kg	05/13/23	21:05	LA	474648
			Acceptance Limits								
Tetrachloro-M-Xylene (S)	SW8081B		48 - 125		**84.0**		%	05/13/23	21:05	LA	474648
Decachlorobiphenyl (S)	SW8081B		38 - 135		**82.7**		%	05/13/23	21:05	LA	474648

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2 (9-10)	**Lab Sample ID:**	2305105-002A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:14		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
N-Nitrosodimethylamine	SW8270C	1	46.9	720	ND		ug/Kg	05/22/23	15:11	MT	474888
Phenol	SW8270C	1	43.8	288	ND		ug/Kg	05/22/23	15:11	MT	474888
Bis(2-chloroethyl)ether	SW8270C	1	13.3	144	ND		ug/Kg	05/22/23	15:11	MT	474888
2-Chlorophenol	SW8270C	1	47.7	288	ND		ug/Kg	05/22/23	15:11	MT	474888
1,3-Dichlorobenzene	SW8270C	1	13.1	144	ND		ug/Kg	05/22/23	15:11	MT	474888
1,4-Dichlorobenzene	SW8270C	1	14.6	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Benzyl Alcohol	SW8270C	1	20.5	288	ND		ug/Kg	05/22/23	15:11	MT	474888
1,2-Dichlorobenzene	SW8270C	1	13.5	144	ND		ug/Kg	05/22/23	15:11	MT	474888
2-Methylphenol (o-Cresol)	SW8270C	1	29.3	288	ND		ug/Kg	05/22/23	15:11	MT	474888
N-Methyl-2-Pyrrolidone (NMP)	SW8270C	1	68.0	720	ND		ug/Kg	05/22/23	15:11	MT	474888
3-/4-Methylphenol (p-/m-Cresol)	SW8270C	1	31.3	288	ND		ug/Kg	05/22/23	15:11	MT	474888
N-nitroso-di-n-propylamine	SW8270C	1	13.2	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Hexachloroethane	SW8270C	1	17.1	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Nitrobenzene	SW8270C	1	12.8	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Isophorone	SW8270C	1	12.2	144	ND		ug/Kg	05/22/23	15:11	MT	474888
2-Nitrophenol	SW8270C	1	25.4	288	ND		ug/Kg	05/22/23	15:11	MT	474888
2,4-Dimethylphenol	SW8270C	1	22.8	288	ND		ug/Kg	05/22/23	15:11	MT	474888
Benzoic Acid	SW8270C	1	41.7	288	ND		ug/Kg	05/22/23	15:11	MT	474888
Bis(2-Chloroethoxy)methane	SW8270C	1	9.79	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Bis(2-chloroisopropyl)ether	SW8270C	1	12.6	144	ND		ug/Kg	05/22/23	15:11	MT	474888
2,4-Dichlorophenol	SW8270C	1	39.3	288	ND		ug/Kg	05/22/23	15:11	MT	474888
1,2,4-Trichlorobenzene	SW8270C	1	11.8	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Naphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/22/23	15:11	MT	474888
2,6-Dichlorophenol	SW8270C	1	35.8	288	ND		ug/Kg	05/22/23	15:11	MT	474888
Hexachloro-1,3-butadiene	SW8270C	1	8.34	144	ND		ug/Kg	05/22/23	15:11	MT	474888
4-Chloro-3-methylphenol	SW8270C	1	33.8	288	ND		ug/Kg	05/22/23	15:11	MT	474888
2-Methylnaphthalene	SW8270C	1	10.4	144	ND		ug/Kg	05/22/23	15:11	MT	474888
1-Methylnaphthalene	SW8270C	1	12.2	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Hexachlorocyclopentadiene	SW8270C	1	12.9	144	ND		ug/Kg	05/22/23	15:11	MT	474888
2,4,6-Trichlorophenol	SW8270C	1	35.9	288	ND		ug/Kg	05/22/23	15:11	MT	474888
2,4,5-Trichlorophenol	SW8270C	1	33.4	288	ND		ug/Kg	05/22/23	15:11	MT	474888
2-Chloronaphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/22/23	15:11	MT	474888
1,4-Dinitrobenzene	SW8270C	1	10.3	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Dimethyl phthalate	SW8270C	1	14.2	720	ND		ug/Kg	05/22/23	15:11	MT	474888
1,3-Dinitrobenzene	SW8270C	1	10.4	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Acenaphthylene	SW8270C	1	8.28	144	ND		ug/Kg	05/22/23	15:11	MT	474888
2,6-Dinitrotoluene	SW8270C	1	11.3	144	ND		ug/Kg	05/22/23	15:11	MT	474888
1,2-Dinitrobenzene	SW8270C	1	15.8	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Acenaphthene	SW8270C	1	10.7	144	ND		ug/Kg	05/22/23	15:11	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2 (9-10)	**Lab Sample ID:**	2305105-002A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:14		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2,4-Dinitrophenol	SW8270C	1	77.6	720	ND		ug/Kg	05/22/23	15:11	MT	474888
4-Nitrophenol	SW8270C	1	54.7	720	ND		ug/Kg	05/22/23	15:11	MT	474888
Dibenzofuran	SW8270C	1	11.2	144	ND		ug/Kg	05/22/23	15:11	MT	474888
2,4-Dinitrotoluene	SW8270C	1	12.1	144	ND		ug/Kg	05/22/23	15:11	MT	474888
2,3,5,6-Tetrachlorophenol	SW8270C	1	27.6	288	ND		ug/Kg	05/22/23	15:11	MT	474888
2,3,4,6-Tetrachlorophenol	SW8270C	1	31.5	288	ND		ug/Kg	05/22/23	15:11	MT	474888
Diethylphthalate	SW8270C	1	13.6	720	ND		ug/Kg	05/22/23	15:11	MT	474888
Fluorene	SW8270C	1	10.3	144	ND		ug/Kg	05/22/23	15:11	MT	474888
4-Chlorophenyl-phenylether	SW8270C	1	9.32	144	ND		ug/Kg	05/22/23	15:11	MT	474888
4,6-Dinitro-2-methylphenol	SW8270C	1	13.4	288	ND		ug/Kg	05/22/23	15:11	MT	474888
Diphenylamine	SW8270C	1	13.0	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Azobenzene	SW8270C	1	114	144	ND		ug/Kg	05/22/23	15:11	MT	474888
4-Bromophenyl-phenylether	SW8270C	1	8.23	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Hexachlorobenzene	SW8270C	1	8.66	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Pentachlorophenol	SW8270C	1	25.0	288	ND		ug/Kg	05/22/23	15:11	MT	474888
Phenanthrene	SW8270C	1	9.32	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Anthracene	SW8270C	1	8.91	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Carbazole	SW8270C	1	10.7	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Di-n-butylphthalate	SW8270C	1	13.5	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Fluoranthene	SW8270C	1	10.0	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Benzidine	SW8270C	1	147	147	ND		ug/Kg	05/22/23	15:11	MT	474888
Pyrene	SW8270C	1	12.0	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Butylbenzylphthalate	SW8270C	1	21.0	720	ND		ug/Kg	05/22/23	15:11	MT	474888
Benzo(a)anthracene	SW8270C	1	9.80	144	ND		ug/Kg	05/22/23	15:11	MT	474888
3,3-Dichlorobenzidine	SW8270C	1	118	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Chrysene	SW8270C	1	15.2	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Bis(2-Ethylhexyl)phthalate	SW8270C	1	15.3	720	ND		ug/Kg	05/22/23	15:11	MT	474888
Di-n-Octylphthalate	SW8270C	1	12.3	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Benzo(b)fluorathene	SW8270C	1	12.0	144	ND		ug/Kg	05/22/23	15:11	MT	474888
benzo(k)fluorathene	SW8270C	1	8.16	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Benzo(a)pyrene	SW8270C	1	9.80	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Indeno(1,2,3-c,d)pyrene	SW8270C	1	13.8	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Dibenzo(a,h)anthracene	SW8270C	1	12.7	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Benzo(g,h,i)perylene	SW8270C	1	16.7	144	ND		ug/Kg	05/22/23	15:11	MT	474888
Pyridine	SW8270C	1	43.8	720	ND		ug/Kg	05/22/23	15:11	MT	474888
			Acceptance Limits								
2-Fluorophenol (S)	SW8270C		25 - 121		**72.3**		%	05/22/23	15:11	MT	474888
Phenol-d6 (S)	SW8270C		24 - 113		**63.1**		%	05/22/23	15:11	MT	474888
2,4,6-Tribromophenol (S)	SW8270C		19 - 122		**70.1**		%	05/22/23	15:11	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2 (9-10)	**Lab Sample ID:**	2305105-002A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:14		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23	11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2-Fluorobiphenyl (S)	SW8270C		45 - 143		**75.9**		%	05/22/23	15:11	MT	474888
Nitrobenzene-d5 (S)	SW8270C		23 - 120		**61.7**		%	05/22/23	15:11	MT	474888
p-Terphenyl-d14 (S)	SW8270C		18 - 137		**84.5**		%	05/22/23	15:11	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2 (9-10)	**Lab Sample ID:**	2305105-002A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:14		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/20/23 11:00:00AM
Prep Batch ID:	1151199	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	1.2	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Chloromethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Vinyl Chloride	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Bromomethane	SW8260B	1	2.7	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Chloroethane	SW8260B	1	3.0	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Trichlorofluoromethane	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,1-Dichloroethene	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Freon 113	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Methylene Chloride	SW8260B	1	7.1	10	ND		ug/Kg	05/20/23	19:32	BP	474889
trans-1,2-Dichloroethene	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	19:32	BP	474889
MTBE	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	19:32	BP	474889
TBA	SW8260B	1	12	50	ND		ug/Kg	05/20/23	19:32	BP	474889
Diisopropyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,1-Dichloroethane	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Ethyl tert-Butyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	19:32	BP	474889
cis-1,2-Dichloroethene	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	19:32	BP	474889
2,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Bromochloromethane	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Chloroform	SW8260B	1	2.4	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Carbon Tetrachloride	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,1,1-Trichloroethane	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,1-Dichloropropene	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Benzene	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	19:32	BP	474889
TAME	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,2-Dichloroethane	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Trichloroethene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Dibromomethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Bromodichloromethane	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	19:32	BP	474889
cis-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Toluene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Tetrachloroethene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	19:32	BP	474889
trans-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,1,2-Trichloroethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Dibromochloromethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,3-Dichloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,2-Dibromoethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Chlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Ethylbenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	19:32	BP	474889

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2 (9-10)	**Lab Sample ID:**	2305105-002A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:14		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/20/23 11:00:00AM
Prep Batch ID:	1151199	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	19:32	BP	474889
m,p-Xylene	SW8260B	1	3.2	10	ND		ug/Kg	05/20/23	19:32	BP	474889
o-Xylene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Styrene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Bromoform	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Isopropyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	19:32	BP	474889
n-Propylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Bromobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,1,2,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	19:32	BP	474889
2-Chlorotoluene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,3,5-Trimethylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,2,3-Trichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	19:32	BP	474889
4-Chlorotoluene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	19:32	BP	474889
tert-Butylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,2,4-Trimethylbenzene	SW8260B	1	1.4	10	ND		ug/Kg	05/20/23	19:32	BP	474889
sec-Butyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	19:32	BP	474889
p-Isopropyltoluene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,3-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,4-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	19:32	BP	474889
n-Butylbenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,2-Dichlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,2-Dibromo-3-Chloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Hexachlorobutadiene	SW8260B	1	1.4	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,2,4-Trichlorobenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	19:32	BP	474889
Naphthalene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	19:32	BP	474889
1,2,3-Trichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	19:32	BP	474889
2-Butanone	SW8260B	1	2.3	10.0	ND		ug/Kg	05/20/23	19:32	BP	474889
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**121**		%	05/20/23	19:32	BP	474889
(S) Toluene-d8	SW8260B		55.2 - 133		**104**		%	05/20/23	19:32	BP	474889
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**100**		%	05/20/23	19:32	BP	474889

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2 (14-15)	**Lab Sample ID:**	2305105-003A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:20		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	7:17	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2 (14-15)	**Lab Sample ID:**	2305105-003A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:20		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/17/23 7:15:00PM
Prep Batch ID:	1151067	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/18/23	13:15	BJAY	474773

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2 (14-15)	**Lab Sample ID:**	2305105-003A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:20		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/17/23 7:00:00PM
Prep Batch ID:	1151065	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:09	AT	474846
Arsenic	SW6010B	1	0.15	1.30	ND		mg/Kg	05/18/23	20:09	AT	474846
Barium	SW6010B	1	0.055	5.00	**55.5**		mg/Kg	05/18/23	20:09	AT	474846
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/18/23	20:09	AT	474846
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/18/23	20:09	AT	474846
Chromium	SW6010B	1	0.075	5.00	**5.30**		mg/Kg	05/18/23	20:09	AT	474846
Cobalt	SW6010B	1	0.070	5.00	ND		mg/Kg	05/18/23	20:09	AT	474846
Copper	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:09	AT	474846
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/18/23	20:09	AT	474846
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:09	AT	474846
Nickel	SW6010B	1	0.50	5.00	ND		mg/Kg	05/18/23	20:09	AT	474846
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/18/23	20:09	AT	474846
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/18/23	20:09	AT	474846
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:09	AT	474846
Vanadium	SW6010B	1	0.10	5.00	**14.2**		mg/Kg	05/18/23	20:09	AT	474846
Zinc	SW6010B	1	0.30	5.00	**17.6**		mg/Kg	05/18/23	20:09	AT	474846

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2 (29-30)	**Lab Sample ID:**	2305105-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:32		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
N-Nitrosodimethylamine	SW8270C	1	46.9	720	ND		ug/Kg	05/22/23	15:41	MT	474888
Phenol	SW8270C	1	43.8	288	ND		ug/Kg	05/22/23	15:41	MT	474888
Bis(2-chloroethyl)ether	SW8270C	1	13.3	144	ND		ug/Kg	05/22/23	15:41	MT	474888
2-Chlorophenol	SW8270C	1	47.7	288	ND		ug/Kg	05/22/23	15:41	MT	474888
1,3-Dichlorobenzene	SW8270C	1	13.1	144	ND		ug/Kg	05/22/23	15:41	MT	474888
1,4-Dichlorobenzene	SW8270C	1	14.6	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Benzyl Alcohol	SW8270C	1	20.5	288	ND		ug/Kg	05/22/23	15:41	MT	474888
1,2-Dichlorobenzene	SW8270C	1	13.5	144	ND		ug/Kg	05/22/23	15:41	MT	474888
2-Methylphenol (o-Cresol)	SW8270C	1	29.3	288	ND		ug/Kg	05/22/23	15:41	MT	474888
N-Methyl-2-Pyrrolidone (NMP)	SW8270C	1	68.0	720	ND		ug/Kg	05/22/23	15:41	MT	474888
3-/4-Methylphenol (p-/m-Cresol)	SW8270C	1	31.3	288	ND		ug/Kg	05/22/23	15:41	MT	474888
N-nitroso-di-n-propylamine	SW8270C	1	13.2	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Hexachloroethane	SW8270C	1	17.1	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Nitrobenzene	SW8270C	1	12.8	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Isophorone	SW8270C	1	12.2	144	ND		ug/Kg	05/22/23	15:41	MT	474888
2-Nitrophenol	SW8270C	1	25.4	288	ND		ug/Kg	05/22/23	15:41	MT	474888
2,4-Dimethylphenol	SW8270C	1	22.8	288	ND		ug/Kg	05/22/23	15:41	MT	474888
Benzoic Acid	SW8270C	1	41.7	288	ND		ug/Kg	05/22/23	15:41	MT	474888
Bis(2-Chloroethoxy)methane	SW8270C	1	9.79	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Bis(2-chloroisopropyl)ether	SW8270C	1	12.6	144	ND		ug/Kg	05/22/23	15:41	MT	474888
2,4-Dichlorophenol	SW8270C	1	39.3	288	ND		ug/Kg	05/22/23	15:41	MT	474888
1,2,4-Trichlorobenzene	SW8270C	1	11.8	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Naphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/22/23	15:41	MT	474888
2,6-Dichlorophenol	SW8270C	1	35.8	288	ND		ug/Kg	05/22/23	15:41	MT	474888
Hexachloro-1,3-butadiene	SW8270C	1	8.34	144	ND		ug/Kg	05/22/23	15:41	MT	474888
4-Chloro-3-methylphenol	SW8270C	1	33.8	288	ND		ug/Kg	05/22/23	15:41	MT	474888
2-Methylnaphthalene	SW8270C	1	10.4	144	ND		ug/Kg	05/22/23	15:41	MT	474888
1-Methylnaphthalene	SW8270C	1	12.2	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Hexachlorocyclopentadiene	SW8270C	1	12.9	144	ND		ug/Kg	05/22/23	15:41	MT	474888
2,4,6-Trichlorophenol	SW8270C	1	35.9	288	ND		ug/Kg	05/22/23	15:41	MT	474888
2,4,5-Trichlorophenol	SW8270C	1	33.4	288	ND		ug/Kg	05/22/23	15:41	MT	474888
2-Chloronaphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/22/23	15:41	MT	474888
1,4-Dinitrobenzene	SW8270C	1	10.3	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Dimethyl phthalate	SW8270C	1	14.2	720	ND		ug/Kg	05/22/23	15:41	MT	474888
1,3-Dinitrobenzene	SW8270C	1	10.4	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Acenaphthylene	SW8270C	1	8.28	144	ND		ug/Kg	05/22/23	15:41	MT	474888
2,6-Dinitrotoluene	SW8270C	1	11.3	144	ND		ug/Kg	05/22/23	15:41	MT	474888
1,2-Dinitrobenzene	SW8270C	1	15.8	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Acenaphthene	SW8270C	1	10.7	144	ND		ug/Kg	05/22/23	15:41	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2 (29-30)	**Lab Sample ID:**	2305105-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:32		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2,4-Dinitrophenol	SW8270C	1	77.6	720	ND		ug/Kg	05/22/23	15:41	MT	474888
4-Nitrophenol	SW8270C	1	54.7	720	ND		ug/Kg	05/22/23	15:41	MT	474888
Dibenzofuran	SW8270C	1	11.2	144	ND		ug/Kg	05/22/23	15:41	MT	474888
2,4-Dinitrotoluene	SW8270C	1	12.1	144	ND		ug/Kg	05/22/23	15:41	MT	474888
2,3,5,6-Tetrachlorophenol	SW8270C	1	27.6	288	ND		ug/Kg	05/22/23	15:41	MT	474888
2,3,4,6-Tetrachlorophenol	SW8270C	1	31.5	288	ND		ug/Kg	05/22/23	15:41	MT	474888
Diethylphthalate	SW8270C	1	13.6	720	ND		ug/Kg	05/22/23	15:41	MT	474888
Fluorene	SW8270C	1	10.3	144	ND		ug/Kg	05/22/23	15:41	MT	474888
4-Chlorophenyl-phenylether	SW8270C	1	9.32	144	ND		ug/Kg	05/22/23	15:41	MT	474888
4,6-Dinitro-2-methylphenol	SW8270C	1	13.4	288	ND		ug/Kg	05/22/23	15:41	MT	474888
Diphenylamine	SW8270C	1	13.0	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Azobenzene	SW8270C	1	114	144	ND		ug/Kg	05/22/23	15:41	MT	474888
4-Bromophenyl-phenylether	SW8270C	1	8.23	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Hexachlorobenzene	SW8270C	1	8.66	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Pentachlorophenol	SW8270C	1	25.0	288	ND		ug/Kg	05/22/23	15:41	MT	474888
Phenanthrene	SW8270C	1	9.32	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Anthracene	SW8270C	1	8.91	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Carbazole	SW8270C	1	10.7	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Di-n-butylphthalate	SW8270C	1	13.5	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Fluoranthene	SW8270C	1	10.0	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Benzidine	SW8270C	1	147	147	ND		ug/Kg	05/22/23	15:41	MT	474888
Pyrene	SW8270C	1	12.0	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Butylbenzylphthalate	SW8270C	1	21.0	720	ND		ug/Kg	05/22/23	15:41	MT	474888
Benzo(a)anthracene	SW8270C	1	9.80	144	ND		ug/Kg	05/22/23	15:41	MT	474888
3,3-Dichlorobenzidine	SW8270C	1	118	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Chrysene	SW8270C	1	15.2	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Bis(2-Ethylhexyl)phthalate	SW8270C	1	15.3	720	ND		ug/Kg	05/22/23	15:41	MT	474888
Di-n-Octylphthalate	SW8270C	1	12.3	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Benzo(b)fluorathene	SW8270C	1	12.0	144	ND		ug/Kg	05/22/23	15:41	MT	474888
benzo(k)fluorathene	SW8270C	1	8.16	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Benzo(a)pyrene	SW8270C	1	9.80	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Indeno(1,2,3-c,d)pyrene	SW8270C	1	13.8	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Dibenzo(a,h)anthracene	SW8270C	1	12.7	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Benzo(g,h,i)perylene	SW8270C	1	16.7	144	ND		ug/Kg	05/22/23	15:41	MT	474888
Pyridine	SW8270C	1	43.8	720	ND		ug/Kg	05/22/23	15:41	MT	474888
			Acceptance Limits								
2-Fluorophenol (S)	SW8270C		25 - 121		**48.0**		%	05/22/23	15:41	MT	474888
Phenol-d6 (S)	SW8270C		24 - 113		**43.1**		%	05/22/23	15:41	MT	474888
2,4,6-Tribromophenol (S)	SW8270C		19 - 122		**42.4**		%	05/22/23	15:41	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2 (29-30)	**Lab Sample ID:**	2305105-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:32		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23	11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2-Fluorobiphenyl (S)	SW8270C		45 - 143		**57.5**		%	05/22/23	15:41	MT	474888
Nitrobenzene-d5 (S)	SW8270C		23 - 120		**47.5**		%	05/22/23	15:41	MT	474888
p-Terphenyl-d14 (S)	SW8270C		18 - 137		**63.7**		%	05/22/23	15:41	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2 (29-30)	**Lab Sample ID:**	2305105-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:32		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/20/23 11:00:00AM
Prep Batch ID:	1151199	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	1.2	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Chloromethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Vinyl Chloride	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Bromomethane	SW8260B	1	2.7	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Chloroethane	SW8260B	1	3.0	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Trichlorofluoromethane	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,1-Dichloroethene	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Freon 113	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Methylene Chloride	SW8260B	1	7.1	10	ND		ug/Kg	05/20/23	20:07	BP	474889
trans-1,2-Dichloroethene	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	20:07	BP	474889
MTBE	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	20:07	BP	474889
TBA	SW8260B	1	12	50	ND		ug/Kg	05/20/23	20:07	BP	474889
Diisopropyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,1-Dichloroethane	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Ethyl tert-Butyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	20:07	BP	474889
cis-1,2-Dichloroethene	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	20:07	BP	474889
2,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Bromochloromethane	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Chloroform	SW8260B	1	2.4	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Carbon Tetrachloride	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,1,1-Trichloroethane	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,1-Dichloropropene	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Benzene	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	20:07	BP	474889
TAME	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,2-Dichloroethane	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Trichloroethene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Dibromomethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Bromodichloromethane	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	20:07	BP	474889
cis-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Toluene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Tetrachloroethene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:07	BP	474889
trans-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,1,2-Trichloroethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Dibromochloromethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,3-Dichloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,2-Dibromoethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Chlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Ethylbenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:07	BP	474889

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-2 (29-30)	**Lab Sample ID:**	2305105-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 8:32		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/20/23 11:00:00AM
Prep Batch ID:	1151199	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	20:07	BP	474889
m,p-Xylene	SW8260B	1	3.2	10	ND		ug/Kg	05/20/23	20:07	BP	474889
o-Xylene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Styrene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Bromoform	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Isopropyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:07	BP	474889
n-Propylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Bromobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,1,2,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	20:07	BP	474889
2-Chlorotoluene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,3,5-Trimethylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,2,3-Trichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	20:07	BP	474889
4-Chlorotoluene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:07	BP	474889
tert-Butylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,2,4-Trimethylbenzene	SW8260B	1	1.4	10	ND		ug/Kg	05/20/23	20:07	BP	474889
sec-Butyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:07	BP	474889
p-Isopropyltoluene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,3-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,4-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:07	BP	474889
n-Butylbenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,2-Dichlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,2-Dibromo-3-Chloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Hexachlorobutadiene	SW8260B	1	1.4	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,2,4-Trichlorobenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	20:07	BP	474889
Naphthalene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:07	BP	474889
1,2,3-Trichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:07	BP	474889
2-Butanone	SW8260B	1	2.3	10.0	ND		ug/Kg	05/20/23	20:07	BP	474889
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**122**		%	05/20/23	20:07	BP	474889
(S) Toluene-d8	SW8260B		55.2 - 133		**101**		%	05/20/23	20:07	BP	474889
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**99.7**		%	05/20/23	20:07	BP	474889

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-11-5	**Lab Sample ID:**	2305105-007A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 9:47		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151158	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	12:58	PH	474858

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-11-5	**Lab Sample ID:**	2305105-007A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 9:47		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/16/23	12:20:00PM
Prep Batch ID:	1150991	**Prep Analyst:**	AJNG	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/17/23	13:26	BJAY	474739

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-11-5	**Lab Sample ID:**	2305105-007A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 9:47		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/16/23 12:15:00PM
Prep Batch ID:	1150990	**Prep Analyst:**	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/16/23	20:41	AT	474758
Arsenic	SW6010B	1	0.15	1.30	**3.44**		mg/Kg	05/16/23	20:41	AT	474758
Barium	SW6010B	1	0.055	5.00	**105**		mg/Kg	05/16/23	20:41	AT	474758
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/16/23	20:41	AT	474758
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/16/23	20:41	AT	474758
Chromium	SW6010B	1	0.075	5.00	**13.9**		mg/Kg	05/16/23	20:41	AT	474758
Cobalt	SW6010B	1	0.070	5.00	**8.00**		mg/Kg	05/16/23	20:41	AT	474758
Copper	SW6010B	1	0.20	5.00	**45.8**		mg/Kg	05/16/23	20:41	AT	474758
Lead	SW6010B	1	0.10	3.00	**89.5**		mg/Kg	05/16/23	20:41	AT	474758
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/16/23	20:41	AT	474758
Nickel	SW6010B	1	0.50	5.00	**11.3**		mg/Kg	05/16/23	20:41	AT	474758
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/16/23	20:41	AT	474758
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/16/23	20:41	AT	474758
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/16/23	20:41	AT	474758
Vanadium	SW6010B	1	0.10	5.00	**40.3**		mg/Kg	05/16/23	20:41	AT	474758
Zinc	SW6010B	1	0.30	5.00	**93.5**		mg/Kg	05/16/23	20:41	AT	474758

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-11-5	**Lab Sample ID:**	2305105-007A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 9:47		
SDG:			

Prep Method:	3546_PCB	**Prep Batch Date/Time:**	5/16/23 9:41:00AM
Prep Batch ID:	1150974	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Aroclor1016	SW8082A	1	35.0	100	ND		ug/Kg	05/16/23	12:03	AK	474707
Aroclor1221	SW8082A	1	5.00	100	ND		ug/Kg	05/16/23	12:03	AK	474707
Aroclor1232	SW8082A	1	17.0	100	ND		ug/Kg	05/16/23	12:03	AK	474707
Aroclor1242	SW8082A	1	3.00	100	ND		ug/Kg	05/16/23	12:03	AK	474707
Aroclor1248	SW8082A	1	2.00	100	ND		ug/Kg	05/16/23	12:03	AK	474707
Aroclor1254	SW8082A	1	14.0	100	ND		ug/Kg	05/16/23	12:03	AK	474707
Aroclor1260	SW8082A	1	24.0	100	ND		ug/Kg	05/16/23	12:03	AK	474707
			Acceptance Limits								
TCMX (S)	SW8082A		48 - 125		**99.0**		%	05/16/23	12:03	AK	474707
DCBP (S)	SW8082A		48 - 135		**95.0**		%	05/16/23	12:03	AK	474707

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-11-5	**Lab Sample ID:**	2305105-007A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 9:47		
SDG:			

Prep Method:	3546_OCP	**Prep Batch Date/Time:**	5/13/23 10:20:00AM
Prep Batch ID:	1150929	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
The results shown below are reported using their MDL.											
alpha-BHC	SW8081B	20	5.0	40	ND		ug/Kg	05/13/23	21:19	LA	474648
gamma-BHC (Lindane)	SW8081B	20	14	40	ND		ug/Kg	05/13/23	21:19	LA	474648
beta-BHC	SW8081B	20	8.7	40	ND		ug/Kg	05/13/23	21:19	LA	474648
delta-BHC	SW8081B	20	13	40	ND		ug/Kg	05/13/23	21:19	LA	474648
Heptachlor	SW8081B	20	5.4	40	ND		ug/Kg	05/13/23	21:19	LA	474648
Aldrin	SW8081B	20	5.9	40	ND		ug/Kg	05/13/23	21:19	LA	474648
Heptachlor Epoxide	SW8081B	20	6.1	40	ND		ug/Kg	05/13/23	21:19	LA	474648
gamma-Chlordane	SW8081B	20	29	60	ND		ug/Kg	05/13/23	21:19	LA	474648
alpha-Chlordane	SW8081B	20	7.2	40	ND		ug/Kg	05/13/23	21:19	LA	474648
4,4'-DDE	SW8081B	20	12	40	ND		ug/Kg	05/13/23	21:19	LA	474648
Endosulfan I	SW8081B	20	5.7	40	ND		ug/Kg	05/13/23	21:19	LA	474648
Dieldrin	SW8081B	20	5.0	40	ND		ug/Kg	05/13/23	21:19	LA	474648
Endrin	SW8081B	20	16	40	ND		ug/Kg	05/13/23	21:19	LA	474648
4,4'-DDD	SW8081B	20	13	40	ND		ug/Kg	05/13/23	21:19	LA	474648
Endosulfan II	SW8081B	20	6.8	40	ND		ug/Kg	05/13/23	21:19	LA	474648
4,4'-DDT	SW8081B	20	15	40	ND		ug/Kg	05/13/23	21:19	LA	474648
Endrin Aldehyde	SW8081B	20	10	40	ND		ug/Kg	05/13/23	21:19	LA	474648
Methoxychlor	SW8081B	20	52	120	ND		ug/Kg	05/13/23	21:19	LA	474648
Endosulfan Sulfate	SW8081B	20	10	40	ND		ug/Kg	05/13/23	21:19	LA	474648
Endrin Ketone	SW8081B	20	8.7	40	ND		ug/Kg	05/13/23	21:19	LA	474648
Chlordane, Technical	SW8081B	20	53	400	ND		ug/Kg	05/13/23	21:19	LA	474648
Toxaphene	SW8081B	20	440	1000	ND		ug/Kg	05/13/23	21:19	LA	474648
			Acceptance Limits								
Tetrachloro-M-Xylene (S)	SW8081B		48 - 125		**0.000**	D	%	05/13/23	21:19	LA	474648
Decachlorobiphenyl (S)	SW8081B		38 - 135		**0.000**	D	%	05/13/23	21:19	LA	474648

NOTE: Sample diluted due to the nature of the sample matrix (dark colored extract)

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-11 (9-10)	**Lab Sample ID:**	2305105-008A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 9:50		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151158	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	**249**		ug/Kg	05/19/23	10:50	PH	474858

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-11 (9-10)	**Lab Sample ID:**	2305105-008A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 9:50		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/17/23 7:15:00PM
Prep Batch ID:	1151067	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	**0.61**		mg/Kg	05/18/23	13:28	BJAY	474773

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-11 (9-10)	**Lab Sample ID:**	2305105-008A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 9:50		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/17/23 7:00:00PM
Prep Batch ID:	1151065	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	**24.4**		mg/Kg	05/18/23	20:14	AT	474846
Arsenic	SW6010B	1	0.15	1.30	**34.4**		mg/Kg	05/18/23	20:14	AT	474846
Barium	SW6010B	1	0.055	5.00	**1020**		mg/Kg	05/18/23	20:14	AT	474846
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/18/23	20:14	AT	474846
Cadmium	SW6010B	1	0.10	0.750	**3.64**		mg/Kg	05/18/23	20:14	AT	474846
Chromium	SW6010B	1	0.075	5.00	**42.9**		mg/Kg	05/18/23	20:14	AT	474846
Cobalt	SW6010B	1	0.070	5.00	**13.9**		mg/Kg	05/18/23	20:14	AT	474846
Copper	SW6010B	1	0.20	5.00	**800**		mg/Kg	05/18/23	20:14	AT	474846
Lead	SW6010B	1	0.10	3.00	**1110**		mg/Kg	05/18/23	20:14	AT	474846
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:14	AT	474846
Nickel	SW6010B	1	0.50	5.00	**136**		mg/Kg	05/18/23	20:14	AT	474846
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/18/23	20:14	AT	474846
Silver	SW6010B	1	0.15	0.500	**2.89**		mg/Kg	05/18/23	20:14	AT	474846
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:14	AT	474846
Vanadium	SW6010B	1	0.10	5.00	**69.5**		mg/Kg	05/18/23	20:14	AT	474846
Zinc	SW6010B	1	0.30	5.00	**1150**		mg/Kg	05/18/23	20:14	AT	474846

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12-5	**Lab Sample ID:**	2305105-009A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 10:55		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	7:38	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12-5	**Lab Sample ID:**	2305105-009A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 10:55		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/16/23	12:20:00PM
Prep Batch ID:	1150991	**Prep Analyst:**	AJNG	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/17/23	13:28	BJAY	474739

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12-5	**Lab Sample ID:**	2305105-009A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 10:55		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/16/23 12:15:00PM
Prep Batch ID:	1150990	**Prep Analyst:**	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/16/23	20:42	AT	474758
Arsenic	SW6010B	1	0.15	1.30	ND		mg/Kg	05/16/23	20:42	AT	474758
Barium	SW6010B	1	0.055	5.00	**55.5**		mg/Kg	05/16/23	20:42	AT	474758
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/16/23	20:42	AT	474758
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/16/23	20:42	AT	474758
Chromium	SW6010B	1	0.075	5.00	**8.35**		mg/Kg	05/16/23	20:42	AT	474758
Cobalt	SW6010B	1	0.070	5.00	**5.05**		mg/Kg	05/16/23	20:42	AT	474758
Copper	SW6010B	1	0.20	5.00	**7.60**		mg/Kg	05/16/23	20:42	AT	474758
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/16/23	20:42	AT	474758
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/16/23	20:42	AT	474758
Nickel	SW6010B	1	0.50	5.00	ND		mg/Kg	05/16/23	20:42	AT	474758
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/16/23	20:42	AT	474758
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/16/23	20:42	AT	474758
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/16/23	20:42	AT	474758
Vanadium	SW6010B	1	0.10	5.00	**25.3**		mg/Kg	05/16/23	20:42	AT	474758
Zinc	SW6010B	1	0.30	5.00	**24.6**		mg/Kg	05/16/23	20:42	AT	474758

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12-5	**Lab Sample ID:**	2305105-009A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 10:55		
SDG:			

Prep Method:	3546_PCB	**Prep Batch Date/Time:**	5/16/23 9:41:00AM
Prep Batch ID:	1150974	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Aroclor1016	SW8082A	1	35.0	100	ND		ug/Kg	05/16/23	12:19	AK	474707
Aroclor1221	SW8082A	1	5.00	100	ND		ug/Kg	05/16/23	12:19	AK	474707
Aroclor1232	SW8082A	1	17.0	100	ND		ug/Kg	05/16/23	12:19	AK	474707
Aroclor1242	SW8082A	1	3.00	100	ND		ug/Kg	05/16/23	12:19	AK	474707
Aroclor1248	SW8082A	1	2.00	100	ND		ug/Kg	05/16/23	12:19	AK	474707
Aroclor1254	SW8082A	1	14.0	100	ND		ug/Kg	05/16/23	12:19	AK	474707
Aroclor1260	SW8082A	1	24.0	100	ND		ug/Kg	05/16/23	12:19	AK	474707
			Acceptance Limits								
TCMX (S)	SW8082A		48 - 125		**114**		%	05/16/23	12:19	AK	474707
DCBP (S)	SW8082A		48 - 135		**107**		%	05/16/23	12:19	AK	474707

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12 (9-10)	**Lab Sample ID:**	2305105-010A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 10:59		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
N-Nitrosodimethylamine	SW8270C	1	46.9	720	ND		ug/Kg	05/22/23	16:12	MT	474888
Phenol	SW8270C	1	43.8	288	ND		ug/Kg	05/22/23	16:12	MT	474888
Bis(2-chloroethyl)ether	SW8270C	1	13.3	144	ND		ug/Kg	05/22/23	16:12	MT	474888
2-Chlorophenol	SW8270C	1	47.7	288	ND		ug/Kg	05/22/23	16:12	MT	474888
1,3-Dichlorobenzene	SW8270C	1	13.1	144	ND		ug/Kg	05/22/23	16:12	MT	474888
1,4-Dichlorobenzene	SW8270C	1	14.6	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Benzyl Alcohol	SW8270C	1	20.5	288	ND		ug/Kg	05/22/23	16:12	MT	474888
1,2-Dichlorobenzene	SW8270C	1	13.5	144	ND		ug/Kg	05/22/23	16:12	MT	474888
2-Methylphenol (o-Cresol)	SW8270C	1	29.3	288	ND		ug/Kg	05/22/23	16:12	MT	474888
N-Methyl-2-Pyrrolidone (NMP)	SW8270C	1	68.0	720	ND		ug/Kg	05/22/23	16:12	MT	474888
3-/4-Methylphenol (p-/m-Cresol)	SW8270C	1	31.3	288	ND		ug/Kg	05/22/23	16:12	MT	474888
N-nitroso-di-n-propylamine	SW8270C	1	13.2	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Hexachloroethane	SW8270C	1	17.1	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Nitrobenzene	SW8270C	1	12.8	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Isophorone	SW8270C	1	12.2	144	ND		ug/Kg	05/22/23	16:12	MT	474888
2-Nitrophenol	SW8270C	1	25.4	288	ND		ug/Kg	05/22/23	16:12	MT	474888
2,4-Dimethylphenol	SW8270C	1	22.8	288	ND		ug/Kg	05/22/23	16:12	MT	474888
Benzoic Acid	SW8270C	1	41.7	288	ND		ug/Kg	05/22/23	16:12	MT	474888
Bis(2-Chloroethoxy)methane	SW8270C	1	9.79	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Bis(2-chloroisopropyl)ether	SW8270C	1	12.6	144	ND		ug/Kg	05/22/23	16:12	MT	474888
2,4-Dichlorophenol	SW8270C	1	39.3	288	ND		ug/Kg	05/22/23	16:12	MT	474888
1,2,4-Trichlorobenzene	SW8270C	1	11.8	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Naphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/22/23	16:12	MT	474888
2,6-Dichlorophenol	SW8270C	1	35.8	288	ND		ug/Kg	05/22/23	16:12	MT	474888
Hexachloro-1,3-butadiene	SW8270C	1	8.34	144	ND		ug/Kg	05/22/23	16:12	MT	474888
4-Chloro-3-methylphenol	SW8270C	1	33.8	288	ND		ug/Kg	05/22/23	16:12	MT	474888
2-Methylnaphthalene	SW8270C	1	10.4	144	ND		ug/Kg	05/22/23	16:12	MT	474888
1-Methylnaphthalene	SW8270C	1	12.2	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Hexachlorocyclopentadiene	SW8270C	1	12.9	144	ND		ug/Kg	05/22/23	16:12	MT	474888
2,4,6-Trichlorophenol	SW8270C	1	35.9	288	ND		ug/Kg	05/22/23	16:12	MT	474888
2,4,5-Trichlorophenol	SW8270C	1	33.4	288	ND		ug/Kg	05/22/23	16:12	MT	474888
2-Chloronaphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/22/23	16:12	MT	474888
1,4-Dinitrobenzene	SW8270C	1	10.3	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Dimethyl phthalate	SW8270C	1	14.2	720	ND		ug/Kg	05/22/23	16:12	MT	474888
1,3-Dinitrobenzene	SW8270C	1	10.4	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Acenaphthylene	SW8270C	1	8.28	144	ND		ug/Kg	05/22/23	16:12	MT	474888
2,6-Dinitrotoluene	SW8270C	1	11.3	144	ND		ug/Kg	05/22/23	16:12	MT	474888
1,2-Dinitrobenzene	SW8270C	1	15.8	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Acenaphthene	SW8270C	1	10.7	144	ND		ug/Kg	05/22/23	16:12	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12 (9-10)	**Lab Sample ID:**	2305105-010A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 10:59		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2,4-Dinitrophenol	SW8270C	1	77.6	720	ND		ug/Kg	05/22/23	16:12	MT	474888
4-Nitrophenol	SW8270C	1	54.7	720	ND		ug/Kg	05/22/23	16:12	MT	474888
Dibenzofuran	SW8270C	1	11.2	144	ND		ug/Kg	05/22/23	16:12	MT	474888
2,4-Dinitrotoluene	SW8270C	1	12.1	144	ND		ug/Kg	05/22/23	16:12	MT	474888
2,3,5,6-Tetrachlorophenol	SW8270C	1	27.6	288	ND		ug/Kg	05/22/23	16:12	MT	474888
2,3,4,6-Tetrachlorophenol	SW8270C	1	31.5	288	ND		ug/Kg	05/22/23	16:12	MT	474888
Diethylphthalate	SW8270C	1	13.6	720	ND		ug/Kg	05/22/23	16:12	MT	474888
Fluorene	SW8270C	1	10.3	144	ND		ug/Kg	05/22/23	16:12	MT	474888
4-Chlorophenyl-phenylether	SW8270C	1	9.32	144	ND		ug/Kg	05/22/23	16:12	MT	474888
4,6-Dinitro-2-methylphenol	SW8270C	1	13.4	288	ND		ug/Kg	05/22/23	16:12	MT	474888
Diphenylamine	SW8270C	1	13.0	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Azobenzene	SW8270C	1	114	144	ND		ug/Kg	05/22/23	16:12	MT	474888
4-Bromophenyl-phenylether	SW8270C	1	8.23	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Hexachlorobenzene	SW8270C	1	8.66	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Pentachlorophenol	SW8270C	1	25.0	288	ND		ug/Kg	05/22/23	16:12	MT	474888
Phenanthrene	SW8270C	1	9.32	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Anthracene	SW8270C	1	8.91	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Carbazole	SW8270C	1	10.7	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Di-n-butylphthalate	SW8270C	1	13.5	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Fluoranthene	SW8270C	1	10.0	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Benzidine	SW8270C	1	147	147	ND		ug/Kg	05/22/23	16:12	MT	474888
Pyrene	SW8270C	1	12.0	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Butylbenzylphthalate	SW8270C	1	21.0	720	ND		ug/Kg	05/22/23	16:12	MT	474888
Benzo(a)anthracene	SW8270C	1	9.80	144	ND		ug/Kg	05/22/23	16:12	MT	474888
3,3-Dichlorobenzidine	SW8270C	1	118	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Chrysene	SW8270C	1	15.2	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Bis(2-Ethylhexyl)phthalate	SW8270C	1	15.3	720	ND		ug/Kg	05/22/23	16:12	MT	474888
Di-n-Octylphthalate	SW8270C	1	12.3	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Benzo(b)fluorathene	SW8270C	1	12.0	144	ND		ug/Kg	05/22/23	16:12	MT	474888
benzo(k)fluorathene	SW8270C	1	8.16	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Benzo(a)pyrene	SW8270C	1	9.80	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Indeno(1,2,3-c,d)pyrene	SW8270C	1	13.8	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Dibenzo(a,h)anthracene	SW8270C	1	12.7	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Benzo(g,h,i)perylene	SW8270C	1	16.7	144	ND		ug/Kg	05/22/23	16:12	MT	474888
Pyridine	SW8270C	1	43.8	720	ND		ug/Kg	05/22/23	16:12	MT	474888
			Acceptance Limits								
2-Fluorophenol (S)	SW8270C		25 - 121		**58.5**		%	05/22/23	16:12	MT	474888
Phenol-d6 (S)	SW8270C		24 - 113		**49.9**		%	05/22/23	16:12	MT	474888
2,4,6-Tribromophenol (S)	SW8270C		19 - 122		**45.2**		%	05/22/23	16:12	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12 (9-10)	**Lab Sample ID:**	2305105-010A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 10:59		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23	11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2-Fluorobiphenyl (S)	SW8270C		45 - 143		**61.9**		%	05/22/23	16:12	MT	474888
Nitrobenzene-d5 (S)	SW8270C		23 - 120		**48.2**		%	05/22/23	16:12	MT	474888
p-Terphenyl-d14 (S)	SW8270C		18 - 137		**73.3**		%	05/22/23	16:12	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12 (9-10)	**Lab Sample ID:**	2305105-010A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 10:59		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/20/23 11:00:00AM
Prep Batch ID:	1151199	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	1.2	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Chloromethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Vinyl Chloride	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Bromomethane	SW8260B	1	2.7	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Chloroethane	SW8260B	1	3.0	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Trichlorofluoromethane	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,1-Dichloroethene	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Freon 113	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Methylene Chloride	SW8260B	1	7.1	10	ND		ug/Kg	05/20/23	20:42	BP	474889
trans-1,2-Dichloroethene	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	20:42	BP	474889
MTBE	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	20:42	BP	474889
TBA	SW8260B	1	12	50	ND		ug/Kg	05/20/23	20:42	BP	474889
Diisopropyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,1-Dichloroethane	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Ethyl tert-Butyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	20:42	BP	474889
cis-1,2-Dichloroethene	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	20:42	BP	474889
2,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Bromochloromethane	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Chloroform	SW8260B	1	2.4	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Carbon Tetrachloride	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,1,1-Trichloroethane	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,1-Dichloropropene	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Benzene	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	20:42	BP	474889
TAME	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,2-Dichloroethane	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Trichloroethene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Dibromomethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Bromodichloromethane	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	20:42	BP	474889
cis-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Toluene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Tetrachloroethene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:42	BP	474889
trans-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,1,2-Trichloroethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Dibromochloromethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,3-Dichloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,2-Dibromoethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Chlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Ethylbenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:42	BP	474889

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12 (9-10)	**Lab Sample ID:**	2305105-010A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 10:59		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/20/23 11:00:00AM
Prep Batch ID:	1151199	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	20:42	BP	474889
m,p-Xylene	SW8260B	1	3.2	10	ND		ug/Kg	05/20/23	20:42	BP	474889
o-Xylene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Styrene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Bromoform	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Isopropyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:42	BP	474889
n-Propylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Bromobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,1,2,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	20:42	BP	474889
2-Chlorotoluene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,3,5-Trimethylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,2,3-Trichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	20:42	BP	474889
4-Chlorotoluene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:42	BP	474889
tert-Butylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,2,4-Trimethylbenzene	SW8260B	1	1.4	10	ND		ug/Kg	05/20/23	20:42	BP	474889
sec-Butyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	20:42	BP	474889
p-Isopropyltoluene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,3-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,4-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:42	BP	474889
n-Butylbenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,2-Dichlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,2-Dibromo-3-Chloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Hexachlorobutadiene	SW8260B	1	1.4	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,2,4-Trichlorobenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	20:42	BP	474889
Naphthalene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:42	BP	474889
1,2,3-Trichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	20:42	BP	474889
2-Butanone	SW8260B	1	2.3	10.0	ND		ug/Kg	05/20/23	20:42	BP	474889
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**103**		%	05/20/23	20:42	BP	474889
(S) Toluene-d8	SW8260B		55.2 - 133		**104**		%	05/20/23	20:42	BP	474889
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**99.7**		%	05/20/23	20:42	BP	474889

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12 (14-15)	**Lab Sample ID:**	2305105-011A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 11:08		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	8:00	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12 (14-15)	**Lab Sample ID:**	2305105-011A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 11:08		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/17/23 7:15:00PM
Prep Batch ID:	1151067	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/18/23	13:30	BJAY	474773

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12 (14-15)	**Lab Sample ID:**	2305105-011A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 11:08		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/17/23 7:00:00PM
Prep Batch ID:	1151065	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:16	AT	474846
Arsenic	SW6010B	1	0.15	1.30	ND		mg/Kg	05/18/23	20:16	AT	474846
Barium	SW6010B	1	0.055	5.00	**42.3**		mg/Kg	05/18/23	20:16	AT	474846
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/18/23	20:16	AT	474846
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/18/23	20:16	AT	474846
Chromium	SW6010B	1	0.075	5.00	**14.7**		mg/Kg	05/18/23	20:16	AT	474846
Cobalt	SW6010B	1	0.070	5.00	ND		mg/Kg	05/18/23	20:16	AT	474846
Copper	SW6010B	1	0.20	5.00	**5.00**		mg/Kg	05/18/23	20:16	AT	474846
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/18/23	20:16	AT	474846
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:16	AT	474846
Nickel	SW6010B	1	0.50	5.00	ND		mg/Kg	05/18/23	20:16	AT	474846
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/18/23	20:16	AT	474846
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/18/23	20:16	AT	474846
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:16	AT	474846
Vanadium	SW6010B	1	0.10	5.00	**21.1**		mg/Kg	05/18/23	20:16	AT	474846
Zinc	SW6010B	1	0.30	5.00	**18.8**		mg/Kg	05/18/23	20:16	AT	474846

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13-5	**Lab Sample ID:**	2305105-014A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:10		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151158	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	13:20	PH	474858

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13-5	**Lab Sample ID:**	2305105-014A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:10		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/16/23	12:20:00PM
Prep Batch ID:	1150991	**Prep Analyst:**	AJNG	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/17/23	13:34	BJAY	474739

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13-5	**Lab Sample ID:**	2305105-014A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:10		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/16/23 12:15:00PM
Prep Batch ID:	1150990	**Prep Analyst:**	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/16/23	20:44	AT	474758
Arsenic	SW6010B	1	0.15	1.30	ND		mg/Kg	05/16/23	20:44	AT	474758
Barium	SW6010B	1	0.055	5.00	**61.5**		mg/Kg	05/16/23	20:44	AT	474758
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/16/23	20:44	AT	474758
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/16/23	20:44	AT	474758
Chromium	SW6010B	1	0.075	5.00	**8.30**		mg/Kg	05/16/23	20:44	AT	474758
Cobalt	SW6010B	1	0.070	5.00	**5.50**		mg/Kg	05/16/23	20:44	AT	474758
Copper	SW6010B	1	0.20	5.00	**6.85**		mg/Kg	05/16/23	20:44	AT	474758
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/16/23	20:44	AT	474758
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/16/23	20:44	AT	474758
Nickel	SW6010B	1	0.50	5.00	**5.15**		mg/Kg	05/16/23	20:44	AT	474758
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/16/23	20:44	AT	474758
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/16/23	20:44	AT	474758
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/16/23	20:44	AT	474758
Vanadium	SW6010B	1	0.10	5.00	**26.3**		mg/Kg	05/16/23	20:44	AT	474758
Zinc	SW6010B	1	0.30	5.00	**26.9**		mg/Kg	05/16/23	20:44	AT	474758

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13-5	**Lab Sample ID:**	2305105-014A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:10		
SDG:			

Prep Method:	3546_PCB	**Prep Batch Date/Time:**	5/16/23 9:41:00AM
Prep Batch ID:	1150974	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Aroclor1016	SW8082A	1	35.0	100	ND		ug/Kg	05/16/23	12:36	AK	474707
Aroclor1221	SW8082A	1	5.00	100	ND		ug/Kg	05/16/23	12:36	AK	474707
Aroclor1232	SW8082A	1	17.0	100	ND		ug/Kg	05/16/23	12:36	AK	474707
Aroclor1242	SW8082A	1	3.00	100	ND		ug/Kg	05/16/23	12:36	AK	474707
Aroclor1248	SW8082A	1	2.00	100	ND		ug/Kg	05/16/23	12:36	AK	474707
Aroclor1254	SW8082A	1	14.0	100	ND		ug/Kg	05/16/23	12:36	AK	474707
Aroclor1260	SW8082A	1	24.0	100	ND		ug/Kg	05/16/23	12:36	AK	474707
			Acceptance Limits								
TCMX (S)	SW8082A		48 - 125		**112**		%	05/16/23	12:36	AK	474707
DCBP (S)	SW8082A		48 - 135		**108**		%	05/16/23	12:36	AK	474707

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13 (9-10)	**Lab Sample ID:**	2305105-015A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:15		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/20/23 10:17:00AM
Prep Batch ID:	1151171	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
N-Nitrosodimethylamine	SW8270C	1	46.9	720	ND		ug/Kg	05/21/23	22:13	MT	474904
Phenol	SW8270C	1	43.8	288	ND		ug/Kg	05/21/23	22:13	MT	474904
Bis(2-chloroethyl)ether	SW8270C	1	13.3	144	ND		ug/Kg	05/21/23	22:13	MT	474904
2-Chlorophenol	SW8270C	1	47.7	288	ND		ug/Kg	05/21/23	22:13	MT	474904
1,3-Dichlorobenzene	SW8270C	1	13.1	144	ND		ug/Kg	05/21/23	22:13	MT	474904
1,4-Dichlorobenzene	SW8270C	1	14.6	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Benzyl Alcohol	SW8270C	1	20.5	288	ND		ug/Kg	05/21/23	22:13	MT	474904
1,2-Dichlorobenzene	SW8270C	1	13.5	144	ND		ug/Kg	05/21/23	22:13	MT	474904
2-Methylphenol (o-Cresol)	SW8270C	1	29.3	288	ND		ug/Kg	05/21/23	22:13	MT	474904
N-Methyl-2-Pyrrolidone (NMP)	SW8270C	1	68.0	720	ND		ug/Kg	05/21/23	22:13	MT	474904
3-/4-Methylphenol (p-/m-Cresol)	SW8270C	1	31.3	288	ND		ug/Kg	05/21/23	22:13	MT	474904
N-nitroso-di-n-propylamine	SW8270C	1	13.2	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Hexachloroethane	SW8270C	1	17.1	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Nitrobenzene	SW8270C	1	12.8	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Isophorone	SW8270C	1	12.2	144	ND		ug/Kg	05/21/23	22:13	MT	474904
2-Nitrophenol	SW8270C	1	25.4	288	ND		ug/Kg	05/21/23	22:13	MT	474904
2,4-Dimethylphenol	SW8270C	1	22.8	288	ND		ug/Kg	05/21/23	22:13	MT	474904
Benzoic Acid	SW8270C	1	41.7	288	ND		ug/Kg	05/21/23	22:13	MT	474904
Bis(2-Chloroethoxy)methane	SW8270C	1	9.79	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Bis(2-chloroisopropyl)ether	SW8270C	1	12.6	144	ND		ug/Kg	05/21/23	22:13	MT	474904
2,4-Dichlorophenol	SW8270C	1	39.3	288	ND		ug/Kg	05/21/23	22:13	MT	474904
1,2,4-Trichlorobenzene	SW8270C	1	11.8	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Naphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/21/23	22:13	MT	474904
2,6-Dichlorophenol	SW8270C	1	35.8	288	ND		ug/Kg	05/21/23	22:13	MT	474904
Hexachloro-1,3-butadiene	SW8270C	1	8.34	144	ND		ug/Kg	05/21/23	22:13	MT	474904
4-Chloro-3-methylphenol	SW8270C	1	33.8	288	ND		ug/Kg	05/21/23	22:13	MT	474904
2-Methylnaphthalene	SW8270C	1	10.4	144	ND		ug/Kg	05/21/23	22:13	MT	474904
1-Methylnaphthalene	SW8270C	1	12.2	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Hexachlorocyclopentadiene	SW8270C	1	12.9	144	ND		ug/Kg	05/21/23	22:13	MT	474904
2,4,6-Trichlorophenol	SW8270C	1	35.9	288	ND		ug/Kg	05/21/23	22:13	MT	474904
2,4,5-Trichlorophenol	SW8270C	1	33.4	288	ND		ug/Kg	05/21/23	22:13	MT	474904
2-Chloronaphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/21/23	22:13	MT	474904
1,4-Dinitrobenzene	SW8270C	1	10.3	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Dimethyl phthalate	SW8270C	1	14.2	720	ND		ug/Kg	05/21/23	22:13	MT	474904
1,3-Dinitrobenzene	SW8270C	1	10.4	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Acenaphthylene	SW8270C	1	8.28	144	ND		ug/Kg	05/21/23	22:13	MT	474904
2,6-Dinitrotoluene	SW8270C	1	11.3	144	ND		ug/Kg	05/21/23	22:13	MT	474904
1,2-Dinitrobenzene	SW8270C	1	15.8	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Acenaphthene	SW8270C	1	10.7	144	ND		ug/Kg	05/21/23	22:13	MT	474904

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13 (9-10)	**Lab Sample ID:**	2305105-015A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:15		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/20/23 10:17:00AM
Prep Batch ID:	1151171	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2,4-Dinitrophenol	SW8270C	1	77.6	720	ND		ug/Kg	05/21/23	22:13	MT	474904
4-Nitrophenol	SW8270C	1	54.7	720	ND		ug/Kg	05/21/23	22:13	MT	474904
Dibenzofuran	SW8270C	1	11.2	144	ND		ug/Kg	05/21/23	22:13	MT	474904
2,4-Dinitrotoluene	SW8270C	1	12.1	144	ND		ug/Kg	05/21/23	22:13	MT	474904
2,3,5,6-Tetrachlorophenol	SW8270C	1	27.6	288	ND		ug/Kg	05/21/23	22:13	MT	474904
2,3,4,6-Tetrachlorophenol	SW8270C	1	31.5	288	ND		ug/Kg	05/21/23	22:13	MT	474904
Diethylphthalate	SW8270C	1	13.6	720	ND		ug/Kg	05/21/23	22:13	MT	474904
Fluorene	SW8270C	1	10.3	144	ND		ug/Kg	05/21/23	22:13	MT	474904
4-Chlorophenyl-phenylether	SW8270C	1	9.32	144	ND		ug/Kg	05/21/23	22:13	MT	474904
4,6-Dinitro-2-methylphenol	SW8270C	1	13.4	288	ND		ug/Kg	05/21/23	22:13	MT	474904
Diphenylamine	SW8270C	1	13.0	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Azobenzene	SW8270C	1	114	144	ND		ug/Kg	05/21/23	22:13	MT	474904
4-Bromophenyl-phenylether	SW8270C	1	8.23	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Hexachlorobenzene	SW8270C	1	8.66	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Pentachlorophenol	SW8270C	1	25.0	288	ND		ug/Kg	05/21/23	22:13	MT	474904
Phenanthrene	SW8270C	1	9.32	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Anthracene	SW8270C	1	8.91	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Carbazole	SW8270C	1	10.7	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Di-n-butylphthalate	SW8270C	1	13.5	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Fluoranthene	SW8270C	1	10.0	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Benzidine	SW8270C	1	147	147	ND		ug/Kg	05/21/23	22:13	MT	474904
Pyrene	SW8270C	1	12.0	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Butylbenzylphthalate	SW8270C	1	21.0	720	ND		ug/Kg	05/21/23	22:13	MT	474904
Benzo(a)anthracene	SW8270C	1	9.80	144	ND		ug/Kg	05/21/23	22:13	MT	474904
3,3-Dichlorobenzidine	SW8270C	1	118	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Chrysene	SW8270C	1	15.2	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Bis(2-Ethylhexyl)phthalate	SW8270C	1	15.3	720	ND		ug/Kg	05/21/23	22:13	MT	474904
Di-n-Octylphthalate	SW8270C	1	12.3	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Benzo(b)fluorathene	SW8270C	1	12.0	144	ND		ug/Kg	05/21/23	22:13	MT	474904
benzo(k)fluorathene	SW8270C	1	8.16	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Benzo(a)pyrene	SW8270C	1	9.80	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Indeno(1,2,3-c,d)pyrene	SW8270C	1	13.8	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Dibenzo(a,h)anthracene	SW8270C	1	12.7	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Benzo(g,h,i)perylene	SW8270C	1	16.7	144	ND		ug/Kg	05/21/23	22:13	MT	474904
Pyridine	SW8270C	1	43.8	720	ND		ug/Kg	05/21/23	22:13	MT	474904
			Acceptance Limits								
2-Fluorophenol (S)	SW8270C		25 - 121		**54.7**		%	05/21/23	22:13	MT	474904
Phenol-d6 (S)	SW8270C		24 - 113		**57.6**		%	05/21/23	22:13	MT	474904
2,4,6-Tribromophenol (S)	SW8270C		19 - 122		**56.8**		%	05/21/23	22:13	MT	474904

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13 (9-10)	**Lab Sample ID:**	2305105-015A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:15		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/20/23	10:17:00AM
Prep Batch ID:	1151171	**Prep Analyst:**	NDUM	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2-Fluorobiphenyl (S)	SW8270C		45 - 143		**56.3**		%	05/21/23	22:13	MT	474904
Nitrobenzene-d5 (S)	SW8270C		23 - 120		**52.4**		%	05/21/23	22:13	MT	474904
p-Terphenyl-d14 (S)	SW8270C		18 - 137		**74.7**		%	05/21/23	22:13	MT	474904

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13 (9-10)	**Lab Sample ID:**	2305105-015A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:15		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/20/23 11:00:00AM
Prep Batch ID:	1151199	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	1.2	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Chloromethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Vinyl Chloride	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Bromomethane	SW8260B	1	2.7	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Chloroethane	SW8260B	1	3.0	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Trichlorofluoromethane	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,1-Dichloroethene	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Freon 113	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Methylene Chloride	SW8260B	1	7.1	10	ND		ug/Kg	05/20/23	21:17	BP	474889
trans-1,2-Dichloroethene	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	21:17	BP	474889
MTBE	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	21:17	BP	474889
TBA	SW8260B	1	12	50	ND		ug/Kg	05/20/23	21:17	BP	474889
Diisopropyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,1-Dichloroethane	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Ethyl tert-Butyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	21:17	BP	474889
cis-1,2-Dichloroethene	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	21:17	BP	474889
2,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Bromochloromethane	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Chloroform	SW8260B	1	2.4	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Carbon Tetrachloride	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,1,1-Trichloroethane	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,1-Dichloropropene	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Benzene	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	21:17	BP	474889
TAME	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,2-Dichloroethane	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Trichloroethene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Dibromomethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Bromodichloromethane	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	21:17	BP	474889
cis-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Toluene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Tetrachloroethene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:17	BP	474889
trans-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,1,2-Trichloroethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Dibromochloromethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,3-Dichloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,2-Dibromoethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Chlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Ethylbenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:17	BP	474889

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13 (9-10)	**Lab Sample ID:**	2305105-015A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:15		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/20/23 11:00:00AM
Prep Batch ID:	1151199	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	21:17	BP	474889
m,p-Xylene	SW8260B	1	3.2	10	ND		ug/Kg	05/20/23	21:17	BP	474889
o-Xylene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Styrene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Bromoform	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Isopropyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:17	BP	474889
n-Propylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Bromobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,1,2,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	21:17	BP	474889
2-Chlorotoluene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,3,5-Trimethylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,2,3-Trichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	21:17	BP	474889
4-Chlorotoluene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:17	BP	474889
tert-Butylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,2,4-Trimethylbenzene	SW8260B	1	1.4	10	ND		ug/Kg	05/20/23	21:17	BP	474889
sec-Butyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:17	BP	474889
p-Isopropyltoluene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,3-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,4-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:17	BP	474889
n-Butylbenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,2-Dichlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,2-Dibromo-3-Chloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Hexachlorobutadiene	SW8260B	1	1.4	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,2,4-Trichlorobenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	21:17	BP	474889
Naphthalene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:17	BP	474889
1,2,3-Trichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:17	BP	474889
2-Butanone	SW8260B	1	2.3	10.0	ND		ug/Kg	05/20/23	21:17	BP	474889
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**128**		%	05/20/23	21:17	BP	474889
(S) Toluene-d8	SW8260B		55.2 - 133		**104**		%	05/20/23	21:17	BP	474889
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**100**		%	05/20/23	21:17	BP	474889

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13 (14-15)	**Lab Sample ID:**	2305105-016A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:17		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	8:21	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13 (14-15)	**Lab Sample ID:**	2305105-016A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:17		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/17/23 7:15:00PM
Prep Batch ID:	1151067	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/18/23	13:32	BJAY	474773

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13 (14-15)	**Lab Sample ID:**	2305105-016A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:17		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/17/23 7:00:00PM
Prep Batch ID:	1151065	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:17	AT	474846
Arsenic	SW6010B	1	0.15	1.30	ND		mg/Kg	05/18/23	20:17	AT	474846
Barium	SW6010B	1	0.055	5.00	**45.5**		mg/Kg	05/18/23	20:17	AT	474846
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/18/23	20:17	AT	474846
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/18/23	20:17	AT	474846
Chromium	SW6010B	1	0.075	5.00	**6.15**		mg/Kg	05/18/23	20:17	AT	474846
Cobalt	SW6010B	1	0.070	5.00	ND		mg/Kg	05/18/23	20:17	AT	474846
Copper	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:17	AT	474846
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/18/23	20:17	AT	474846
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:17	AT	474846
Nickel	SW6010B	1	0.50	5.00	ND		mg/Kg	05/18/23	20:17	AT	474846
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/18/23	20:17	AT	474846
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/18/23	20:17	AT	474846
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:17	AT	474846
Vanadium	SW6010B	1	0.10	5.00	**19.1**		mg/Kg	05/18/23	20:17	AT	474846
Zinc	SW6010B	1	0.30	5.00	**19.8**		mg/Kg	05/18/23	20:17	AT	474846

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13 (29-30)	**Lab Sample ID:**	2305105-019A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:24		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/20/23 10:17:00AM
Prep Batch ID:	1151171	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
N-Nitrosodimethylamine	SW8270C	1	46.9	720	ND		ug/Kg	05/21/23	22:42	MT	474904
Phenol	SW8270C	1	43.8	288	ND		ug/Kg	05/21/23	22:42	MT	474904
Bis(2-chloroethyl)ether	SW8270C	1	13.3	144	ND		ug/Kg	05/21/23	22:42	MT	474904
2-Chlorophenol	SW8270C	1	47.7	288	ND		ug/Kg	05/21/23	22:42	MT	474904
1,3-Dichlorobenzene	SW8270C	1	13.1	144	ND		ug/Kg	05/21/23	22:42	MT	474904
1,4-Dichlorobenzene	SW8270C	1	14.6	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Benzyl Alcohol	SW8270C	1	20.5	288	ND		ug/Kg	05/21/23	22:42	MT	474904
1,2-Dichlorobenzene	SW8270C	1	13.5	144	ND		ug/Kg	05/21/23	22:42	MT	474904
2-Methylphenol (o-Cresol)	SW8270C	1	29.3	288	ND		ug/Kg	05/21/23	22:42	MT	474904
N-Methyl-2-Pyrrolidone (NMP)	SW8270C	1	68.0	720	ND		ug/Kg	05/21/23	22:42	MT	474904
3-/4-Methylphenol (p-/m-Cresol)	SW8270C	1	31.3	288	ND		ug/Kg	05/21/23	22:42	MT	474904
N-nitroso-di-n-propylamine	SW8270C	1	13.2	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Hexachloroethane	SW8270C	1	17.1	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Nitrobenzene	SW8270C	1	12.8	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Isophorone	SW8270C	1	12.2	144	ND		ug/Kg	05/21/23	22:42	MT	474904
2-Nitrophenol	SW8270C	1	25.4	288	ND		ug/Kg	05/21/23	22:42	MT	474904
2,4-Dimethylphenol	SW8270C	1	22.8	288	ND		ug/Kg	05/21/23	22:42	MT	474904
Benzoic Acid	SW8270C	1	41.7	288	ND		ug/Kg	05/21/23	22:42	MT	474904
Bis(2-Chloroethoxy)methane	SW8270C	1	9.79	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Bis(2-chloroisopropyl)ether	SW8270C	1	12.6	144	ND		ug/Kg	05/21/23	22:42	MT	474904
2,4-Dichlorophenol	SW8270C	1	39.3	288	ND		ug/Kg	05/21/23	22:42	MT	474904
1,2,4-Trichlorobenzene	SW8270C	1	11.8	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Naphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/21/23	22:42	MT	474904
2,6-Dichlorophenol	SW8270C	1	35.8	288	ND		ug/Kg	05/21/23	22:42	MT	474904
Hexachloro-1,3-butadiene	SW8270C	1	8.34	144	ND		ug/Kg	05/21/23	22:42	MT	474904
4-Chloro-3-methylphenol	SW8270C	1	33.8	288	ND		ug/Kg	05/21/23	22:42	MT	474904
2-Methylnaphthalene	SW8270C	1	10.4	144	ND		ug/Kg	05/21/23	22:42	MT	474904
1-Methylnaphthalene	SW8270C	1	12.2	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Hexachlorocyclopentadiene	SW8270C	1	12.9	144	ND		ug/Kg	05/21/23	22:42	MT	474904
2,4,6-Trichlorophenol	SW8270C	1	35.9	288	ND		ug/Kg	05/21/23	22:42	MT	474904
2,4,5-Trichlorophenol	SW8270C	1	33.4	288	ND		ug/Kg	05/21/23	22:42	MT	474904
2-Chloronaphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/21/23	22:42	MT	474904
1,4-Dinitrobenzene	SW8270C	1	10.3	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Dimethyl phthalate	SW8270C	1	14.2	720	ND		ug/Kg	05/21/23	22:42	MT	474904
1,3-Dinitrobenzene	SW8270C	1	10.4	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Acenaphthylene	SW8270C	1	8.28	144	ND		ug/Kg	05/21/23	22:42	MT	474904
2,6-Dinitrotoluene	SW8270C	1	11.3	144	ND		ug/Kg	05/21/23	22:42	MT	474904
1,2-Dinitrobenzene	SW8270C	1	15.8	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Acenaphthene	SW8270C	1	10.7	144	ND		ug/Kg	05/21/23	22:42	MT	474904

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13 (29-30)	**Lab Sample ID:**	2305105-019A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:24		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/20/23 10:17:00AM
Prep Batch ID:	1151171	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2,4-Dinitrophenol	SW8270C	1	77.6	720	ND		ug/Kg	05/21/23	22:42	MT	474904
4-Nitrophenol	SW8270C	1	54.7	720	ND		ug/Kg	05/21/23	22:42	MT	474904
Dibenzofuran	SW8270C	1	11.2	144	ND		ug/Kg	05/21/23	22:42	MT	474904
2,4-Dinitrotoluene	SW8270C	1	12.1	144	ND		ug/Kg	05/21/23	22:42	MT	474904
2,3,5,6-Tetrachlorophenol	SW8270C	1	27.6	288	ND		ug/Kg	05/21/23	22:42	MT	474904
2,3,4,6-Tetrachlorophenol	SW8270C	1	31.5	288	ND		ug/Kg	05/21/23	22:42	MT	474904
Diethylphthalate	SW8270C	1	13.6	720	ND		ug/Kg	05/21/23	22:42	MT	474904
Fluorene	SW8270C	1	10.3	144	ND		ug/Kg	05/21/23	22:42	MT	474904
4-Chlorophenyl-phenylether	SW8270C	1	9.32	144	ND		ug/Kg	05/21/23	22:42	MT	474904
4,6-Dinitro-2-methylphenol	SW8270C	1	13.4	288	ND		ug/Kg	05/21/23	22:42	MT	474904
Diphenylamine	SW8270C	1	13.0	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Azobenzene	SW8270C	1	114	144	ND		ug/Kg	05/21/23	22:42	MT	474904
4-Bromophenyl-phenylether	SW8270C	1	8.23	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Hexachlorobenzene	SW8270C	1	8.66	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Pentachlorophenol	SW8270C	1	25.0	288	ND		ug/Kg	05/21/23	22:42	MT	474904
Phenanthrene	SW8270C	1	9.32	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Anthracene	SW8270C	1	8.91	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Carbazole	SW8270C	1	10.7	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Di-n-butylphthalate	SW8270C	1	13.5	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Fluoranthene	SW8270C	1	10.0	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Benzidine	SW8270C	1	147	147	ND		ug/Kg	05/21/23	22:42	MT	474904
Pyrene	SW8270C	1	12.0	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Butylbenzylphthalate	SW8270C	1	21.0	720	ND		ug/Kg	05/21/23	22:42	MT	474904
Benzo(a)anthracene	SW8270C	1	9.80	144	ND		ug/Kg	05/21/23	22:42	MT	474904
3,3-Dichlorobenzidine	SW8270C	1	118	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Chrysene	SW8270C	1	15.2	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Bis(2-Ethylhexyl)phthalate	SW8270C	1	15.3	720	ND		ug/Kg	05/21/23	22:42	MT	474904
Di-n-Octylphthalate	SW8270C	1	12.3	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Benzo(b)fluorathene	SW8270C	1	12.0	144	ND		ug/Kg	05/21/23	22:42	MT	474904
benzo(k)fluorathene	SW8270C	1	8.16	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Benzo(a)pyrene	SW8270C	1	9.80	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Indeno(1,2,3-c,d)pyrene	SW8270C	1	13.8	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Dibenzo(a,h)anthracene	SW8270C	1	12.7	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Benzo(g,h,i)perylene	SW8270C	1	16.7	144	ND		ug/Kg	05/21/23	22:42	MT	474904
Pyridine	SW8270C	1	43.8	720	ND		ug/Kg	05/21/23	22:42	MT	474904
			Acceptance Limits								
2-Fluorophenol (S)	SW8270C		25 - 121		**66.9**		%	05/21/23	22:42	MT	474904
Phenol-d6 (S)	SW8270C		24 - 113		**70.2**		%	05/21/23	22:42	MT	474904
2,4,6-Tribromophenol (S)	SW8270C		19 - 122		**68.7**		%	05/21/23	22:42	MT	474904

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13 (29-30)	**Lab Sample ID:**	2305105-019A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:24		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/20/23	10:17:00AM
Prep Batch ID:	1151171	**Prep Analyst:**	NDUM	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2-Fluorobiphenyl (S)	SW8270C		45 - 143		**70.7**		%	05/21/23	22:42	MT	474904
Nitrobenzene-d5 (S)	SW8270C		23 - 120		**64.9**		%	05/21/23	22:42	MT	474904
p-Terphenyl-d14 (S)	SW8270C		18 - 137		**86.9**		%	05/21/23	22:42	MT	474904

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13 (29-30)	**Lab Sample ID:**	2305105-019A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:24		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/20/23 11:00:00AM
Prep Batch ID:	1151199	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	1.2	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Chloromethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Vinyl Chloride	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Bromomethane	SW8260B	1	2.7	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Chloroethane	SW8260B	1	3.0	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Trichlorofluoromethane	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,1-Dichloroethene	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Freon 113	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Methylene Chloride	SW8260B	1	7.1	10	ND		ug/Kg	05/20/23	21:52	BP	474889
trans-1,2-Dichloroethene	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	21:52	BP	474889
MTBE	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	21:52	BP	474889
TBA	SW8260B	1	12	50	ND		ug/Kg	05/20/23	21:52	BP	474889
Diisopropyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,1-Dichloroethane	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Ethyl tert-Butyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	21:52	BP	474889
cis-1,2-Dichloroethene	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	21:52	BP	474889
2,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Bromochloromethane	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Chloroform	SW8260B	1	2.4	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Carbon Tetrachloride	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,1,1-Trichloroethane	SW8260B	1	2.1	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,1-Dichloropropene	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Benzene	SW8260B	1	2.2	10	ND		ug/Kg	05/20/23	21:52	BP	474889
TAME	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,2-Dichloroethane	SW8260B	1	2.3	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Trichloroethene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Dibromomethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Bromodichloromethane	SW8260B	1	2.0	10	ND		ug/Kg	05/20/23	21:52	BP	474889
cis-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Toluene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Tetrachloroethene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:52	BP	474889
trans-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,1,2-Trichloroethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Dibromochloromethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,3-Dichloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,2-Dibromoethane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Chlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Ethylbenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:52	BP	474889

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-13 (29-30)	**Lab Sample ID:**	2305105-019A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 12:24		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/20/23 11:00:00AM
Prep Batch ID:	1151199	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	21:52	BP	474889
m,p-Xylene	SW8260B	1	3.2	10	ND		ug/Kg	05/20/23	21:52	BP	474889
o-Xylene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Styrene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Bromoform	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Isopropyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:52	BP	474889
n-Propylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Bromobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,1,2,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	21:52	BP	474889
2-Chlorotoluene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,3,5-Trimethylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,2,3-Trichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/20/23	21:52	BP	474889
4-Chlorotoluene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:52	BP	474889
tert-Butylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,2,4-Trimethylbenzene	SW8260B	1	1.4	10	ND		ug/Kg	05/20/23	21:52	BP	474889
sec-Butyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/20/23	21:52	BP	474889
p-Isopropyltoluene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,3-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,4-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:52	BP	474889
n-Butylbenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,2-Dichlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,2-Dibromo-3-Chloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Hexachlorobutadiene	SW8260B	1	1.4	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,2,4-Trichlorobenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/20/23	21:52	BP	474889
Naphthalene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:52	BP	474889
1,2,3-Trichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/20/23	21:52	BP	474889
2-Butanone	SW8260B	1	2.3	10.0	ND		ug/Kg	05/20/23	21:52	BP	474889
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**125**		%	05/20/23	21:52	BP	474889
(S) Toluene-d8	SW8260B		55.2 - 133		**102**		%	05/20/23	21:52	BP	474889
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**101**		%	05/20/23	21:52	BP	474889

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12 (29-30.5)	**Lab Sample ID:**	2305105-022A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 11:20		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/20/23 10:17:00AM
Prep Batch ID:	1151171	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
N-Nitrosodimethylamine	SW8270C	1	46.9	720	ND		ug/Kg	05/21/23	23:12	MT	474904
Phenol	SW8270C	1	43.8	288	ND		ug/Kg	05/21/23	23:12	MT	474904
Bis(2-chloroethyl)ether	SW8270C	1	13.3	144	ND		ug/Kg	05/21/23	23:12	MT	474904
2-Chlorophenol	SW8270C	1	47.7	288	ND		ug/Kg	05/21/23	23:12	MT	474904
1,3-Dichlorobenzene	SW8270C	1	13.1	144	ND		ug/Kg	05/21/23	23:12	MT	474904
1,4-Dichlorobenzene	SW8270C	1	14.6	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Benzyl Alcohol	SW8270C	1	20.5	288	ND		ug/Kg	05/21/23	23:12	MT	474904
1,2-Dichlorobenzene	SW8270C	1	13.5	144	ND		ug/Kg	05/21/23	23:12	MT	474904
2-Methylphenol (o-Cresol)	SW8270C	1	29.3	288	ND		ug/Kg	05/21/23	23:12	MT	474904
N-Methyl-2-Pyrrolidone (NMP)	SW8270C	1	68.0	720	ND		ug/Kg	05/21/23	23:12	MT	474904
3-/4-Methylphenol (p-/m-Cresol)	SW8270C	1	31.3	288	ND		ug/Kg	05/21/23	23:12	MT	474904
N-nitroso-di-n-propylamine	SW8270C	1	13.2	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Hexachloroethane	SW8270C	1	17.1	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Nitrobenzene	SW8270C	1	12.8	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Isophorone	SW8270C	1	12.2	144	ND		ug/Kg	05/21/23	23:12	MT	474904
2-Nitrophenol	SW8270C	1	25.4	288	ND		ug/Kg	05/21/23	23:12	MT	474904
2,4-Dimethylphenol	SW8270C	1	22.8	288	ND		ug/Kg	05/21/23	23:12	MT	474904
Benzoic Acid	SW8270C	1	41.7	288	ND		ug/Kg	05/21/23	23:12	MT	474904
Bis(2-Chloroethoxy)methane	SW8270C	1	9.79	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Bis(2-chloroisopropyl)ether	SW8270C	1	12.6	144	ND		ug/Kg	05/21/23	23:12	MT	474904
2,4-Dichlorophenol	SW8270C	1	39.3	288	ND		ug/Kg	05/21/23	23:12	MT	474904
1,2,4-Trichlorobenzene	SW8270C	1	11.8	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Naphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/21/23	23:12	MT	474904
2,6-Dichlorophenol	SW8270C	1	35.8	288	ND		ug/Kg	05/21/23	23:12	MT	474904
Hexachloro-1,3-butadiene	SW8270C	1	8.34	144	ND		ug/Kg	05/21/23	23:12	MT	474904
4-Chloro-3-methylphenol	SW8270C	1	33.8	288	ND		ug/Kg	05/21/23	23:12	MT	474904
2-Methylnaphthalene	SW8270C	1	10.4	144	ND		ug/Kg	05/21/23	23:12	MT	474904
1-Methylnaphthalene	SW8270C	1	12.2	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Hexachlorocyclopentadiene	SW8270C	1	12.9	144	ND		ug/Kg	05/21/23	23:12	MT	474904
2,4,6-Trichlorophenol	SW8270C	1	35.9	288	ND		ug/Kg	05/21/23	23:12	MT	474904
2,4,5-Trichlorophenol	SW8270C	1	33.4	288	ND		ug/Kg	05/21/23	23:12	MT	474904
2-Chloronaphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/21/23	23:12	MT	474904
1,4-Dinitrobenzene	SW8270C	1	10.3	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Dimethyl phthalate	SW8270C	1	14.2	720	ND		ug/Kg	05/21/23	23:12	MT	474904
1,3-Dinitrobenzene	SW8270C	1	10.4	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Acenaphthylene	SW8270C	1	8.28	144	ND		ug/Kg	05/21/23	23:12	MT	474904
2,6-Dinitrotoluene	SW8270C	1	11.3	144	ND		ug/Kg	05/21/23	23:12	MT	474904
1,2-Dinitrobenzene	SW8270C	1	15.8	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Acenaphthene	SW8270C	1	10.7	144	ND		ug/Kg	05/21/23	23:12	MT	474904

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12 (29-30.5)	**Lab Sample ID:**	2305105-022A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 11:20		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/20/23 10:17:00AM
Prep Batch ID:	1151171	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2,4-Dinitrophenol	SW8270C	1	77.6	720	ND		ug/Kg	05/21/23	23:12	MT	474904
4-Nitrophenol	SW8270C	1	54.7	720	ND		ug/Kg	05/21/23	23:12	MT	474904
Dibenzofuran	SW8270C	1	11.2	144	ND		ug/Kg	05/21/23	23:12	MT	474904
2,4-Dinitrotoluene	SW8270C	1	12.1	144	ND		ug/Kg	05/21/23	23:12	MT	474904
2,3,5,6-Tetrachlorophenol	SW8270C	1	27.6	288	ND		ug/Kg	05/21/23	23:12	MT	474904
2,3,4,6-Tetrachlorophenol	SW8270C	1	31.5	288	ND		ug/Kg	05/21/23	23:12	MT	474904
Diethylphthalate	SW8270C	1	13.6	720	ND		ug/Kg	05/21/23	23:12	MT	474904
Fluorene	SW8270C	1	10.3	144	ND		ug/Kg	05/21/23	23:12	MT	474904
4-Chlorophenyl-phenylether	SW8270C	1	9.32	144	ND		ug/Kg	05/21/23	23:12	MT	474904
4,6-Dinitro-2-methylphenol	SW8270C	1	13.4	288	ND		ug/Kg	05/21/23	23:12	MT	474904
Diphenylamine	SW8270C	1	13.0	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Azobenzene	SW8270C	1	114	144	ND		ug/Kg	05/21/23	23:12	MT	474904
4-Bromophenyl-phenylether	SW8270C	1	8.23	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Hexachlorobenzene	SW8270C	1	8.66	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Pentachlorophenol	SW8270C	1	25.0	288	ND		ug/Kg	05/21/23	23:12	MT	474904
Phenanthrene	SW8270C	1	9.32	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Anthracene	SW8270C	1	8.91	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Carbazole	SW8270C	1	10.7	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Di-n-butylphthalate	SW8270C	1	13.5	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Fluoranthene	SW8270C	1	10.0	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Benzidine	SW8270C	1	147	147	ND		ug/Kg	05/21/23	23:12	MT	474904
Pyrene	SW8270C	1	12.0	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Butylbenzylphthalate	SW8270C	1	21.0	720	ND		ug/Kg	05/21/23	23:12	MT	474904
Benzo(a)anthracene	SW8270C	1	9.80	144	ND		ug/Kg	05/21/23	23:12	MT	474904
3,3-Dichlorobenzidine	SW8270C	1	118	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Chrysene	SW8270C	1	15.2	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Bis(2-Ethylhexyl)phthalate	SW8270C	1	15.3	720	ND		ug/Kg	05/21/23	23:12	MT	474904
Di-n-Octylphthalate	SW8270C	1	12.3	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Benzo(b)fluorathene	SW8270C	1	12.0	144	ND		ug/Kg	05/21/23	23:12	MT	474904
benzo(k)fluorathene	SW8270C	1	8.16	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Benzo(a)pyrene	SW8270C	1	9.80	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Indeno(1,2,3-c,d)pyrene	SW8270C	1	13.8	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Dibenzo(a,h)anthracene	SW8270C	1	12.7	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Benzo(g,h,i)perylene	SW8270C	1	16.7	144	ND		ug/Kg	05/21/23	23:12	MT	474904
Pyridine	SW8270C	1	43.8	720	ND		ug/Kg	05/21/23	23:12	MT	474904
			Acceptance Limits								
2-Fluorophenol (S)	SW8270C		25 - 121		**72.3**		%	05/21/23	23:12	MT	474904
Phenol-d6 (S)	SW8270C		24 - 113		**77.5**		%	05/21/23	23:12	MT	474904
2,4,6-Tribromophenol (S)	SW8270C		19 - 122		**75.7**		%	05/21/23	23:12	MT	474904

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12 (29-30.5)	**Lab Sample ID:**	2305105-022A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 11:20		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/20/23 10:17:00AM
Prep Batch ID:	1151171	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2-Fluorobiphenyl (S)	SW8270C		45 - 143		**76.9**		%	05/21/23	23:12	MT	474904
Nitrobenzene-d5 (S)	SW8270C		23 - 120		**71.4**		%	05/21/23	23:12	MT	474904
p-Terphenyl-d14 (S)	SW8270C		18 - 137		**91.6**		%	05/21/23	23:12	MT	474904

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12 (29-30.5)	**Lab Sample ID:**	2305105-022A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 11:20		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/22/23 9:55:00AM
Prep Batch ID:	1151218	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	1.2	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Chloromethane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Vinyl Chloride	SW8260B	1	2.0	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Bromomethane	SW8260B	1	2.7	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Chloroethane	SW8260B	1	3.0	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Trichlorofluoromethane	SW8260B	1	2.1	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,1-Dichloroethene	SW8260B	1	2.0	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Freon 113	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Methylene Chloride	SW8260B	1	7.1	10	ND		ug/Kg	05/22/23	14:29	BP	474921
trans-1,2-Dichloroethene	SW8260B	1	2.1	10	ND		ug/Kg	05/22/23	14:29	BP	474921
MTBE	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	14:29	BP	474921
TBA	SW8260B	1	12	50	ND		ug/Kg	05/22/23	14:29	BP	474921
Diisopropyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,1-Dichloroethane	SW8260B	1	2.2	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Ethyl tert-Butyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	14:29	BP	474921
cis-1,2-Dichloroethene	SW8260B	1	2.2	10	ND		ug/Kg	05/22/23	14:29	BP	474921
2,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Bromochloromethane	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Chloroform	SW8260B	1	2.4	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Carbon Tetrachloride	SW8260B	1	2.1	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,1,1-Trichloroethane	SW8260B	1	2.1	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,1-Dichloropropene	SW8260B	1	2.0	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Benzene	SW8260B	1	2.2	10	ND		ug/Kg	05/22/23	14:29	BP	474921
TAME	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,2-Dichloroethane	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Trichloroethene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Dibromomethane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Bromodichloromethane	SW8260B	1	2.0	10	ND		ug/Kg	05/22/23	14:29	BP	474921
cis-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Toluene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Tetrachloroethene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	14:29	BP	474921
trans-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,1,2-Trichloroethane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Dibromochloromethane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,3-Dichloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,2-Dibromoethane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Chlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Ethylbenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	14:29	BP	474921

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/12/23, 10:20 am
Date Reported: 05/19/23

Client Sample ID:	B-12 (29-30.5)	**Lab Sample ID:**	2305105-022A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/08/23 / 11:20		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/22/23 9:55:00AM
Prep Batch ID:	1151218	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	14:29	BP	474921
m,p-Xylene	SW8260B	1	3.2	10	ND		ug/Kg	05/22/23	14:29	BP	474921
o-Xylene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Styrene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Bromoform	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Isopropyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	14:29	BP	474921
n-Propylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Bromobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,1,2,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	14:29	BP	474921
2-Chlorotoluene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,3,5-Trimethylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,2,3-Trichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	14:29	BP	474921
4-Chlorotoluene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	14:29	BP	474921
tert-Butylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,2,4-Trimethylbenzene	SW8260B	1	1.4	10	ND		ug/Kg	05/22/23	14:29	BP	474921
sec-Butyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	14:29	BP	474921
p-Isopropyltoluene	SW8260B	1	1.5	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,3-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,4-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	14:29	BP	474921
n-Butylbenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,2-Dichlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,2-Dibromo-3-Chloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Hexachlorobutadiene	SW8260B	1	1.4	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,2,4-Trichlorobenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/22/23	14:29	BP	474921
Naphthalene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	14:29	BP	474921
1,2,3-Trichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	14:29	BP	474921
2-Butanone	SW8260B	1	2.3	10.0	ND		ug/Kg	05/22/23	14:29	BP	474921
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**116**		%	05/22/23	14:29	BP	474921
(S) Toluene-d8	SW8260B		55.2 - 133		**104**		%	05/22/23	14:29	BP	474921
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**98.7**		%	05/22/23	14:29	BP	474921

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305105	**Prep Method:**	3546_OCP	**Prep Date:**	05/13/23	**Prep Batch:**	1150929
Matrix:	Soil	**Analytical Method:**	SW8081B	**Analyzed Date:**	5/13/2023	**Analytical Batch:**	474648
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
alpha-BHC	0.25	2.0	ND	
gamma-BHC (Lindane)	0.71	2.0	ND	
beta-BHC	0.44	2.0	ND	
delta-BHC	0.65	2.0	ND	
Heptachlor	0.27	2.0	ND	
Aldrin	0.29	2.0	ND	
Heptachlor Epoxide	0.31	2.0	ND	
gamma-Chlordane	1.5	3.0	ND	
alpha-Chlordane	0.36	2.0	ND	
4,4'-DDE	0.61	2.0	1.97	
Endosulfan I	0.29	2.0	ND	
Dieldrin	0.25	2.0	ND	
Endrin	0.79	2.0	ND	
4,4'-DDD	0.64	2.0	ND	
Endosulfan II	0.34	2.0	ND	
4,4'-DDT	0.74	2.0	ND	
Endrin Aldehyde	0.51	2.0	ND	
Methoxychlor	2.6	6.0	ND	
Endosulfan Sulfate	0.51	2.0	ND	
Endrin Ketone	0.43	2.0	ND	
Chlordane, Technical	2.7	20	ND	
Toxaphene	22	50	ND	
Tetrachloro-M-Xylene (S)			89.6	
Decachlorobiphenyl (S)			92.9	

Work Order:	2305105	**Prep Method:**	3546_PCB	**Prep Date:**	05/16/23	**Prep Batch:**	1150974
Matrix:	Soil	**Analytical Method:**	SW8082A	**Analyzed Date:**	5/16/2023	**Analytical Batch:**	474707
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Aroclor1016	35.0	100	ND	
Aroclor1221	5.00	100	ND	
Aroclor1232	17.0	100	ND	
Aroclor1242	3.00	100	ND	
Aroclor1248	2.00	100	ND	
Aroclor1254	14.0	100	ND	
Aroclor1260	24.0	100	ND	
TCMX (S)			103	
DCBP (S)			87.0	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305105	**Prep Method:**	3050B	**Prep Date:**	05/16/23	**Prep Batch:**	1150990
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/16/2023	**Analytical Batch:**	474758
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Antimony	0.050	5.00	0.24	J
Arsenic	0.15	1.30	0.15	
Barium	0.055	5.00	ND	
Beryllium	0.055	5.00	ND	
Cadmium	0.10	0.750	ND	
Chromium	0.075	5.00	0.11	J
Cobalt	0.070	5.00	ND	
Copper	0.20	5.00	ND	
Lead	0.10	3.00	ND	
Molybdenum	0.050	5.00	0.18	J
Nickel	0.50	5.00	ND	
Selenium	0.35	1.10	ND	
Silver	0.15	0.500	ND	
Thallium	0.55	5.00	ND	
Vanadium	0.10	5.00	ND	
Zinc	0.30	5.00	1.4	J

Work Order:	2305105	**Prep Method:**	7471BP	**Prep Date:**	05/16/23	**Prep Batch:**	1150991
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/17/2023	**Analytical Batch:**	474739
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Mercury	0.083	0.50	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305105	**Prep Method:**	3050B	**Prep Date:**	05/17/23	**Prep Batch:**	1151065
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474846
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Antimony	0.050	5.00	0.065	
Arsenic	0.15	1.30	ND	
Barium	0.055	5.00	0.19	
Beryllium	0.055	5.00	ND	
Cadmium	0.10	0.750	ND	
Chromium	0.075	5.00	0.16	
Cobalt	0.070	5.00	ND	
Copper	0.20	5.00	ND	
Lead	0.10	3.00	ND	
Molybdenum	0.050	5.00	0.15	
Nickel	0.50	5.00	ND	
Selenium	0.35	1.10	ND	
Silver	0.15	0.500	ND	
Thallium	0.55	5.00	ND	
Vanadium	0.10	5.00	ND	
Zinc	0.30	5.00	ND	

Work Order:	2305105	**Prep Method:**	7471BP	**Prep Date:**	05/17/23	**Prep Batch:**	1151067
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474773
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Mercury	0.083	0.50	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305105	**Prep Method:**	3546_BNA	**Prep Date:**	05/19/23	**Prep Batch:**	1151137
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474887
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
N-Nitrosodimethylamine	46.9	720	ND		
Phenol	43.8	288	ND		
Bis(2-chloroethyl)ether	13.3	144	ND		
2-Chlorophenol	47.7	288	ND		
1,3-Dichlorobenzene	13.1	144	ND		
1,4-Dichlorobenzene	14.6	144	ND		
Benzyl Alcohol	20.5	288	ND		
1,2-Dichlorobenzene	13.5	144	ND		
2-Methylphenol (o-Cresol)	29.3	288	ND		
N-Methyl-2-Pyrrolidone (NMP)	68.0	720	ND		
	12.6	144	ND		
3-/4-Methylphenol (p-/m-Cresol)	31.3	288	ND		
N-nitroso-di-n-propylamine	13.2	144	ND		
Hexachloroethane	17.1	144	ND		
Nitrobenzene	12.8	144	ND		
Isophorone	12.2	144	ND		
2-Nitrophenol	25.4	288	ND		
2,4-Dimethylphenol	22.8	288	ND		
Benzoic Acid	41.7	288	ND		
Bis(2-Chloroethoxy)methane	9.79	144	ND		
Bis(2-chloroisopropyl)ether	12.6	144	ND		
2,4-Dichlorophenol	39.3	288	ND		
1,2,4-Trichlorobenzene	11.8	144	ND		
Naphthalene	10.6	144	ND		
2,6-Dichlorophenol	35.8	288	ND		
Hexachloro-1,3-butadiene	8.34	144	ND		
4-Chloro-3-methylphenol	33.8	288	ND		
2-Methylnaphthalene	10.4	144	ND		
1-Methylnaphthalene	12.2	144	ND		
Hexachlorocyclopentadiene	12.9	144	ND		
2,4,6-Trichlorophenol	35.9	288	ND		
2,4,5-Trichlorophenol	33.4	288	ND		
2-Chloronaphthalene	10.6	144	ND		
1,4-Dinitrobenzene	10.3	144	ND		
Dimethyl phthalate	14.2	720	ND		
1,3-Dinitrobenzene	10.4	144	ND		
Acenaphthylene	8.28	144	ND		
2,6-Dinitrotoluene	11.3	144	ND		
1,2-Dinitrobenzene	15.8	144	ND		
Acenaphthene	10.7	144	ND		
2,4-Dinitrophenol	77.6	720	ND		
4-Nitrophenol	54.7	720	ND		
Dibenzofuran	11.2	144	ND		
2,4-Dinitrotoluene	12.1	144	ND		
2,3,5,6-Tetrachlorophenol	27.6	288	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305105	**Prep Method:**	3546_BNA	**Prep Date:**	05/19/23	**Prep Batch:**	1151137
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474887
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
2,3,4,6-Tetrachlorophenol	31.5	288	ND	
Diethylphthalate	13.6	720	79.2	
Fluorene	10.3	144	ND	
4-Chlorophenyl-phenylether	9.32	144	ND	
4,6-Dinitro-2-methylphenol	13.4	288	ND	
Diphenylamine	13.0	144	ND	
Azobenzene	114	144	ND	
4-Bromophenyl-phenylether	8.23	144	ND	
Hexachlorobenzene	8.66	144	ND	
Pentachlorophenol	25.0	288	ND	
Phenanthrene	9.32	144	ND	
Anthracene	8.91	144	ND	
Carbazole	10.7	144	ND	
Di-n-butylphthalate	13.5	144	ND	
Fluoranthene	10.0	147	ND	
Benzidine	147	144	ND	
Pyrene	12.0	144	ND	
Butylbenzylphthalate	21.0	720	ND	
Benzo(a)anthracene	9.80	144	ND	
3,3-Dichlorobenzidine	118	144	ND	
Chrysene	15.2	144	ND	
Bis(2-Ethylhexyl)phthalate	15.3	720	ND	
Di-n-Octylphthalate	12.3	144	ND	
Benzo(b)fluorathene	12.0	144	ND	
benzo(k)fluorathene	8.16	144	ND	
Benzo(a)pyrene	9.80	144	ND	
Indeno(1,2,3-c,d)pyrene	13.8	144	ND	
Dibenzo(a,h)anthracene	12.7	144	ND	
Benzo(g,h,i)perylene	12.7	144	ND	
Pyridine	43.8	720	ND	
2-Fluorophenol (S)			88.1	
Phenol-d6 (S)			105	
2,4,6-Tribromophenol (S)			96.0	
2-Fluorobiphenyl (S)			80.2	
Nitrobenzene-d5 (S)			88.9	
p-Terphenyl-d14 (S)			91.7	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305105	**Prep Method:**	7199MP	**Prep Date:**	05/18/23	**Prep Batch:**	1151157
Matrix:	Soil	**Analytical Method:**	SW7199	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474857
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Hexavalent Chromium	3.1	10	ND		

Work Order:	2305105	**Prep Method:**	7199MP	**Prep Date:**	05/18/23	**Prep Batch:**	1151158
Matrix:	Soil	**Analytical Method:**	SW7199	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474858
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Hexavalent Chromium	3.1	10	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305105	**Prep Method:**	3546_BNA	**Prep Date:**	05/20/23	**Prep Batch:**	1151171
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/21/2023	**Analytical Batch:**	474904
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
N-Nitrosodimethylamine	46.9	720	ND		
Phenol	43.8	288	ND		
Bis(2-chloroethyl)ether	13.3	144	ND		
2-Chlorophenol	47.7	288	ND		
1,3-Dichlorobenzene	13.1	144	ND		
1,4-Dichlorobenzene	14.6	144	ND		
Benzyl Alcohol	20.5	288	ND		
1,2-Dichlorobenzene	13.5	144	ND		
2-Methylphenol (o-Cresol)	29.3	288	ND		
N-Methyl-2-Pyrrolidone (NMP)	68.0	720	ND		
	12.6	144	ND		
3-/4-Methylphenol (p-/m-Cresol)	31.3	288	ND		
N-nitroso-di-n-propylamine	13.2	144	ND		
Hexachloroethane	17.1	144	ND		
Nitrobenzene	12.8	144	ND		
Isophorone	12.2	144	ND		
2-Nitrophenol	25.4	288	ND		
2,4-Dimethylphenol	22.8	288	ND		
Benzoic Acid	41.7	288	ND		
Bis(2-Chloroethoxy)methane	9.79	144	ND		
Bis(2-chloroisopropyl)ether	12.6	144	ND		
2,4-Dichlorophenol	39.3	288	ND		
1,2,4-Trichlorobenzene	11.8	144	ND		
Naphthalene	10.6	144	ND		
2,6-Dichlorophenol	35.8	288	ND		
Hexachloro-1,3-butadiene	8.34	144	ND		
4-Chloro-3-methylphenol	33.8	288	ND		
2-Methylnaphthalene	10.4	144	ND		
1-Methylnaphthalene	12.2	144	ND		
Hexachlorocyclopentadiene	12.9	144	ND		
2,4,6-Trichlorophenol	35.9	288	ND		
2,4,5-Trichlorophenol	33.4	288	ND		
2-Chloronaphthalene	10.6	144	ND		
1,4-Dinitrobenzene	10.3	144	ND		
Dimethyl phthalate	14.2	720	ND		
1,3-Dinitrobenzene	10.4	144	ND		
Acenaphthylene	8.28	144	ND		
2,6-Dinitrotoluene	11.3	144	ND		
1,2-Dinitrobenzene	15.8	144	ND		
Acenaphthene	10.7	144	ND		
2,4-Dinitrophenol	77.6	720	ND		
4-Nitrophenol	54.7	720	ND		
Dibenzofuran	11.2	144	ND		
2,4-Dinitrotoluene	12.1	144	ND		
2,3,5,6-Tetrachlorophenol	27.6	288	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305105	**Prep Method:**	3546_BNA	**Prep Date:**	05/20/23	**Prep Batch:**	1151171
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/21/2023	**Analytical Batch:**	474904
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
2,3,4,6-Tetrachlorophenol	31.5	288	ND	
Diethylphthalate	13.6	720	ND	
Fluorene	10.3	144	ND	
4-Chlorophenyl-phenylether	9.32	144	ND	
4,6-Dinitro-2-methylphenol	13.4	288	ND	
Diphenylamine	13.0	144	ND	
Azobenzene	114	144	ND	
4-Bromophenyl-phenylether	8.23	144	ND	
Hexachlorobenzene	8.66	144	ND	
Pentachlorophenol	25.0	288	ND	
Phenanthrene	9.32	144	ND	
Anthracene	8.91	144	ND	
Carbazole	10.7	144	ND	
Di-n-butylphthalate	13.5	144	ND	
Fluoranthene	10.0	147	ND	
Benzidine	147	144	ND	
Pyrene	12.0	144	ND	
Butylbenzylphthalate	21.0	720	ND	
Benzo(a)anthracene	9.80	144	ND	
3,3-Dichlorobenzidine	118	144	ND	
Chrysene	15.2	144	ND	
Bis(2-Ethylhexyl)phthalate	15.3	720	ND	
Di-n-Octylphthalate	12.3	144	ND	
Benzo(b)fluorathene	12.0	144	ND	
benzo(k)fluorathene	8.16	144	ND	
Benzo(a)pyrene	9.80	144	ND	
Indeno(1,2,3-c,d)pyrene	13.8	144	ND	
Dibenzo(a,h)anthracene	12.7	144	ND	
Benzo(g,h,i)perylene	12.7	144	ND	
Pyridine	43.8	720	ND	
2-Fluorophenol (S)			96.9	
Phenol-d6 (S)			106	
2,4,6-Tribromophenol (S)			73.4	
2-Fluorobiphenyl (S)			97.9	
Nitrobenzene-d5 (S)			94.1	
p-Terphenyl-d14 (S)			106	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305105	**Prep Method:**	5035	**Prep Date:**	05/20/23	**Prep Batch:**	1151199
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/20/2023	**Analytical Batch:**	474889
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Dichlorodifluoromethane	1.2	10	ND		
Chloromethane	1.8	10	ND		
Vinyl Chloride	2.0	10	ND		
Bromomethane	2.7	10	ND		
Chloroethane	3.0	10	ND		
Trichlorofluoromethane	2.1	10	ND		
1,1-Dichloroethene	2.0	10	ND		
Freon 113	1.9	10	ND		
Methylene Chloride	7.1	10	ND		
trans-1,2-Dichloroethene	2.1	10	ND		
MTBE	2.3	10	ND		
TBA	12	50	ND		
Diisopropyl ether	2.3	10	ND		
1,1-Dichloroethane	2.2	10	ND		
Ethyl tert-Butyl ether	2.3	10	ND		
cis-1,2-Dichloroethene	2.2	10	ND		
2,2-Dichloropropane	1.9	10	ND		
Bromochloromethane	2.3	10	ND		
Chloroform	2.4	10	ND		
Carbon Tetrachloride	2.1	10	ND		
1,1,1-Trichloroethane	2.1	10	ND		
1,1-Dichloropropene	2.0	10	ND		
Benzene	2.2	10	ND		
TAME	2.3	10	ND		
1,2-Dichloroethane	2.3	10	ND		
Trichloroethene	1.8	10	ND		
Dibromomethane	1.8	10	ND		
1,2-Dichloropropane	1.9	10	ND		
Bromodichloromethane	2.0	10	ND		
cis-1,3-Dichloropropene	1.6	10	ND		
Toluene	1.8	10	ND		
Tetrachloroethene	1.7	10	ND		
trans-1,3-Dichloropropene	1.6	10	ND		
1,1,2-Trichloroethane	1.8	10	ND		
Dibromochloromethane	1.9	10	ND		
1,3-Dichloropropane	1.8	10	ND		
1,2-Dibromoethane	1.8	10	ND		
Chlorobenzene	1.8	10	ND		
Ethylbenzene	1.7	10	ND		
1,1,1,2-Tetrachloroethane	1.9	10	ND		
m,p-Xylene	3.2	10	ND		
o-Xylene	1.7	10	ND		
Styrene	1.6	10	ND		
Bromoform	1.7	10	ND		
Isopropyl Benzene	1.6	10	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305105	**Prep Method:**	5035	**Prep Date:**	05/20/23	**Prep Batch:**	1151199
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/20/2023	**Analytical Batch:**	474889
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
n-Propylbenzene	1.6	10	ND	
Bromobenzene	1.8	10	ND	
1,1,2,2-Tetrachloroethane	1.9	10	ND	
2-Chlorotoluene	1.8	10	ND	
1,3,5-Trimethylbenzene	1.6	10	ND	
1,2,3-Trichloropropane	1.9	10	ND	
4-Chlorotoluene	1.6	10	ND	
tert-Butylbenzene	1.6	10	ND	
1,2,4-Trimethylbenzene	1.4	10	ND	
sec-Butyl Benzene	1.6	10	ND	
p-Isopropyltoluene	1.5	10	ND	
1,3-Dichlorobenzene	1.7	10	ND	
1,4-Dichlorobenzene	1.7	10	ND	
n-Butylbenzene	1.5	10	ND	
1,2-Dichlorobenzene	1.8	10	ND	
1,2-Dibromo-3-Chloropropane	1.8	10	ND	
Hexachlorobutadiene	1.4	10	ND	
1,2,4-Trichlorobenzene	1.5	10	ND	
Naphthalene	1.7	10	2.5	
1,2,3-Trichlorobenzene	1.7	10	ND	
2-Butanone	2.3	10	ND	
(S) Dibromofluoromethane			115	
(S) Toluene-d8			103	
(S) 4-Bromofluorobenzene			102	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305105	**Prep Method:**	5035	**Prep Date:**	05/22/23	**Prep Batch:**	1151218
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/22/2023	**Analytical Batch:**	474921
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Dichlorodifluoromethane	1.2	10	ND		
Chloromethane	1.8	10	ND		
Vinyl Chloride	2.0	10	ND		
Bromomethane	2.7	10	ND		
Chloroethane	3.0	10	ND		
Trichlorofluoromethane	2.1	10	ND		
1,1-Dichloroethene	2.0	10	ND		
Freon 113	1.9	10	ND		
Methylene Chloride	7.1	10	ND		
trans-1,2-Dichloroethene	2.1	10	ND		
MTBE	2.3	10	ND		
TBA	12	50	ND		
Diisopropyl ether	2.3	10	ND		
1,1-Dichloroethane	2.2	10	ND		
Ethyl tert-Butyl ether	2.3	10	ND		
cis-1,2-Dichloroethene	2.2	10	ND		
2,2-Dichloropropane	1.9	10	ND		
Bromochloromethane	2.3	10	ND		
Chloroform	2.4	10	ND		
Carbon Tetrachloride	2.1	10	ND		
1,1,1-Trichloroethane	2.1	10	ND		
1,1-Dichloropropene	2.0	10	ND		
Benzene	2.2	10	ND		
TAME	2.3	10	ND		
1,2-Dichloroethane	2.3	10	ND		
Trichloroethene	1.8	10	ND		
Dibromomethane	1.8	10	ND		
1,2-Dichloropropane	1.9	10	ND		
Bromodichloromethane	2.0	10	ND		
cis-1,3-Dichloropropene	1.6	10	ND		
Toluene	1.8	10	ND		
Tetrachloroethene	1.7	10	ND		
trans-1,3-Dichloropropene	1.6	10	ND		
1,1,2-Trichloroethane	1.8	10	ND		
Dibromochloromethane	1.9	10	ND		
1,3-Dichloropropane	1.8	10	ND		
1,2-Dibromoethane	1.8	10	ND		
Chlorobenzene	1.8	10	ND		
Ethylbenzene	1.7	10	ND		
1,1,1,2-Tetrachloroethane	1.9	10	ND		
m,p-Xylene	3.2	10	ND		
o-Xylene	1.7	10	ND		
Styrene	1.6	10	ND		
Bromoform	1.7	10	ND		
Isopropyl Benzene	1.6	10	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305105	**Prep Method:**	5035	**Prep Date:**	05/22/23	**Prep Batch:**	1151218
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/22/2023	**Analytical Batch:**	474921
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
n-Propylbenzene	1.6	10	ND	
Bromobenzene	1.8	10	ND	
1,1,2,2-Tetrachloroethane	1.9	10	ND	
2-Chlorotoluene	1.8	10	ND	
1,3,5-Trimethylbenzene	1.6	10	ND	
1,2,3-Trichloropropane	1.9	10	ND	
4-Chlorotoluene	1.6	10	ND	
tert-Butylbenzene	1.6	10	ND	
1,2,4-Trimethylbenzene	1.4	10	ND	
sec-Butyl Benzene	1.6	10	ND	
p-Isopropyltoluene	1.5	10	ND	
1,3-Dichlorobenzene	1.7	10	ND	
1,4-Dichlorobenzene	1.7	10	ND	
n-Butylbenzene	1.5	10	ND	
1,2-Dichlorobenzene	1.8	10	ND	
1,2-Dibromo-3-Chloropropane	1.8	10	ND	
Hexachlorobutadiene	1.4	10	ND	
1,2,4-Trichlorobenzene	1.5	10	ND	
Naphthalene	1.7	10	2.5	
1,2,3-Trichlorobenzene	1.7	10	ND	
2-Butanone	2.3	10	ND	
(S) Dibromofluoromethane			114	
(S) Toluene-d8			103	
(S) 4-Bromofluorobenzene			98.7	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305105	**Prep Method:**	3546_OCP	**Prep Date:**	05/13/23	**Prep Batch:**	1150929
Matrix:	Soil	**Analytical Method:**	SW8081B	**Analyzed Date:**	5/13/2023	**Analytical Batch:**	474648
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
gamma-BHC (Lindane)	0.16	2.0	ND	40	81.7	85.6	4.78	25 - 135	30	
Heptachlor	0.11	2.0	ND	40	85.9	90.8	5.37	40 - 130	30	
Aldrin	0.20	2.0	ND	40	86.6	90.2	3.95	25 - 140	30	
delta-BHC	0.15	2.0	ND	40	86.3	91.6	5.91	60 - 130	30	
Heptachlor	0.19	2.0	ND	40	87.4	92.2	5.29	55 - 135	30	
4,4'-DDT	0.13	2.0	ND	40	88.1	94.2	6.86	45 - 140	30	
Tetrachloro-M-Xylene (S)				100	82.9	83.0		48 - 125		
Decachlorobiphenyl (S)				100	93.1	94.9		38 - 135		

Work Order:	2305105	**Prep Method:**	3546_PCB	**Prep Date:**	05/16/23	**Prep Batch:**	1150974
Matrix:	Soil	**Analytical Method:**	SW8082A	**Analyzed Date:**	5/16/2023	**Analytical Batch:**	474707
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Aroclor1016	53	100	ND	600	137	145	5.43	25 - 145	30	
Aroclor1260	36	100	ND	600	126	132	4.77	30 - 145	30	
TCMX (S)				0.10	125	124		48 - 125		
DCBP (S)				0.10	114	120		48 - 135		

Work Order:	2305105	**Prep Method:**	3050B	**Prep Date:**	05/16/23	**Prep Batch:**	1150990
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/17/2023	**Analytical Batch:**	474758
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony	0.050	5.00	0.24	50	103	103	0.000	80 - 120	30	
Arsenic	0.15	1.30	0.15	50	101	101	0.000	80 - 120	30	
Barium	0.055	5.00	ND	50	106	105	0.948	80 - 120	30	
Beryllium	0.055	5.00	ND	50	105	105	0.000	80 - 120	30	
Cadmium	0.10	0.750	ND	50	104	102	1.94	80 - 120	30	
Chromium	0.075	5.00	0.11	50	106	105	0.948	80 - 120	30	
Cobalt	0.070	5.00	ND	50	106	103	2.87	80 - 120	30	
Copper	0.20	5.00	ND	50	108	108	0.000	80 - 120	30	
Lead	0.10	3.00	ND	50	104	102	1.94	80 - 120	30	
Molybdenum	0.050	5.00	0.18	50	105	104	0.957	80 - 120	30	
Nickel	0.50	5.00	ND	50	105	104	0.957	80 - 120	30	
Selenium	0.22	5.00	ND	50	93.6	93.3	0.214	80 - 120	30	
Silver	0.15	5.00	ND	50	103	103	0.000	80 - 120	30	
Thallium	0.20	5.00	ND	50	104	104	0.000	80 - 120	30	
Vanadium	0.10	5.00	ND	50	106	105	0.948	80 - 120	30	
Zinc	0.30	5.00	1.4	50	103	103	0.000	80 - 120	30	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305105	**Prep Method:**	7471BP	**Prep Date:**	05/16/23	**Prep Batch:**	1150991
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/17/2023	**Analytical Batch:**	474739
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury	0.047	0.50	ND	1.25	114	104	9.52	80 - 120	20	

Work Order:	2305105	**Prep Method:**	3050B	**Prep Date:**	05/17/23	**Prep Batch:**	1151065
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474846
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony	0.050	5.00	0.065	50	99.7	100	0.200	80 - 120	30	
Arsenic	0.15	1.30	ND	50	98.4	98.7	0.406	80 - 120	30	
Barium	0.055	5.00	0.19	50	103	103	0.000	80 - 120	30	
Beryllium	0.055	5.00	ND	50	102	102	0.000	80 - 120	30	
Cadmium	0.10	0.750	ND	50	101	101	0.000	80 - 120	30	
Chromium	0.075	5.00	0.16	50	103	103	0.000	80 - 120	30	
Cobalt	0.070	5.00	ND	50	102	102	0.000	80 - 120	30	
Copper	0.20	5.00	ND	50	105	105	0.000	80 - 120	30	
Lead	0.10	3.00	ND	50	102	102	0.000	80 - 120	30	
Molybdenum	0.050	5.00	0.15	50	103	103	0.000	80 - 120	30	
Nickel	0.50	5.00	ND	50	102	102	0.000	80 - 120	30	
Selenium	0.22	5.00	ND	50	91.8	92.4	0.651	80 - 120	30	
Silver	0.15	5.00	ND	50	100	101	0.995	80 - 120	30	
Thallium	0.20	5.00	ND	50	99.7	101	1.20	80 - 120	30	
Vanadium	0.10	5.00	ND	50	103	103	0.000	80 - 120	30	
Zinc	0.30	5.00	ND	50	100	101	0.995	80 - 120	30	

Work Order:	2305105	**Prep Method:**	7471BP	**Prep Date:**	05/17/23	**Prep Batch:**	1151067
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474773
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury	0.047	0.50	ND	1.25	117	117	0.000	80 - 120	20	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305105	**Prep Method:**	3546_BNA	**Prep Date:**	05/19/23	**Prep Batch:**	1151137
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474887
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Phenol	43.8	288	ND	1200	92.5	94.2	1.79	40 - 100	30	
2-Chlorophenol	47.7	288	ND	1200	92.4	88.8	3.67	45 - 105	30	
Bis(2-chloroethyl)ether	14.6	144	ND	400	76.2	75.7	0.658	35 - 105	30	
N-nitroso-di-n-propylamine	13.2	144	ND	400	107	109	1.85	40 - 115	30	
1,2,4-Trichlorobenzene	11.8	144	ND	400	78.7	75.4	4.21	45 - 110	30	
1,4-Dichlorobenzene	33.8	288	ND	1200	103	95.8	7.53	45 - 110	30	
Acenaphthene	10.7	144	ND	400	93.0	86.2	7.53	45 - 110	30	
4-Nitrophenol	54.7	720	ND	1200	87.3	81.4	7.31	15 - 140	30	
2,4-Dinitrotoluene	12.1	144	ND	400	91.9	91.3	0.819	50 - 115	30	
N-Methyl-2-Pyrrolidone (NMP)	12.0	144	ND	1200	68.3	70.5	3.12	25 - 120	30	
Pyrene	12.0	144	ND	400	90.7	87.6	3.65	45 - 145	30	
2-Fluorophenol (S)				11100	86.8	84.7		25 - 121		
Phenol-d6 (S)				11100	95.7	98.5		24 - 113		
2,4,6-Tribromophenol (S)				11100	107	97.9		19 - 122		
2-Fluorobiphenyl (S)				5560	89.1	81.3		30 - 143		
Nitrobenzene-d5 (S)				5560	93.6	77.9		23 - 120		
p-Terphenyl-d14 (S)				5560	86.3	79.5		18 - 137		

Work Order:	2305105	**Prep Method:**	7199MP	**Prep Date:**	05/18/23	**Prep Batch:**	1151157
Matrix:	Soil	**Analytical Method:**	SW7199	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474857
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Hexavalent Chromium	3.1	10	ND	100	101	103	1.96	80 - 120	20	

Work Order:	2305105	**Prep Method:**	7199MP	**Prep Date:**	05/18/23	**Prep Batch:**	1151158
Matrix:	Soil	**Analytical Method:**	SW7199	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474858
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Hexavalent Chromium	3.1	10	ND	100	99.6	99.9	0.301	80 - 120	20	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305105	**Prep Method:**	3546_BNA	**Prep Date:**	05/20/23	**Prep Batch:**	1151171
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/21/2023	**Analytical Batch:**	474904
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Phenol	43.8	288	ND	1200	99.0	97.6	1.69	40 - 100	30	
2-Chlorophenol	47.7	288	ND	1200	100	98.6	1.68	45 - 105	30	
Bis(2-chloroethyl)ether	14.6	144	ND	400	91.7	90.5	1.37	35 - 105	30	
N-nitroso-di-n-propylamine	13.2	144	ND	400	93.9	98.1	4.17	40 - 115	30	
1,2,4-Trichlorobenzene	11.8	144	ND	400	103	102	0.244	45 - 110	30	
1,4-Dichlorobenzene	33.8	288	ND	1200	107	106	0.784	45 - 110	30	
Acenaphthene	10.7	144	ND	400	105	103	1.92	45 - 110	30	
4-Nitrophenol	54.7	720	ND	1200	114	111	2.96	15 - 140	30	
2,4-Dinitrotoluene	12.1	144	ND	400	89.5	106	16.6	50 - 115	30	
N-Methyl-2-Pyrrolidone (NMP)	12.0	144	ND	1200	117	114	2.90	25 - 120	30	
Pyrene	12.0	144	ND	400	112	111	0.224	45 - 145	30	
2-Fluorophenol (S)				11100	91.2	90.1		25 - 121		
Phenol-d6 (S)				11100	98.7	96.1		24 - 113		
2,4,6-Tribromophenol (S)				11100	111	121		19 - 122		
2-Fluorobiphenyl (S)				5560	105	102		30 - 143		
Nitrobenzene-d5 (S)				5560	102	101		23 - 120		
p-Terphenyl-d14 (S)				5560	112	109		18 - 137		

Work Order:	2305105	**Prep Method:**	5035	**Prep Date:**	05/20/23	**Prep Batch:**	1151199
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/20/2023	**Analytical Batch:**	474889
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
1,1-Dichloroethene	2.0	10	ND	50.0	101	97.1	4.44	53.7 - 139	30	
Benzene	2.2	10	ND	50.0	107	103	3.43	66.5 - 135	30	
Trichloroethene	1.8	10	ND	50.0	93.4	93.7	0.214	57.5 - 150	30	
Toluene	1.8	10	ND	50.0	101	96.7	4.05	56.8 - 134	30	
Chlorobenzene	1.8	10	ND	50.0	97.7	94.3	3.55	57.4 - 134	30	
(S) Dibromofluoromethane				50.0	106	103		59.8 - 148		
(S) Toluene-d8				50.0	103	99.5		55.2 - 133		
(S) 4-Bromofluorobenzene				50.0	111	108		55.8 - 141		

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305105	**Prep Method:**	5035	**Prep Date:**	05/22/23	**Prep Batch:**	1151218
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/22/2023	**Analytical Batch:**	474921
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
1,1-Dichloroethene	2.0	10	ND	50.0	113	113	0.000	53.7 - 139	30	
Benzene	2.2	10	ND	50.0	111	110	0.544	66.5 - 135	30	
Trichloroethene	1.8	10	ND	50.0	97.9	94.7	3.33	57.5 - 150	30	
Toluene	1.8	10	ND	50.0	102	98.9	2.99	56.8 - 134	30	
Chlorobenzene	1.8	10	ND	50.0	98.7	98.6	0.000	57.4 - 134	30	
(S) Dibromofluoromethane				50.0	113	110		59.8 - 148		
(S) Toluene-d8				50.0	104	103		55.2 - 133		
(S) 4-Bromofluorobenzene				50.0	108	109		55.8 - 141		

Torrent LABORATORY, INC.

MS/MSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305105	**Prep Method:**	3050B	**Prep Date:**	05/17/23	**Prep Batch:**	1151065
Matrix:	**Soil**	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474846
Spiked Sample:	2305105-003A						
Units:	mg/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony	0.050	5.00	ND	50	96.0	99.2	3.28	30.7 - 130	30	
Arsenic	0.15	1.30	ND	50	98.1	101	2.96	71.0 - 121	30	
Barium	0.055	5.00	55.5	50	40.0	37.0	2.01	70.2 - 130	30	S
Beryllium	0.055	5.00	ND	50	102	104	1.94	73.3 - 115	30	
Cadmium	0.10	0.750	ND	50	99.6	102	2.38	80.0 - 110	30	
Chromium	0.075	5.00	5.30	50	104	100	3.54	76.0 - 116	30	
Cobalt	0.070	5.00	ND	50	99.8	102	1.87	57.4 - 122	30	
Copper	0.20	5.00	ND	50	107	108	0.866	74.8 - 119	30	
Lead	0.10	3.00	ND	50	100	101	0.966	57.9 - 118	30	
Molybdenum	0.050	5.00	ND	50	103	105	1.92	62.9 - 123	30	
Nickel	0.50	5.00	ND	50	99.7	101	0.948	61.5 - 122	30	
Selenium	0.22	5.00	ND	50	92.9	94.9	2.13	62.0 - 111	30	
Silver	0.15	5.00	ND	50	103	105	1.92	75 - 125	30	
Thallium	0.20	5.00	ND	50	99.9	102	1.98	39.2 - 125	30	
Vanadium	0.10	5.00	14.2	50	104	101	2.30	65.8 - 122	30	
Zinc	0.30	5.00	17.6	50	89.8	86.8	2.43	59.9 - 122	30	

Work Order:	2305105	**Prep Method:**	7471BP	**Prep Date:**	05/17/23	**Prep Batch:**	1151067
Matrix:	**Soil**	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474773
Spiked Sample:	2305105-003A						
Units:	mg/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury	0.047	0.50	ND	1.25	79.6	73.1	8.60	80 - 120	20	S

Work Order:	2305105	**Prep Method:**	7199MP	**Prep Date:**	05/18/23	**Prep Batch:**	1151158
Matrix:	**Soil**	**Analytical Method:**	SW7199	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474858
Spiked Sample:	2305105-008A						
Units:	ug/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Hexavalent Chromium	3.1	10	249	100	96.3	93.7	0.581	75 - 125	20	

Laboratory Qualifiers and Definitions

DEFINITIONS:

Accuracy/Bias (% Recovery) - The closeness of agreement between an observed value and an accepted reference value.
Blank (Method/Preparation Blank) -MB/PB - An analyte-free matrix to which all reagents are added in the same volumes/proportions as used in sample processing. The method blank is used to document contamination resulting from the analytical process.
Duplicate - a field sample and/or laboratory QC sample prepared in duplicate following all of the same processes and procedures used on the original sample (sample duplicate, LCSD, MSD)
Laboratory Control Sample (LCS ad LCSD) - A known matrix spiked with compounds representative of the target analyte(s). This is used to document laboratory performance.
Matrix - the component or substrate that contains the analyte of interest (e.g., - groundwater, sediment, soil, waste water, etc)
Matrix Spike (MS/MSD) - Client sample spiked with identical concentrations of target analyte (s). The spiking occurs prior to the sample preparation and analysis. They are used to document the precision and bias of a method in a given sample matrix.
Method Detection Limit (MDL) - the minimum concentration of a substance that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero
Practical Quantitation Limit/Reporting Limit/Limit of Quantitation (PQL/RL/LOQ) - a laboratory determined value at 2 to 5 times above the MDL that can be reproduced in a manner that results in a 99% confidence level that the result is both accurate and precise. PQLs/RLs/LODs reflect all preparation factors and/or dilution factors that have been applied to the sample during the preparation and/or analytical processes.
Precision (%RPD) - The agreement among a set of replicate/duplicate measurements without regard to known value of the replicates
Surrogate (S) or (Surr) - An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. Surrogates are used in most organic analysis to demonstrate matrix compatibility with the chosen method of analysis
Tentatively Identified Compound (TIC) - A compound not contained within the analytical calibration standards but present in the GCMS library of defined compounds. When the library is searched for an unknown compound, it can frequently give a tentative identification to the compound based on retention time and primary and secondary ion match. TICs are reported as estimates and are candidates for further investigation.
Units: the unit of measure used to express the reported result - **mg/L** and ***mg/Kg*** (equivalent to PPM - parts per million in **liquid** and ***solid***), **ug/L** and ***ug/Kg*** (equivalent to PPB - parts per billion in **liquid** and ***solid***), **ug/m3**, ***mg/m3***, **ppbv** and ***ppmv*** (all units of measure for reporting concentrations in air), **%** (equivalent to 10000 ppm or 1,000,000 ppb), **ug/Wipe** (concentration found on the surface of a single Wipe usually taken over a 100cm2 surface)

LABORATORY QUALIFIERS

B - Indicates when the analyte is found in the associated method or preparation blank
D - Surrogate is not recoverable due to the necessary dilution of the sample
E - Indicates the reportable value is outside of the calibration range of the instrument but within the linear range of the instrument (unless otherwise noted) Values reported with an E qualifier should be considered as estimated.
H- Indicates that the recommended holding time for the analyte or compound has been exceeded
J- Indicates a value between the method MDL and PQL and that the reported concentration should be considered as estimated rather the quantitative
NA - Not Analyzed
N/A - Not Applicable
ND - Not Detected at a concentration greater than the PQL/RL or, if reported to the MDL, at greater than the MDL.
NR - Not recoverable - a matrix spike concentration is not recoverable due to a concentration within the original sample that is greater than four times the spike concentration added
R- The % RPD between a duplicate set of samples is outside of the absolute values established by laboratory control charts
S- Spike recovery is outside of established method and/or laboratory control limits. Further explanation of the use of this qualifier should be included within a case narrative
X -Used to indicate that a value based on pattern identification is within the pattern range but not typical of the pattern found in standards. Further explanation may or may not be provided within the sample footnote and/or the case narrative.

Sample Receipt Checklist

Client Name: Langan

Project Name: VERNON

Work Order No.: 2305105

Date and Time Received: 5/12/2023 10:20:00AM

Received By: Katherene Evans

Physically Logged By: Katherene Evans

Checklist Completed By: Katherene Evans

Carrier Name: FedEx

Chain of Custody (COC) Information

Chain of custody present?	Yes
Chain of custody signed when relinquished and received?	Yes
Chain of custody agrees with sample labels?	Yes
Custody seals intact on sample bottles?	Not Present

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Not Present
Shipping Container/Cooler In Good Condition?	Yes
Samples in proper container/bottle?	Yes
Samples containers intact?	Yes
Sufficient sample volume for indicated test?	Yes

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes			
Container/Temp Blank temperature in compliance?	Yes	Temperature:	2.0	°C
Water-VOA vials have zero headspace?	No VOA vials submitted			
Water-pH acceptable upon receipt?	N/A			

pH Checked by: na

pH Adjusted by: na

Comments:

Rec'd 2 liners not on CoC. Placed on hold

Torrent LABORATORY, INC.

Login Summary Report

Client ID: TL5493 Langan
Project Name: VERNON
Project # : 721040501
Report Due Date: 5/23/2023

QC Level: II
TAT Requested: 3 Day Std:3
Date Received: 5/12/2023
Time Received: 10:20 am

Comments:

Work Order # : ***2305105***

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
2305105-001A	B-2-5	05/08/23 8:03	Soil	11/04/23			PCBs_S_8082A Cr6_S_7199Mod Pest_S_8081OCP Hg_S_7471B Met_S_6010B CAM17	
2305105-001B	B-2-5	05/08/23 8:03	Soil	11/04/23			Hold Samples 1633 DRAFT_S	
Sample Note:	PFAs due 5/26							
2305105-002A	B-2 (9-10)	05/08/23 8:14	Soil	11/04/23			Hold Samples SVO_S_8270CFull VOC_S_8260B	
Sample Note:	SVOC, VOCs results due 5/23							
2305105-003A	B-2 (14-15)	05/08/23 8:20	Soil	11/04/23			Hold Samples Met_S_6010B CAM17 Cr6_S_7199Mod Hg_S_7471B	
Sample Note:	Additional request for Cr VI & CAM17 due on 5/19							
2305105-004A	B-2 (19-20)	05/08/23 8:25	Soil	11/04/23			Hold Samples	
2305105-005A	B-2 (24-25)	05/08/23 8:30	Soil	11/04/23			Hold Samples	
2305105-006A	B-2 (29-30)	05/08/23 8:32	Soil	11/04/23			Hold Samples SVO_S_8270CFull VOC_S_8260B	
2305105-007A	B-11-5	05/08/23 9:47	Soil	11/04/23			PCBs_S_8082A Cr6_S_7199Mod Pest_S_8081OCP Hg_S_7471B Met_S_6010B CAM17	
2305105-008A	B-11 (9-10)	05/08/23 9:50	Soil	11/04/23			Hold Samples Cr6_S_7199Mod Met_S_6010B CAM17 Hg_S_7471B	

Torrent LABORATORY, INC.

Login Summary Report

Client ID:	TL5493	Langan	**QC Level:**	II
Project Name:	VERNON		**TAT Requested:**	3 Day Std:3
Project # :	721040501		**Date Received:**	5/12/2023
Report Due Date:	5/23/2023		**Time Received:**	10:20 am

Comments:

Work Order # : ***2305105***

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
2305105-009A	B-12-5	05/08/23 10:55	Soil	11/04/23			PCBs_S_8082A Cr6_S_7199Mod Hg_S_7471B Met_S_6010B CAM17	
2305105-009B	B-12-5	05/08/23 10:55	Soil	11/04/23			Hold Samples 1633 DRAFT_S	
2305105-010A	B-12 (9-10)	05/08/23 10:59	Soil	11/04/23			Hold Samples SVO_S_8270CFull VOC_S_8260B	
2305105-011A	B-12 (14-15)	05/08/23 11:08	Soil	11/04/23			Hold Samples Met_S_6010B CAM17 Cr6_S_7199Mod Hg_S_7471B	
2305105-012A	B-12 (17.5-20)	05/08/23 11:12	Soil	11/04/23			Hold Samples	
2305105-013A	B-12 (24-25)	05/08/23 11:17	Soil	11/04/23			Hold Samples	
2305105-014A	B-13-5	05/08/23 12:10	Soil	11/04/23			PCBs_S_8082A Cr6_S_7199Mod Hg_S_7471B Met_S_6010B CAM17	
2305105-014B	B-13-5	05/08/23 12:10	Soil	11/04/23			Hold Samples 1633 DRAFT_S	
2305105-015A	B-13 (9-10)	05/08/23 12:15	Soil	11/04/23			Hold Samples SVO_S_8270CFull VOC_S_8260B	
2305105-016A	B-13 (14-15)	05/08/23 12:17	Soil	11/04/23			Hold Samples Met_S_6010B CAM17 Cr6_S_7199Mod Hg_S_7471B	
2305105-017A	B-13 (19-20)	05/08/23 12:20	Soil	11/04/23			Hold Samples	
2305105-018A	B-13 (24-25)	05/08/23 12:22	Soil	11/04/23			Hold Samples	

Login Summary Report

Client ID:	TL5493	Langan	**QC Level:**	II
Project Name:	VERNON		**TAT Requested:**	3 Day Std:3
Project # :	721040501		**Date Received:**	5/12/2023
Report Due Date:	5/23/2023		**Time Received:**	10:20 am

Comments:

Work Order # : ***2305105***

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
2305105-019A	B-13 (29-30)	05/08/23 12:24	Soil	11/04/23			Hold Samples SVO_S_8270CFull VOC_S_8260B	
2305105-020A	PFAs-DUP	05/08/23	Soil	11/04/23			Hold Samples	
2305105-021A	B-12 (15-17.5)	05/08/23	Soil	11/04/23			Hold Samples	
2305105-022A	B-12 (29-30.5)	05/08/23 11:20	Soil	11/04/23			Hold Samples VOC_S_8260B SVO_S_8270CFull	

Torrent LABORATORY, INC.

Torrent LABORATORY, INC.
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

Reset

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 2305105

Company Name: LANGAN ☐ Env. ☐ Non Env.
Address: 515 S. FLOWER ST, SUITE 1060
City: LA State: CA Zip Code: 90071
Telephone: 213 280 9703 Cell:
REPORT TO: N. CUTLER BILL TO:

Project #: 721062501 PO#:
Project Name: VERNON
Comments: HOLD ALL SAMPLES
SAMPLER: M. CHE
EMAIL: NCUTLER ; MCHE@LANGAN.COM

TURNAROUND TIME:
☐ 2 - 8 Hours ☐ 2 Work Days ☐ 5 Work Days
☐ Noon - Nxt Day ☑ 3 Work Days ☐ 7 Work Days
☐ 1 Work Day ☐ 4 Work Days ☐ 10 Work Days

SAMPLE TYPE:
☐ Drinking Water ☐ Storm Water ☐ Air ☐ Waste Water ☐ Wipe ☐ Ground Water ☐ Other ☐ Soil ☐ Product / Bulk

REPORT FORMAT:
☐ Level II - Std. ☐ DoD/DoE Level III ☐ DoD/DoE Level III ☐ Excel - EDD ☐ EDF ☐ Client Specific EDD

ANALYSIS REQUESTED

LAB ID	CANISTER I.D.	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	VOC 8260B	SVOC 8270 SIM	CAM 17 6010B						REMARKS
001		B-2-5	5/8/23 0803	Soil	2	Glass/ plastic	✓	✓	✓						HOLD
002		B-2 (9-10)	5/8/23 0814	Soil	1	Plastic liner	✓	✓	✓						
003		B-2 (14-15)	5/8/23 0820	Soil	1	Plastic liner	✓	✓	✓						
004		B-2 (19-20)	5/8/23 0825	Soil	1	Plastic liner	✓	✓	✓						
005		B-2 (24-25)	5/8/23 0830	Soil	1	Plastic liner	✓	✓	✓						
006		B-2 (29-30)	5/8/23 0832	Soil	1	Plastic liner	✓	✓	✓						
007		B-11-5	5/8/23 0947	Soil	1	Glass	✓	✓	✓						
008		B-11 (9-10)	5/8/23 0950	Soil	1	Plastic liner	✓	✓	✓						
009		B-12-5	5/8/23 1055	Soil	2	Plastic liner/ ~~Tinder~~ Glass	✓	✓	✓						
010		B-12 (9-10)	5/8/23 1059	Soil	1	Plastic liner	✓	✓	✓						

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	Melody Che	MELODY CHE	5/11/23	1600	Katie	Evans	5-12-23	1012
2	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:

Cooler Temperature 2.4#3 °C Samples Received on ice? Yes ☒ No ☐ Method of Shipment Fed EX

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page of

Torrent LABORATORY, INC.

Torrent LABORATORY, INC.
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

Reset

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 2305105

Company Name: LANGAN ☐ Env. ☐ Non Env.
Address: 515 S. FLOWER ST, SUITE 1060
City: LA State: CA Zip Code: 90071
Telephone: 213 280 9903 Cell:
REPORT TO: BILL TO:

Project #: 721040501 PO#:
Project Name: VERNON
Comments: HOLD SAMPLES FOR ANALYSIS
SAMPLER: M. CHE
EMAIL: NCUTLER AND MCHE@LANGAN.COM

TURNAROUND TIME:
☐ 2 - 8 Hours ☐ 2 Work Days ☐ 5 Work Days
☐ Noon - Nxt Day ☑ 3 Work Days ☐ 7 Work Days
☐ 1 Work Day ☐ 4 Work Days ☐ 10 Work Days

SAMPLE TYPE:
☐ Drinking Water ☐ Storm Water ☐ Air ☐ Waste Water ☐ Wipe ☐ Ground Water ☐ Other ☐ Soil ☐ Product / Bulk

REPORT FORMAT:
☐ Level II - Std.
☐ DoD/DoE Level III
☐ DoD/DoE Level III
☐ Excel - EDD ☐ EDF
☐ Client Specific EDD

ANALYSIS REQUESTED: VOC 8260B; SVOC 8270 SIM; CAM 17 6010B

LAB ID	CANISTER I.D.	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	REMARKS
011		B-12 (14-15)	5/8/23 1108	Soil	1	Plastic liner	HOLD
012		B-12 (17.5-20)	5/8/23 1112	Soil	1	plastic liner	
013		B-12 (24-25)	5/8/23 1117	Soil	1	plastic liner	
014		B-13 - 5	5/8/23 1210	Soil	2	Glass/ plastic	
015		B-13 (9-10)	5/8/23 1215	Soil	1	Plastic liner	
016		B-13 (14-15)	5/8/23 1217	Soil	1	Plastic liner	
017		B-13 (19-20)	MC ~~5/8/23 1217~~ 1220	Soil	1	Plastic liner	
018		B-13 (24-25)	5/8/23 1222	Soil	1	Plastic liner	
019		B-13 (29-30)	5/8/23 1224	Soil	1	Plastic liner	
020		PFAS-DUP	—	Soil	1	Plastic vial	

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	Melody Che	MELODY CHE	5/11/23	1600	Kathie	Evans	5-12-23	10:20
2	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:

Cooler Temperature _____ °C Samples Received on ice? Yes ☐ No ☐ Method of Shipment _____

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page of

Gmail Torrent Laboratory, Inc. <pm@torrentlaboratory.com>

RE: [External] Re: Sample order for PO: 721040501

1 message

Nick Cutler <ncutler@langan.com> Wed, May 10, 2023 at 8:42 PM
To: "Torrent Laboratory, Inc." <pm@torrentlaboratory.com>, Katherine Thomas <kthomas@langan.com>
Cc: "melanie.moran@torrentlaboratory.com" <melanie.moran@torrentlaboratory.com>, Melody Che <mche@langan.com>

Hi Kathie –

Can you please run the analyses on a 3-day TAT per the table below?

Sample ID	Metals 6010B	Pesticides 8081A	PCBs 8082	ACM PLM
B-1-5	1	1		1
B-2-5	1	1	1	
B-3-5	1	1		
B-4-6	1			
B-5-5	1			
B-6-5	1			
B-7-6	1			
B-8-5	1	1		
B-9-5	1			
B-11-5	1	1	1	
B-12-5	1		1	
B-13-5	1		1	

Cordially,
Nick Cutler

483 Sinclair Frontage Rd., Milpitas, CA 95035 | tel: 408.263.5258 | fax: 408.263.8293 | www.torrentlab.com

Langan
135 Main Street, Suite 1500
San Francisco, California 94105
Tel: 415.955.5200

RE: VERNON

Work Order No.: 2305065 Rev: 2

Dear Nick Cutler:

Torrent Laboratory, Inc. received 20 sample(s) on May 09, 2023 for the analyses presented in the following Report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.

Torrent Laboratory, Inc. is certified by the State of California, ELAP #1991. If you have any questions regarding these test results, please feel free to contact the Project Management Team at (408)263-5258; ext 204.



Kathie Evans
Project Manager

May 19, 2023
Date

Torrent LABORATORY, INC.

Date: 5/19/2023

Client: Langan

Project: VERNON

Work Order: 2305065

CASE NARRATIVE

Unless otherwise indicated in the following narrative, no issues encountered with the receiving, preparation, analysis or reporting of the results associated with this work order.

Unless otherwise indicated in the following narrative, no results have been method and/or field blank corrected.

Reported results relate only to the items/samples tested by the laboratory.

This report shall not be reproduced, except in full, without the written approval of Torrent Laboratory, Inc.

REVISIONS

Report revised to include additionally requested data

Rev. 1 (5/19/23)

Report revised to include additionally requested SVOC and VOC data.

Rev. 2 (5/23/23)

Torrent LABORATORY, INC.

Sample Result Summary

Report prepared for: Nick Cutler
Langan

Date Received: 05/09/23
Date Reported: 05/19/23

B-4-6 2305065-001

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	1.83	mg/Kg
Barium	SW6010B	1	0.055	5.00	108	mg/Kg
Chromium	SW6010B	1	0.075	5.00	13.5	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	9.00	mg/Kg
Copper	SW6010B	1	0.20	5.00	12.1	mg/Kg
Nickel	SW6010B	1	0.50	5.00	8.50	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	36.2	mg/Kg
Zinc	SW6010B	1	0.30	5.00	45.6	mg/Kg

B-4-15 2305065-003

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	1.68	mg/Kg
Barium	SW6010B	1	0.055	5.00	84.5	mg/Kg
Chromium	SW6010B	1	0.075	5.00	14.1	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	7.75	mg/Kg
Copper	SW6010B	1	0.20	5.00	15.8	mg/Kg
Nickel	SW6010B	1	0.50	5.00	7.60	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	37.2	mg/Kg
Zinc	SW6010B	1	0.30	5.00	39.6	mg/Kg

B-5-5 2305065-007

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	2.23	mg/Kg
Barium	SW6010B	1	0.055	5.00	89.0	mg/Kg
Chromium	SW6010B	1	0.075	5.00	16.3	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	8.05	mg/Kg
Copper	SW6010B	1	0.20	5.00	21.4	mg/Kg
Lead	SW6010B	1	0.10	3.00	15.4	mg/Kg
Nickel	SW6010B	1	0.50	5.00	9.80	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	40.5	mg/Kg
Zinc	SW6010B	1	0.30	5.00	60.5	mg/Kg

B-5-15 2305065-009

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Barium	SW6010B	1	0.055	5.00	51.5	mg/Kg
Chromium	SW6010B	1	0.075	5.00	7.15	mg/Kg
Copper	SW6010B	1	0.20	5.00	5.50	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	27.9	mg/Kg
Zinc	SW6010B	1	0.30	5.00	22.6	mg/Kg

Torrent LABORATORY, INC.

Sample Result Summary

Report prepared for: Nick Cutler
Langan

Date Received: 05/09/23
Date Reported: 05/19/23

B-5-30 2305065-012

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

B-6-5 2305065-013

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	2.20	mg/Kg
Barium	SW6010B	1	0.055	5.00	103	mg/Kg
Chromium	SW6010B	1	0.075	5.00	15.9	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	9.05	mg/Kg
Copper	SW6010B	1	0.20	5.00	18.6	mg/Kg
Lead	SW6010B	1	0.10	3.00	6.95	mg/Kg
Nickel	SW6010B	1	0.50	5.00	9.15	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	42.2	mg/Kg
Zinc	SW6010B	1	0.30	5.00	53.5	mg/Kg
Hexavalent Chromium	SW7199	1	3.1	10	12.4	ug/Kg

B-6-15 2305065-015

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Barium	SW6010B	1	0.055	5.00	58.0	mg/Kg
Chromium	SW6010B	1	0.075	5.00	5.50	mg/Kg
Copper	SW6010B	1	0.20	5.00	5.80	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	20.2	mg/Kg
Zinc	SW6010B	1	0.30	5.00	23.6	mg/Kg

B-7-6 2305065-019

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	2.31	mg/Kg
Barium	SW6010B	1	0.055	5.00	105	mg/Kg
Chromium	SW6010B	1	0.075	5.00	16.6	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	8.80	mg/Kg
Copper	SW6010B	1	0.20	5.00	22.5	mg/Kg
Lead	SW6010B	1	0.10	3.00	24.1	mg/Kg
Nickel	SW6010B	1	0.50	5.00	10.7	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	38.5	mg/Kg
Zinc	SW6010B	1	0.30	5.00	66.0	mg/Kg

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-4-6	**Lab Sample ID:**	2305065-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 9:54		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/18/23	23:49	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-4-6	**Lab Sample ID:**	2305065-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 9:54		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/15/23	5:45:00PM
Prep Batch ID:	1150976	**Prep Analyst:**	AJNG	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/16/23	13:31	ERR	474697

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-4-6	**Lab Sample ID:**	2305065-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 9:54		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/15/23 5:15:00PM
Prep Batch ID:	1150962	**Prep Analyst:**	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	20:43	AT	474699
Arsenic	SW6010B	1	0.15	1.30	**1.83**		mg/Kg	05/15/23	20:43	AT	474699
Barium	SW6010B	1	0.055	5.00	**108**		mg/Kg	05/15/23	20:43	AT	474699
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/15/23	20:43	AT	474699
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/15/23	20:43	AT	474699
Chromium	SW6010B	1	0.075	5.00	**13.5**		mg/Kg	05/15/23	20:43	AT	474699
Cobalt	SW6010B	1	0.070	5.00	**9.00**		mg/Kg	05/15/23	20:43	AT	474699
Copper	SW6010B	1	0.20	5.00	**12.1**		mg/Kg	05/15/23	20:43	AT	474699
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/15/23	20:43	AT	474699
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	20:43	AT	474699
Nickel	SW6010B	1	0.50	5.00	**8.50**		mg/Kg	05/15/23	20:43	AT	474699
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/15/23	20:43	AT	474699
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/15/23	20:43	AT	474699
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/15/23	20:43	AT	474699
Vanadium	SW6010B	1	0.10	5.00	**36.2**		mg/Kg	05/15/23	20:43	AT	474699
Zinc	SW6010B	1	0.30	5.00	**45.6**		mg/Kg	05/15/23	20:43	AT	474699

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-4-15	**Lab Sample ID:**	2305065-003A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 10:00		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	0:10	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-4-15	**Lab Sample ID:**	2305065-003A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 10:00		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/17/23 7:15:00PM
Prep Batch ID:	1151067	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/18/23	13:54	BJAY	474773

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-4-15	**Lab Sample ID:**	2305065-003A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 10:00		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/17/23 7:00:00PM
Prep Batch ID:	1151065	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:34	AT	474846
Arsenic	SW6010B	1	0.15	1.30	**1.68**		mg/Kg	05/18/23	20:34	AT	474846
Barium	SW6010B	1	0.055	5.00	**84.5**		mg/Kg	05/18/23	20:34	AT	474846
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/18/23	20:34	AT	474846
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/18/23	20:34	AT	474846
Chromium	SW6010B	1	0.075	5.00	**14.1**		mg/Kg	05/18/23	20:34	AT	474846
Cobalt	SW6010B	1	0.070	5.00	**7.75**		mg/Kg	05/18/23	20:34	AT	474846
Copper	SW6010B	1	0.20	5.00	**15.8**		mg/Kg	05/18/23	20:34	AT	474846
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/18/23	20:34	AT	474846
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:34	AT	474846
Nickel	SW6010B	1	0.50	5.00	**7.60**		mg/Kg	05/18/23	20:34	AT	474846
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/18/23	20:34	AT	474846
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/18/23	20:34	AT	474846
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:34	AT	474846
Vanadium	SW6010B	1	0.10	5.00	**37.2**		mg/Kg	05/18/23	20:34	AT	474846
Zinc	SW6010B	1	0.30	5.00	**39.6**		mg/Kg	05/18/23	20:34	AT	474846

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-5-5	**Lab Sample ID:**	2305065-007A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 13:10		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	1:14	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-5-5	**Lab Sample ID:**	2305065-007A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 13:10		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/15/23	5:45:00PM
Prep Batch ID:	1150976	**Prep Analyst:**	AJNG	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/16/23	13:41	ERR	474697

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-5-5	**Lab Sample ID:**	2305065-007A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 13:10		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/15/23 5:15:00PM
Prep Batch ID:	1150962	**Prep Analyst:**	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	20:51	AT	474699
Arsenic	SW6010B	1	0.15	1.30	**2.23**		mg/Kg	05/15/23	20:51	AT	474699
Barium	SW6010B	1	0.055	5.00	**89.0**		mg/Kg	05/15/23	20:51	AT	474699
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/15/23	20:51	AT	474699
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/15/23	20:51	AT	474699
Chromium	SW6010B	1	0.075	5.00	**16.3**		mg/Kg	05/15/23	20:51	AT	474699
Cobalt	SW6010B	1	0.070	5.00	**8.05**		mg/Kg	05/15/23	20:51	AT	474699
Copper	SW6010B	1	0.20	5.00	**21.4**		mg/Kg	05/15/23	20:51	AT	474699
Lead	SW6010B	1	0.10	3.00	**15.4**		mg/Kg	05/15/23	20:51	AT	474699
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	20:51	AT	474699
Nickel	SW6010B	1	0.50	5.00	**9.80**		mg/Kg	05/15/23	20:51	AT	474699
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/15/23	20:51	AT	474699
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/15/23	20:51	AT	474699
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/15/23	20:51	AT	474699
Vanadium	SW6010B	1	0.10	5.00	**40.5**		mg/Kg	05/15/23	20:51	AT	474699
Zinc	SW6010B	1	0.30	5.00	**60.5**		mg/Kg	05/15/23	20:51	AT	474699

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-5-15	**Lab Sample ID:**	2305065-009A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 13:18		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	2:18	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-5-15	**Lab Sample ID:**	2305065-009A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 13:18		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/17/23 7:15:00PM
Prep Batch ID:	1151067	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/18/23	13:56	BJAY	474773

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-5-15	**Lab Sample ID:**	2305065-009A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 13:18		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/17/23 7:00:00PM
Prep Batch ID:	1151065	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:36	AT	474846
Arsenic	SW6010B	1	0.15	1.30	ND		mg/Kg	05/18/23	20:36	AT	474846
Barium	SW6010B	1	0.055	5.00	**51.5**		mg/Kg	05/18/23	20:36	AT	474846
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/18/23	20:36	AT	474846
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/18/23	20:36	AT	474846
Chromium	SW6010B	1	0.075	5.00	**7.15**		mg/Kg	05/18/23	20:36	AT	474846
Cobalt	SW6010B	1	0.070	5.00	ND		mg/Kg	05/18/23	20:36	AT	474846
Copper	SW6010B	1	0.20	5.00	**5.50**		mg/Kg	05/18/23	20:36	AT	474846
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/18/23	20:36	AT	474846
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:36	AT	474846
Nickel	SW6010B	1	0.50	5.00	ND		mg/Kg	05/18/23	20:36	AT	474846
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/18/23	20:36	AT	474846
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/18/23	20:36	AT	474846
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:36	AT	474846
Vanadium	SW6010B	1	0.10	5.00	**27.9**		mg/Kg	05/18/23	20:36	AT	474846
Zinc	SW6010B	1	0.30	5.00	**22.6**		mg/Kg	05/18/23	20:36	AT	474846

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-5-30	**Lab Sample ID:**	2305065-012A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 13:35		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
N-Nitrosodimethylamine	SW8270C	1	46.9	720	ND		ug/Kg	05/21/23	23:42	MT	474888
Phenol	SW8270C	1	43.8	288	ND		ug/Kg	05/21/23	23:42	MT	474888
Bis(2-chloroethyl)ether	SW8270C	1	13.3	144	ND		ug/Kg	05/21/23	23:42	MT	474888
2-Chlorophenol	SW8270C	1	47.7	288	ND		ug/Kg	05/21/23	23:42	MT	474888
1,3-Dichlorobenzene	SW8270C	1	13.1	144	ND		ug/Kg	05/21/23	23:42	MT	474888
1,4-Dichlorobenzene	SW8270C	1	14.6	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Benzyl Alcohol	SW8270C	1	20.5	288	ND		ug/Kg	05/21/23	23:42	MT	474888
1,2-Dichlorobenzene	SW8270C	1	13.5	144	ND		ug/Kg	05/21/23	23:42	MT	474888
2-Methylphenol (o-Cresol)	SW8270C	1	29.3	288	ND		ug/Kg	05/21/23	23:42	MT	474888
N-Methyl-2-Pyrrolidone (NMP)	SW8270C	1	68.0	720	ND		ug/Kg	05/21/23	23:42	MT	474888
3-/4-Methylphenol (p-/m-Cresol)	SW8270C	1	31.3	288	ND		ug/Kg	05/21/23	23:42	MT	474888
N-nitroso-di-n-propylamine	SW8270C	1	13.2	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Hexachloroethane	SW8270C	1	17.1	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Nitrobenzene	SW8270C	1	12.8	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Isophorone	SW8270C	1	12.2	144	ND		ug/Kg	05/21/23	23:42	MT	474888
2-Nitrophenol	SW8270C	1	25.4	288	ND		ug/Kg	05/21/23	23:42	MT	474888
2,4-Dimethylphenol	SW8270C	1	22.8	288	ND		ug/Kg	05/21/23	23:42	MT	474888
Benzoic Acid	SW8270C	1	41.7	288	ND		ug/Kg	05/21/23	23:42	MT	474888
Bis(2-Chloroethoxy)methane	SW8270C	1	9.79	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Bis(2-chloroisopropyl)ether	SW8270C	1	12.6	144	ND		ug/Kg	05/21/23	23:42	MT	474888
2,4-Dichlorophenol	SW8270C	1	39.3	288	ND		ug/Kg	05/21/23	23:42	MT	474888
1,2,4-Trichlorobenzene	SW8270C	1	11.8	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Naphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/21/23	23:42	MT	474888
2,6-Dichlorophenol	SW8270C	1	35.8	288	ND		ug/Kg	05/21/23	23:42	MT	474888
Hexachloro-1,3-butadiene	SW8270C	1	8.34	144	ND		ug/Kg	05/21/23	23:42	MT	474888
4-Chloro-3-methylphenol	SW8270C	1	33.8	288	ND		ug/Kg	05/21/23	23:42	MT	474888
2-Methylnaphthalene	SW8270C	1	10.4	144	ND		ug/Kg	05/21/23	23:42	MT	474888
1-Methylnaphthalene	SW8270C	1	12.2	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Hexachlorocyclopentadiene	SW8270C	1	12.9	144	ND		ug/Kg	05/21/23	23:42	MT	474888
2,4,6-Trichlorophenol	SW8270C	1	35.9	288	ND		ug/Kg	05/21/23	23:42	MT	474888
2,4,5-Trichlorophenol	SW8270C	1	33.4	288	ND		ug/Kg	05/21/23	23:42	MT	474888
2-Chloronaphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/21/23	23:42	MT	474888
1,4-Dinitrobenzene	SW8270C	1	10.3	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Dimethyl phthalate	SW8270C	1	14.2	720	ND		ug/Kg	05/21/23	23:42	MT	474888
1,3-Dinitrobenzene	SW8270C	1	10.4	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Acenaphthylene	SW8270C	1	8.28	144	ND		ug/Kg	05/21/23	23:42	MT	474888
2,6-Dinitrotoluene	SW8270C	1	11.3	144	ND		ug/Kg	05/21/23	23:42	MT	474888
1,2-Dinitrobenzene	SW8270C	1	15.8	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Acenaphthene	SW8270C	1	10.7	144	ND		ug/Kg	05/21/23	23:42	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-5-30	**Lab Sample ID:**	2305065-012A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 13:35		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2,4-Dinitrophenol	SW8270C	1	77.6	720	ND		ug/Kg	05/21/23	23:42	MT	474888
4-Nitrophenol	SW8270C	1	54.7	720	ND		ug/Kg	05/21/23	23:42	MT	474888
Dibenzofuran	SW8270C	1	11.2	144	ND		ug/Kg	05/21/23	23:42	MT	474888
2,4-Dinitrotoluene	SW8270C	1	12.1	144	ND		ug/Kg	05/21/23	23:42	MT	474888
2,3,5,6-Tetrachlorophenol	SW8270C	1	27.6	288	ND		ug/Kg	05/21/23	23:42	MT	474888
2,3,4,6-Tetrachlorophenol	SW8270C	1	31.5	288	ND		ug/Kg	05/21/23	23:42	MT	474888
Diethylphthalate	SW8270C	1	13.6	720	ND		ug/Kg	05/21/23	23:42	MT	474888
Fluorene	SW8270C	1	10.3	144	ND		ug/Kg	05/21/23	23:42	MT	474888
4-Chlorophenyl-phenylether	SW8270C	1	9.32	144	ND		ug/Kg	05/21/23	23:42	MT	474888
4,6-Dinitro-2-methylphenol	SW8270C	1	13.4	288	ND		ug/Kg	05/21/23	23:42	MT	474888
Diphenylamine	SW8270C	1	13.0	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Azobenzene	SW8270C	1	114	144	ND		ug/Kg	05/21/23	23:42	MT	474888
4-Bromophenyl-phenylether	SW8270C	1	8.23	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Hexachlorobenzene	SW8270C	1	8.66	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Pentachlorophenol	SW8270C	1	25.0	288	ND		ug/Kg	05/21/23	23:42	MT	474888
Phenanthrene	SW8270C	1	9.32	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Anthracene	SW8270C	1	8.91	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Carbazole	SW8270C	1	10.7	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Di-n-butylphthalate	SW8270C	1	13.5	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Fluoranthene	SW8270C	1	10.0	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Benzidine	SW8270C	1	147	147	ND		ug/Kg	05/21/23	23:42	MT	474888
Pyrene	SW8270C	1	12.0	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Butylbenzylphthalate	SW8270C	1	21.0	720	ND		ug/Kg	05/21/23	23:42	MT	474888
Benzo(a)anthracene	SW8270C	1	9.80	144	ND		ug/Kg	05/21/23	23:42	MT	474888
3,3-Dichlorobenzidine	SW8270C	1	118	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Chrysene	SW8270C	1	15.2	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Bis(2-Ethylhexyl)phthalate	SW8270C	1	15.3	720	ND		ug/Kg	05/21/23	23:42	MT	474888
Di-n-Octylphthalate	SW8270C	1	12.3	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Benzo(b)fluorathene	SW8270C	1	12.0	144	ND		ug/Kg	05/21/23	23:42	MT	474888
benzo(k)fluorathene	SW8270C	1	8.16	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Benzo(a)pyrene	SW8270C	1	9.80	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Indeno(1,2,3-c,d)pyrene	SW8270C	1	13.8	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Dibenzo(a,h)anthracene	SW8270C	1	12.7	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Benzo(g,h,i)perylene	SW8270C	1	16.7	144	ND		ug/Kg	05/21/23	23:42	MT	474888
Pyridine	SW8270C	1	43.8	720	ND		ug/Kg	05/21/23	23:42	MT	474888
			Acceptance Limits								
2-Fluorophenol (S)	SW8270C		25 - 121		**68.5**		%	05/21/23	23:42	MT	474888
Phenol-d6 (S)	SW8270C		24 - 113		**70.4**		%	05/21/23	23:42	MT	474888
2,4,6-Tribromophenol (S)	SW8270C		19 - 122		**65.4**		%	05/21/23	23:42	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-5-30	**Lab Sample ID:**	2305065-012A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 13:35		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23	11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2-Fluorobiphenyl (S)	SW8270C		45 - 143		**70.3**		%	05/21/23	23:42	MT	474888
Nitrobenzene-d5 (S)	SW8270C		23 - 120		**67.2**		%	05/21/23	23:42	MT	474888
p-Terphenyl-d14 (S)	SW8270C		18 - 137		**93.1**		%	05/21/23	23:42	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-5-30	**Lab Sample ID:**	2305065-012A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 13:35		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/22/23 9:55:00AM
Prep Batch ID:	1151218	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	1.2	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Chloromethane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Vinyl Chloride	SW8260B	1	2.0	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Bromomethane	SW8260B	1	2.7	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Chloroethane	SW8260B	1	3.0	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Trichlorofluoromethane	SW8260B	1	2.1	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,1-Dichloroethene	SW8260B	1	2.0	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Freon 113	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Methylene Chloride	SW8260B	1	7.1	10	ND		ug/Kg	05/22/23	21:00	BP	474921
trans-1,2-Dichloroethene	SW8260B	1	2.1	10	ND		ug/Kg	05/22/23	21:00	BP	474921
MTBE	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	21:00	BP	474921
TBA	SW8260B	1	12	50	ND		ug/Kg	05/22/23	21:00	BP	474921
Diisopropyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,1-Dichloroethane	SW8260B	1	2.2	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Ethyl tert-Butyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	21:00	BP	474921
cis-1,2-Dichloroethene	SW8260B	1	2.2	10	ND		ug/Kg	05/22/23	21:00	BP	474921
2,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Bromochloromethane	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Chloroform	SW8260B	1	2.4	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Carbon Tetrachloride	SW8260B	1	2.1	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,1,1-Trichloroethane	SW8260B	1	2.1	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,1-Dichloropropene	SW8260B	1	2.0	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Benzene	SW8260B	1	2.2	10	ND		ug/Kg	05/22/23	21:00	BP	474921
TAME	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,2-Dichloroethane	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Trichloroethene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Dibromomethane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Bromodichloromethane	SW8260B	1	2.0	10	ND		ug/Kg	05/22/23	21:00	BP	474921
cis-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Toluene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Tetrachloroethene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:00	BP	474921
trans-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,1,2-Trichloroethane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Dibromochloromethane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,3-Dichloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,2-Dibromoethane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Chlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Ethylbenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:00	BP	474921

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-5-30	**Lab Sample ID:**	2305065-012A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/03/23 / 13:35		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/22/23 9:55:00AM
Prep Batch ID:	1151218	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	21:00	BP	474921
m,p-Xylene	SW8260B	1	3.2	10	ND		ug/Kg	05/22/23	21:00	BP	474921
o-Xylene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Styrene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Bromoform	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Isopropyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:00	BP	474921
n-Propylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Bromobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,1,2,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	21:00	BP	474921
2-Chlorotoluene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,3,5-Trimethylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,2,3-Trichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	21:00	BP	474921
4-Chlorotoluene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:00	BP	474921
tert-Butylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,2,4-Trimethylbenzene	SW8260B	1	1.4	10	ND		ug/Kg	05/22/23	21:00	BP	474921
sec-Butyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:00	BP	474921
p-Isopropyltoluene	SW8260B	1	1.5	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,3-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,4-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:00	BP	474921
n-Butylbenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,2-Dichlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,2-Dibromo-3-Chloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Hexachlorobutadiene	SW8260B	1	1.4	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,2,4-Trichlorobenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/22/23	21:00	BP	474921
Naphthalene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:00	BP	474921
1,2,3-Trichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:00	BP	474921
2-Butanone	SW8260B	1	2.3	10.0	ND		ug/Kg	05/22/23	21:00	BP	474921
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**125**		%	05/22/23	21:00	BP	474921
(S) Toluene-d8	SW8260B		55.2 - 133		**104**		%	05/22/23	21:00	BP	474921
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**100**		%	05/22/23	21:00	BP	474921

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-6-5	**Lab Sample ID:**	2305065-013A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 13:32		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	**12.4**		ug/Kg	05/19/23	2:40	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-6-5	**Lab Sample ID:**	2305065-013A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 13:32		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/15/23 5:45:00PM
Prep Batch ID:	1150976	**Prep Analyst:**	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/16/23	13:44	ERR	474697

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-6-5	**Lab Sample ID:**	2305065-013A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 13:32		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/15/23 5:15:00PM
Prep Batch ID:	1150962	**Prep Analyst:**	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	20:53	AT	474699
Arsenic	SW6010B	1	0.15	1.30	**2.20**		mg/Kg	05/15/23	20:53	AT	474699
Barium	SW6010B	1	0.055	5.00	**103**		mg/Kg	05/15/23	20:53	AT	474699
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/15/23	20:53	AT	474699
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/15/23	20:53	AT	474699
Chromium	SW6010B	1	0.075	5.00	**15.9**		mg/Kg	05/15/23	20:53	AT	474699
Cobalt	SW6010B	1	0.070	5.00	**9.05**		mg/Kg	05/15/23	20:53	AT	474699
Copper	SW6010B	1	0.20	5.00	**18.6**		mg/Kg	05/15/23	20:53	AT	474699
Lead	SW6010B	1	0.10	3.00	**6.95**		mg/Kg	05/15/23	20:53	AT	474699
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	20:53	AT	474699
Nickel	SW6010B	1	0.50	5.00	**9.15**		mg/Kg	05/15/23	20:53	AT	474699
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/15/23	20:53	AT	474699
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/15/23	20:53	AT	474699
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/15/23	20:53	AT	474699
Vanadium	SW6010B	1	0.10	5.00	**42.2**		mg/Kg	05/15/23	20:53	AT	474699
Zinc	SW6010B	1	0.30	5.00	**53.5**		mg/Kg	05/15/23	20:53	AT	474699

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-6-15	**Lab Sample ID:**	2305065-015A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 13:43		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	3:01	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-6-15	**Lab Sample ID:**	2305065-015A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 13:43		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/17/23 7:15:00PM
Prep Batch ID:	1151067	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/18/23	13:59	BJAY	474773

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-6-15	**Lab Sample ID:**	2305065-015A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 13:43		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/17/23 7:00:00PM
Prep Batch ID:	1151065	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:37	AT	474846
Arsenic	SW6010B	1	0.15	1.30	ND		mg/Kg	05/18/23	20:37	AT	474846
Barium	SW6010B	1	0.055	5.00	**58.0**		mg/Kg	05/18/23	20:37	AT	474846
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/18/23	20:37	AT	474846
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/18/23	20:37	AT	474846
Chromium	SW6010B	1	0.075	5.00	**5.50**		mg/Kg	05/18/23	20:37	AT	474846
Cobalt	SW6010B	1	0.070	5.00	ND		mg/Kg	05/18/23	20:37	AT	474846
Copper	SW6010B	1	0.20	5.00	**5.80**		mg/Kg	05/18/23	20:37	AT	474846
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/18/23	20:37	AT	474846
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:37	AT	474846
Nickel	SW6010B	1	0.50	5.00	ND		mg/Kg	05/18/23	20:37	AT	474846
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/18/23	20:37	AT	474846
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/18/23	20:37	AT	474846
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:37	AT	474846
Vanadium	SW6010B	1	0.10	5.00	**20.2**		mg/Kg	05/18/23	20:37	AT	474846
Zinc	SW6010B	1	0.30	5.00	**23.6**		mg/Kg	05/18/23	20:37	AT	474846

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-7-6	**Lab Sample ID:**	2305065-019A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 8:09		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	3:22	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-7-6	**Lab Sample ID:**	2305065-019A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 8:09		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/15/23	5:45:00PM
Prep Batch ID:	1150976	**Prep Analyst:**	AJNG	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/16/23	13:46	ERR	474697

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-7-6	**Lab Sample ID:**	2305065-019A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 8:09		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/15/23 5:15:00PM
Prep Batch ID:	1150962	**Prep Analyst:**	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	20:54	AT	474699
Arsenic	SW6010B	1	0.15	1.30	**2.31**		mg/Kg	05/15/23	20:54	AT	474699
Barium	SW6010B	1	0.055	5.00	**105**		mg/Kg	05/15/23	20:54	AT	474699
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/15/23	20:54	AT	474699
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/15/23	20:54	AT	474699
Chromium	SW6010B	1	0.075	5.00	**16.6**		mg/Kg	05/15/23	20:54	AT	474699
Cobalt	SW6010B	1	0.070	5.00	**8.80**		mg/Kg	05/15/23	20:54	AT	474699
Copper	SW6010B	1	0.20	5.00	**22.5**		mg/Kg	05/15/23	20:54	AT	474699
Lead	SW6010B	1	0.10	3.00	**24.1**		mg/Kg	05/15/23	20:54	AT	474699
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	20:54	AT	474699
Nickel	SW6010B	1	0.50	5.00	**10.7**		mg/Kg	05/15/23	20:54	AT	474699
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/15/23	20:54	AT	474699
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/15/23	20:54	AT	474699
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/15/23	20:54	AT	474699
Vanadium	SW6010B	1	0.10	5.00	**38.5**		mg/Kg	05/15/23	20:54	AT	474699
Zinc	SW6010B	1	0.30	5.00	**66.0**		mg/Kg	05/15/23	20:54	AT	474699

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305065	**Prep Method:**	3050B	**Prep Date:**	05/15/23	**Prep Batch:**	1150962
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/15/2023	**Analytical Batch:**	474699
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Antimony	0.050	5.00	ND	
Arsenic	0.15	1.30	ND	
Barium	0.055	5.00	0.14	J
Beryllium	0.055	5.00	ND	
Cadmium	0.10	0.750	ND	
Chromium	0.075	5.00	0.13	J
Cobalt	0.070	5.00	ND	
Copper	0.20	5.00	ND	
Lead	0.10	3.00	ND	
Molybdenum	0.050	5.00	0.050	
Nickel	0.50	5.00	ND	
Selenium	0.35	1.10	ND	
Silver	0.15	0.500	ND	
Thallium	0.55	5.00	ND	
Vanadium	0.10	5.00	ND	
Zinc	0.30	5.00	3.2	J

Work Order:	2305065	**Prep Method:**	7471BP	**Prep Date:**	05/15/23	**Prep Batch:**	1150976
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/16/2023	**Analytical Batch:**	474697
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Mercury	0.083	0.50	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305065	**Prep Method:**	3050B	**Prep Date:**	05/17/23	**Prep Batch:**	1151065
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474846
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Antimony	0.050	5.00	0.065	
Arsenic	0.15	1.30	ND	
Barium	0.055	5.00	0.19	
Beryllium	0.055	5.00	ND	
Cadmium	0.10	0.750	ND	
Chromium	0.075	5.00	0.16	
Cobalt	0.070	5.00	ND	
Copper	0.20	5.00	ND	
Lead	0.10	3.00	ND	
Molybdenum	0.050	5.00	0.15	
Nickel	0.50	5.00	ND	
Selenium	0.35	1.10	ND	
Silver	0.15	0.500	ND	
Thallium	0.55	5.00	ND	
Vanadium	0.10	5.00	ND	
Zinc	0.30	5.00	ND	

Work Order:	2305065	**Prep Method:**	7471BP	**Prep Date:**	05/17/23	**Prep Batch:**	1151067
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474773
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Mercury	0.083	0.50	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305065	**Prep Method:**	3546_BNA	**Prep Date:**	05/19/23	**Prep Batch:**	1151137
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474887
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
N-Nitrosodimethylamine	46.9	720	ND	
Phenol	43.8	288	ND	
Bis(2-chloroethyl)ether	13.3	144	ND	
2-Chlorophenol	47.7	288	ND	
1,3-Dichlorobenzene	13.1	144	ND	
1,4-Dichlorobenzene	14.6	144	ND	
Benzyl Alcohol	20.5	288	ND	
1,2-Dichlorobenzene	13.5	144	ND	
2-Methylphenol (o-Cresol)	29.3	288	ND	
N-Methyl-2-Pyrrolidone (NMP)	68.0	720	ND	
	12.6	144	ND	
3-/4-Methylphenol (p-/m-Cresol)	31.3	288	ND	
N-nitroso-di-n-propylamine	13.2	144	ND	
Hexachloroethane	17.1	144	ND	
Nitrobenzene	12.8	144	ND	
Isophorone	12.2	144	ND	
2-Nitrophenol	25.4	288	ND	
2,4-Dimethylphenol	22.8	288	ND	
Benzoic Acid	41.7	288	ND	
Bis(2-Chloroethoxy)methane	9.79	144	ND	
Bis(2-chloroisopropyl)ether	12.6	144	ND	
2,4-Dichlorophenol	39.3	288	ND	
1,2,4-Trichlorobenzene	11.8	144	ND	
Naphthalene	10.6	144	ND	
2,6-Dichlorophenol	35.8	288	ND	
Hexachloro-1,3-butadiene	8.34	144	ND	
4-Chloro-3-methylphenol	33.8	288	ND	
2-Methylnaphthalene	10.4	144	ND	
1-Methylnaphthalene	12.2	144	ND	
Hexachlorocyclopentadiene	12.9	144	ND	
2,4,6-Trichlorophenol	35.9	288	ND	
2,4,5-Trichlorophenol	33.4	288	ND	
2-Chloronaphthalene	10.6	144	ND	
1,4-Dinitrobenzene	10.3	144	ND	
Dimethyl phthalate	14.2	720	ND	
1,3-Dinitrobenzene	10.4	144	ND	
Acenaphthylene	8.28	144	ND	
2,6-Dinitrotoluene	11.3	144	ND	
1,2-Dinitrobenzene	15.8	144	ND	
Acenaphthene	10.7	144	ND	
2,4-Dinitrophenol	77.6	720	ND	
4-Nitrophenol	54.7	720	ND	
Dibenzofuran	11.2	144	ND	
2,4-Dinitrotoluene	12.1	144	ND	
2,3,5,6-Tetrachlorophenol	27.6	288	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305065	**Prep Method:**	3546_BNA	**Prep Date:**	05/19/23	**Prep Batch:**	1151137
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474887
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
2,3,4,6-Tetrachlorophenol	31.5	288	ND	
Diethylphthalate	13.6	720	79.2	
Fluorene	10.3	144	ND	
4-Chlorophenyl-phenylether	9.32	144	ND	
4,6-Dinitro-2-methylphenol	13.4	288	ND	
Diphenylamine	13.0	144	ND	
Azobenzene	114	144	ND	
4-Bromophenyl-phenylether	8.23	144	ND	
Hexachlorobenzene	8.66	144	ND	
Pentachlorophenol	25.0	288	ND	
Phenanthrene	9.32	144	ND	
Anthracene	8.91	144	ND	
Carbazole	10.7	144	ND	
Di-n-butylphthalate	13.5	144	ND	
Fluoranthene	10.0	147	ND	
Benzidine	147	144	ND	
Pyrene	12.0	144	ND	
Butylbenzylphthalate	21.0	720	ND	
Benzo(a)anthracene	9.80	144	ND	
3,3-Dichlorobenzidine	118	144	ND	
Chrysene	15.2	144	ND	
Bis(2-Ethylhexyl)phthalate	15.3	720	ND	
Di-n-Octylphthalate	12.3	144	ND	
Benzo(b)fluorathene	12.0	144	ND	
benzo(k)fluorathene	8.16	144	ND	
Benzo(a)pyrene	9.80	144	ND	
Indeno(1,2,3-c,d)pyrene	13.8	144	ND	
Dibenzo(a,h)anthracene	12.7	144	ND	
Benzo(g,h,i)perylene	12.7	144	ND	
Pyridine	43.8	720	ND	
2-Fluorophenol (S)			88.1	
Phenol-d6 (S)			105	
2,4,6-Tribromophenol (S)			96.0	
2-Fluorobiphenyl (S)			80.2	
Nitrobenzene-d5 (S)			88.9	
p-Terphenyl-d14 (S)			91.7	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305065	**Prep Method:**	7199MP	**Prep Date:**	05/18/23	**Prep Batch:**	1151157
Matrix:	Soil	**Analytical Method:**	SW7199	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474857
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Hexavalent Chromium	3.1	10	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305065	**Prep Method:**	5035	**Prep Date:**	05/22/23	**Prep Batch:**	1151218
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/22/2023	**Analytical Batch:**	474921
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Dichlorodifluoromethane	1.2	10	ND		
Chloromethane	1.8	10	ND		
Vinyl Chloride	2.0	10	ND		
Bromomethane	2.7	10	ND		
Chloroethane	3.0	10	ND		
Trichlorofluoromethane	2.1	10	ND		
1,1-Dichloroethene	2.0	10	ND		
Freon 113	1.9	10	ND		
Methylene Chloride	7.1	10	ND		
trans-1,2-Dichloroethene	2.1	10	ND		
MTBE	2.3	10	ND		
TBA	12	50	ND		
Diisopropyl ether	2.3	10	ND		
1,1-Dichloroethane	2.2	10	ND		
Ethyl tert-Butyl ether	2.3	10	ND		
cis-1,2-Dichloroethene	2.2	10	ND		
2,2-Dichloropropane	1.9	10	ND		
Bromochloromethane	2.3	10	ND		
Chloroform	2.4	10	ND		
Carbon Tetrachloride	2.1	10	ND		
1,1,1-Trichloroethane	2.1	10	ND		
1,1-Dichloropropene	2.0	10	ND		
Benzene	2.2	10	ND		
TAME	2.3	10	ND		
1,2-Dichloroethane	2.3	10	ND		
Trichloroethene	1.8	10	ND		
Dibromomethane	1.8	10	ND		
1,2-Dichloropropane	1.9	10	ND		
Bromodichloromethane	2.0	10	ND		
cis-1,3-Dichloropropene	1.6	10	ND		
Toluene	1.8	10	ND		
Tetrachloroethene	1.7	10	ND		
trans-1,3-Dichloropropene	1.6	10	ND		
1,1,2-Trichloroethane	1.8	10	ND		
Dibromochloromethane	1.9	10	ND		
1,3-Dichloropropane	1.8	10	ND		
1,2-Dibromoethane	1.8	10	ND		
Chlorobenzene	1.8	10	ND		
Ethylbenzene	1.7	10	ND		
1,1,1,2-Tetrachloroethane	1.9	10	ND		
m,p-Xylene	3.2	10	ND		
o-Xylene	1.7	10	ND		
Styrene	1.6	10	ND		
Bromoform	1.7	10	ND		
Isopropyl Benzene	1.6	10	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305065	**Prep Method:**	5035	**Prep Date:**	05/22/23	**Prep Batch:**	1151218
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/22/2023	**Analytical Batch:**	474921
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
n-Propylbenzene	1.6	10	ND	
Bromobenzene	1.8	10	ND	
1,1,2,2-Tetrachloroethane	1.9	10	ND	
2-Chlorotoluene	1.8	10	ND	
1,3,5-Trimethylbenzene	1.6	10	ND	
1,2,3-Trichloropropane	1.9	10	ND	
4-Chlorotoluene	1.6	10	ND	
tert-Butylbenzene	1.6	10	ND	
1,2,4-Trimethylbenzene	1.4	10	ND	
sec-Butyl Benzene	1.6	10	ND	
p-Isopropyltoluene	1.5	10	ND	
1,3-Dichlorobenzene	1.7	10	ND	
1,4-Dichlorobenzene	1.7	10	ND	
n-Butylbenzene	1.5	10	ND	
1,2-Dichlorobenzene	1.8	10	ND	
1,2-Dibromo-3-Chloropropane	1.8	10	ND	
Hexachlorobutadiene	1.4	10	ND	
1,2,4-Trichlorobenzene	1.5	10	ND	
Naphthalene	1.7	10	2.5	
1,2,3-Trichlorobenzene	1.7	10	ND	
2-Butanone	2.3	10	ND	
(S) Dibromofluoromethane			114	
(S) Toluene-d8			103	
(S) 4-Bromofluorobenzene			98.7	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305065	**Prep Method:**	3050B	**Prep Date:**	05/15/23	**Prep Batch:**	1150962
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/15/2023	**Analytical Batch:**	474699
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony	0.050	5.00	ND	50	98.3	99.6	1.21	80 - 120	30	
Arsenic	0.15	1.30	ND	50	99.4	100	0.602	80 - 120	30	
Barium	0.055	5.00	0.14	50	101	102	0.985	80 - 120	30	
Beryllium	0.055	5.00	ND	50	102	103	0.976	80 - 120	30	
Cadmium	0.10	0.750	ND	50	101	102	0.985	80 - 120	30	
Chromium	0.075	5.00	0.13	50	102	103	0.976	80 - 120	30	
Cobalt	0.070	5.00	ND	50	102	103	0.976	80 - 120	30	
Copper	0.20	5.00	ND	50	102	103	0.976	80 - 120	30	
Lead	0.10	3.00	ND	50	101	102	0.985	80 - 120	30	
Molybdenum	0.050	5.00	0.050	50	101	102	0.985	80 - 120	30	
Nickel	0.50	5.00	ND	50	102	103	0.976	80 - 120	30	
Selenium	0.22	5.00	ND	50	92.9	93.5	0.643	80 - 120	30	
Silver	0.15	5.00	ND	50	99.3	100	0.602	80 - 120	30	
Thallium	0.20	5.00	ND	50	99.8	101	1.20	80 - 120	30	
Vanadium	0.10	5.00	ND	50	102	103	0.976	80 - 120	30	
Zinc	0.30	5.00	3.2	50	111	111	0.000	80 - 120	30	

Work Order:	2305065	**Prep Method:**	7471BP	**Prep Date:**	05/15/23	**Prep Batch:**	1150976
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/16/2023	**Analytical Batch:**	474697
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury	0.047	0.50	ND	1.25	105	104	0.766	80 - 120	20	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305065	**Prep Method:**	3050B	**Prep Date:**	05/17/23	**Prep Batch:**	1151065
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474846
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony	0.050	5.00	0.065	50	99.7	100	0.200	80 - 120	30	
Arsenic	0.15	1.30	ND	50	98.4	98.7	0.406	80 - 120	30	
Barium	0.055	5.00	0.19	50	103	103	0.000	80 - 120	30	
Beryllium	0.055	5.00	ND	50	102	102	0.000	80 - 120	30	
Cadmium	0.10	0.750	ND	50	101	101	0.000	80 - 120	30	
Chromium	0.075	5.00	0.16	50	103	103	0.000	80 - 120	30	
Cobalt	0.070	5.00	ND	50	102	102	0.000	80 - 120	30	
Copper	0.20	5.00	ND	50	105	105	0.000	80 - 120	30	
Lead	0.10	3.00	ND	50	102	102	0.000	80 - 120	30	
Molybdenum	0.050	5.00	0.15	50	103	103	0.000	80 - 120	30	
Nickel	0.50	5.00	ND	50	102	102	0.000	80 - 120	30	
Selenium	0.22	5.00	ND	50	91.8	92.4	0.651	80 - 120	30	
Silver	0.15	5.00	ND	50	100	101	0.995	80 - 120	30	
Thallium	0.20	5.00	ND	50	99.7	101	1.20	80 - 120	30	
Vanadium	0.10	5.00	ND	50	103	103	0.000	80 - 120	30	
Zinc	0.30	5.00	ND	50	100	101	0.995	80 - 120	30	

Work Order:	2305065	**Prep Method:**	7471BP	**Prep Date:**	05/17/23	**Prep Batch:**	1151067
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474773
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury	0.047	0.50	ND	1.25	117	117	0.000	80 - 120	20	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305065	**Prep Method:**	3546_BNA	**Prep Date:**	05/19/23	**Prep Batch:**	1151137
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474887
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Phenol	43.8	288	ND	1200	92.5	94.2	1.79	40 - 100	30	
2-Chlorophenol	47.7	288	ND	1200	92.4	88.8	3.67	45 - 105	30	
Bis(2-chloroethyl)ether	14.6	144	ND	400	76.2	75.7	0.658	35 - 105	30	
N-nitroso-di-n-propylamine	13.2	144	ND	400	107	109	1.85	40 - 115	30	
1,2,4-Trichlorobenzene	11.8	144	ND	400	78.7	75.4	4.21	45 - 110	30	
1,4-Dichlorobenzene	33.8	288	ND	1200	103	95.8	7.53	45 - 110	30	
Acenaphthene	10.7	144	ND	400	93.0	86.2	7.53	45 - 110	30	
4-Nitrophenol	54.7	720	ND	1200	87.3	81.4	7.31	15 - 140	30	
2,4-Dinitrotoluene	12.1	144	ND	400	91.9	91.3	0.819	50 - 115	30	
N-Methyl-2-Pyrrolidone (NMP)	12.0	144	ND	1200	68.3	70.5	3.12	25 - 120	30	
Pyrene	12.0	144	ND	400	90.7	87.6	3.65	45 - 145	30	
2-Fluorophenol (S)				11100	86.8	84.7		25 - 121		
Phenol-d6 (S)				11100	95.7	98.5		24 - 113		
2,4,6-Tribromophenol (S)				11100	107	97.9		19 - 122		
2-Fluorobiphenyl (S)				5560	89.1	81.3		30 - 143		
Nitrobenzene-d5 (S)				5560	93.6	77.9		23 - 120		
p-Terphenyl-d14 (S)				5560	86.3	79.5		18 - 137		

Work Order:	2305065	**Prep Method:**	7199MP	**Prep Date:**	05/18/23	**Prep Batch:**	1151157
Matrix:	Soil	**Analytical Method:**	SW7199	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474857
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Hexavalent Chromium	3.1	10	ND	100	101	103	1.96	80 - 120	20	

Work Order:	2305065	**Prep Method:**	5035	**Prep Date:**	05/22/23	**Prep Batch:**	1151218
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/22/2023	**Analytical Batch:**	474921
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
1,1-Dichloroethene	2.0	10	ND	50.0	113	113	0.000	53.7 - 139	30	
Benzene	2.2	10	ND	50.0	111	110	0.544	66.5 - 135	30	
Trichloroethene	1.8	10	ND	50.0	97.9	94.7	3.33	57.5 - 150	30	
Toluene	1.8	10	ND	50.0	102	98.9	2.99	56.8 - 134	30	
Chlorobenzene	1.8	10	ND	50.0	98.7	98.6	0.000	57.4 - 134	30	
(S) Dibromofluoromethane				50.0	113	110		59.8 - 148		
(S) Toluene-d8				50.0	104	103		55.2 - 133		
(S) 4-Bromofluorobenzene				50.0	108	109		55.8 - 141		

Torrent LABORATORY, INC.

MS/MSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305065	**Prep Method:**	3050B	**Prep Date:**	05/15/23	**Prep Batch:**	1150962
Matrix:	**Soil**	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/15/2023	**Analytical Batch:**	474699
Spiked Sample:	2305065-001A						
Units:	mg/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony	0.050	5.00	ND	50	93.7	91.2	2.81	30.7 - 130	30	
Arsenic	0.15	1.30	1.83	50	98.3	96.2	1.98	71.0 - 121	30	
Barium	0.055	5.00	108	50	76.0	75.0	0.000	70.2 - 130	30	
Beryllium	0.055	5.00	ND	50	99.6	97.4	2.22	73.3 - 115	30	
Cadmium	0.10	0.750	ND	50	96.0	93.5	2.73	80.0 - 110	30	
Chromium	0.075	5.00	13.5	50	100	97.0	2.39	76.0 - 116	30	
Cobalt	0.070	5.00	9.00	50	97.0	95.0	1.75	57.4 - 122	30	
Copper	0.20	5.00	12.1	50	109	104	3.83	74.8 - 119	30	
Lead	0.10	3.00	ND	50	97.1	93.7	3.42	57.9 - 118	30	
Molybdenum	0.050	5.00	ND	50	97.3	94.8	2.69	62.9 - 123	30	
Nickel	0.50	5.00	8.50	50	97.0	94.0	2.67	61.5 - 122	30	
Selenium	0.22	5.00	ND	50	89.1	86.6	2.96	62.0 - 111	30	
Silver	0.15	5.00	ND	50	103	99.8	3.16	75 - 125	30	
Thallium	0.20	5.00	ND	50	93.1	91.0	2.39	39.2 - 125	30	
Vanadium	0.10	5.00	36.2	50	102	99.6	1.16	65.8 - 122	30	
Zinc	0.30	5.00	45.6	50	98.8	92.8	3.21	59.9 - 122	30	

Work Order:	2305065	**Prep Method:**	7471BP	**Prep Date:**	05/15/23	**Prep Batch:**	1150976
Matrix:	**Soil**	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/16/2023	**Analytical Batch:**	474697
Spiked Sample:	2305065-001A						
Units:	mg/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury	0.047	0.50	ND	1.25	103	106	3.08	80 - 120	20	

Work Order:	2305065	**Prep Method:**	7199MP	**Prep Date:**	05/18/23	**Prep Batch:**	1151157
Matrix:	**Soil**	**Analytical Method:**	SW7199	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474857
Spiked Sample:	2305065-003A						
Units:	ug/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Hexavalent Chromium	3.1	10	ND	100	97.3	96.3	0.948	75 - 125	20	

Laboratory Qualifiers and Definitions

DEFINITIONS:

Accuracy/Bias (% Recovery) - The closeness of agreement between an observed value and an accepted reference value.
Blank (Method/Preparation Blank) -MB/PB - An analyte-free matrix to which all reagents are added in the same volumes/proportions as used in sample processing. The method blank is used to document contamination resulting from the analytical process.
Duplicate - a field sample and/or laboratory QC sample prepared in duplicate following all of the same processes and procedures used on the original sample (sample duplicate, LCSD, MSD)
Laboratory Control Sample (LCS ad LCSD) - A known matrix spiked with compounds representative of the target analyte(s). This is used to document laboratory performance.
Matrix - the component or substrate that contains the analyte of interest (e.g., - groundwater, sediment, soil, waste water, etc)
Matrix Spike (MS/MSD) - Client sample spiked with identical concentrations of target analyte (s). The spiking occurs prior to the sample preparation and analysis. They are used to document the precision and bias of a method in a given sample matrix.
Method Detection Limit (MDL) - the minimum concentration of a substance that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero
Practical Quantitation Limit/Reporting Limit/Limit of Quantitation (PQL/RL/LOQ) - a laboratory determined value at 2 to 5 times above the MDL that can be reproduced in a manner that results in a 99% confidence level that the result is both accurate and precise. PQLs/RLs/LODs reflect all preparation factors and/or dilution factors that have been applied to the sample during the preparation and/or analytical processes.
Precision (%RPD) - The agreement among a set of replicate/duplicate measurements without regard to known value of the replicates
Surrogate (S) or (Surr) - An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. Surrogates are used in most organic analysis to demonstrate matrix compatibility with the chosen method of analysis
Tentatively Identified Compound (TIC) - A compound not contained within the analytical calibration standards but present in the GCMS library of defined compounds. When the library is searched for an unknown compound, it can frequently give a tentative identification to the compound based on retention time and primary and secondary ion match. TICs are reported as estimates and are candidates for further investigation.
Units: the unit of measure used to express the reported result - **mg/L** and ***mg/Kg*** (equivalent to PPM - parts per million in **liquid** and ***solid***), **ug/L** and ***ug/Kg*** (equivalent to PPB - parts per billion in **liquid** and ***solid***), **ug/m3**, ***mg/m3***, **ppbv** and ***ppmv*** (all units of measure for reporting concentrations in air), **%** (equivalent to 10000 ppm or 1,000,000 ppb), **ug/Wipe** (concentration found on the surface of a single Wipe usually taken over a 100cm2 surface)

LABORATORY QUALIFIERS

B - Indicates when the analyte is found in the associated method or preparation blank
D - Surrogate is not recoverable due to the necessary dilution of the sample
E - Indicates the reportable value is outside of the calibration range of the instrument but within the linear range of the instrument (unless otherwise noted) Values reported with an E qualifier should be considered as estimated.
H- Indicates that the recommended holding time for the analyte or compound has been exceeded
J- Indicates a value between the method MDL and PQL and that the reported concentration should be considered as estimated rather the quantitative
NA - Not Analyzed
N/A - Not Applicable
ND - Not Detected at a concentration greater than the PQL/RL or, if reported to the MDL, at greater than the MDL.
NR - Not recoverable - a matrix spike concentration is not recoverable due to a concentration within the original sample that is greater than four times the spike concentration added
R- The % RPD between a duplicate set of samples is outside of the absolute values established by laboratory control charts
S- Spike recovery is outside of established method and/or laboratory control limits. Further explanation of the use of this qualifier should be included within a case narrative
X -Used to indicate that a value based on pattern identification is within the pattern range but not typical of the pattern found in standards. Further explanation may or may not be provided within the sample footnote and/or the case narrative.

Sample Receipt Checklist

Client Name: Langan

Project Name: VERNON

Work Order No.: 2305065

Date and Time Received: 5/9/2023 10:06:00AM

Received By: Lorna Imbat

Physically Logged By: Lorna Imbat

Checklist Completed By: Lorna Imbat

Carrier Name: FedEx

Chain of Custody (COC) Information

Chain of custody present?	Yes
Chain of custody signed when relinquished and received?	Yes
Chain of custody agrees with sample labels?	Yes
Custody seals intact on sample bottles?	Not Present

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Not Present
Shipping Container/Cooler In Good Condition?	Yes
Samples in proper container/bottle?	Yes
Samples containers intact?	Yes
Sufficient sample volume for indicated test?	Yes

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes			
Container/Temp Blank temperature in compliance?	Yes	Temperature:	2.0	°C
Water-VOA vials have zero headspace?	No VOA vials submitted			
Water-pH acceptable upon receipt?	N/A			

pH Checked by: N/A

pH Adjusted by: N/A

Comments:

Torrent LABORATORY, INC.

Login Summary Report

Client ID:	TL5493	Langan	**QC Level:**	II
Project Name:	VERNON		**TAT Requested:**	3 Day Std:3
Project # :	721040501		**Date Received:**	5/9/2023
Report Due Date:	5/23/2023		**Time Received:**	10:06 am

Comments:

Work Order # : ***2305065***

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
2305065-001A	B-4-6	05/03/23 9:54	Soil	10/30/23			Hg_S_7471B Cr6_S_7199Mod Met_S_6010B CAM17	
Sample Note:								
2305065-002A	B-4-10	05/03/23 9:58	Soil	10/30/23			Hold Samples	
2305065-003A	B-4-15	05/03/23 10:00	Soil	10/30/23			Hold Samples Met_S_6010B CAM17 Cr6_S_7199Mod Hg_S_7471B	
2305065-004A	B-4-20	05/03/23 10:05	Soil	10/30/23			Hold Samples	
2305065-005A	B-4-25	05/03/23 10:14	Soil	10/30/23			Hold Samples	
2305065-006A	B-4-30	05/03/23 10:23	Soil	10/30/23			Hold Samples	
2305065-007A	B-5-5	05/03/23 13:10	Soil	10/30/23			Hg_S_7471B Cr6_S_7199Mod Met_S_6010B CAM17	
2305065-008A	B-5-10	05/03/23 13:14	Soil	10/30/23			Hold Samples	
2305065-009A	B-5-15	05/03/23 13:18	Soil	10/30/23			Hold Samples Met_S_6010B CAM17 Cr6_S_7199Mod Hg_S_7471B	
2305065-010A	B-5-20	05/03/23 13:23	Soil	10/30/23			Hold Samples	
2305065-011A	B-5-25	05/03/23 13:28	Soil	10/30/23			Hold Samples	
2305065-012A	B-5-30	05/03/23 13:35	Soil	10/30/23			Hold Samples VOC_S_8260B SVO_S_8270CFull	
2305065-013A	B-6-5	05/04/23 13:32	Soil	10/31/23			Hg_S_7471B Cr6_S_7199Mod Met_S_6010B CAM17	

Login Summary Report

Client ID:	TL5493	Langan	**QC Level:**	II
Project Name:	VERNON		**TAT Requested:**	3 Day Std:3
Project # :	721040501		**Date Received:**	5/9/2023
Report Due Date:	5/23/2023		**Time Received:**	10:06 am

Comments:

Work Order # : ***2305065***

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
2305065-014A	B-6-10	05/04/23 13:41	Soil	10/31/23			Hold Samples	
2305065-015A	B-6-15	05/04/23 13:43	Soil	10/31/23			Hold Samples Met_S_6010B CAM17 Cr6_S_7199Mod Hg_S_7471B	
2305065-016A	B-6-20	05/04/23 13:51	Soil	10/31/23			Hold Samples	
2305065-017A	B-6-25	05/04/23 13:59	Soil	10/31/23			Hold Samples	
2305065-018A	B-6-30	05/04/23 14:05	Soil	10/31/23			Hold Samples	
2305065-019A	B-7-6	05/04/23 8:09	Soil	10/31/23			Hg_S_7471B Cr6_S_7199Mod Met_S_6010B CAM17	
2305065-020A	B-7-10	05/04/23 8:37	Soil	10/31/23			Hold Samples	

Torrent LABORATORY, INC.

Torrent LABORATORY, INC.
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

Reset

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 2305065 (25 ~~25~~ 9mi)

Company Name: LANGAN ☐ Env. ☐ Non Env.
Address: 515 S FLOWER ST, SUITE 1060
City: LOS ANGELES State: CA Zip Code: 90071
Telephone: ~~765 775~~ 213 280 9903 Cell:
REPORT TO: NCUTLER@LANGAN.com BILL TO: SAME

Project #: 721040501 PO#:
Project Name: VERNON
Comments: HOLD ALL SAMPLES
SAMPLER: M. CHE
EMAIL:

TURNAROUND TIME: MCHE@LANGAN.com
☐ 2 - 8 Hours ☐ 2 Work Days ☐ 5 Work Days
☐ Noon - Nxt Day ☑ 3 Work Days ☐ 7 Work Days
☐ 1 Work Day ☐ 4 Work Days ☐ 10 Work Days

SAMPLE TYPE:
☐ Drinking Water ☐ Storm Water ☐ Air ☐ Waste Water ☐ Wipe ☐ Ground Water ☐ Other ☑ Soil ☐ Product / Bulk

REPORT FORMAT:
☐ Level II - Std. ☐ DoD/DoE Level III ☐ DoD/DoE Level III ☐ Excel - EDD ☐ EDF ☐ Client Specific EDD

ANALYSIS REQUESTED

LAB ID	CANISTER I.D.	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	VOC 8260B	SVOC 8270 SIM	CAM 17 6010B	8081A					REMARKS
001A	NA	B-4-6	5/31/2023 0954	Soil	1	Glass	✓	✓	✓						HOLD
002A		B-4-10	5/31/23 0958	Soil	1	Glass	✓	✓	✓						
003A		B-4-15	5/31/23 1000	Soil	1	Glass	✓	✓	✓						
004A		B-4-20	5/31/23 1005	Soil	1	Glass	✓	✓	✓						
005A		B-4-25	5/31/23 1014	Soil	1	Glass	✓	✓	✓						
006A		B-4-30	5/31/23 1023	Soil	1	Glass	✓	✓	✓						
007A		B-5-5	5/31/23 1310	Soil	1	Glass	✓	✓	✓						
008A		B-5-10	5/31/23 1314	Soil	1	Glass	✓	✓	✓						
009A		B-5-15	5/31/23 1318	Soil	1	Glass	✓	✓	✓						
010A		B-5-20	5/31/23 1323	Soil	1	Glass	✓	✓	✓						

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	Melody Che	MELODY CHE	5/31/23	1630		L.D. Imbat	5-9-23	1006
2	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:

Cooler Temperature 1.9 #32 Samples Received on ice? Yes ☑ No ☐ Method of Shipment Fed EX

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

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Torrent LABORATORY, INC.

Torrent LABORATORY, INC.
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

Reset

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 230565

Company Name: LANGAN ☐ Env. ☐ Non Env.			Project #: 721040501 PO#:
Address: 515 S FLOWER ST, SUITE 1060			Project Name: VERNON
City: LA	State: CA	Zip Code: 90071	Comments: HOLD ALL SAMPLES
Telephone: 213 280 9903	Cell:		SAMPLER: M. CHU
REPORT TO: NICK CUTLER	BILL TO:		EMAIL: NCUTLER@LANGAN.COM, MCHE@langan.com

TURNAROUND TIME:
☐ 2 - 8 Hours ☐ 2 Work Days ☐ 5 Work Days
☐ Noon - Nxt Day ☐ 3 Work Days ☐ 7 Work Days
☐ 1 Work Day ☐ 4 Work Days ☐ 10 Work Days

SAMPLE TYPE:
☐ Drinking Water ☐ Storm Water ☐ Air ☐ Waste Water ☐ Wipe ☐ Ground Water ☐ Other ☐ Soil ☐ Product / Bulk

REPORT FORMAT:
☐ Level II - Std. ☐ DoD/DoE Level III ☐ DoD/DoE Level III ☐ Excel - EDD ☐ EDF ☐ Client Specific EDD

ANALYSIS REQUESTED

LAB ID	CANISTER I.D.	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	VOC 8260B	SVOC 8270SIM	CAM 17 6010	REMARKS
-011A		B-5-25	5/3/23 1328	Soil	1	Glass	✓	✓	✓	HOLD
-012A		B-5-30	5/3/23 1335	Soil	1	Glass	✓	✓	✓	
-013A		B-6-5	5/4/23 1332	Soil	1	Glass	✓	✓	✓	
-014A		B-6-10	5/4/23 1341	Soil	1	Glass	✓	✓	✓	
-015A		B-6-15	5/4/23 1343	Soil	1	Glass	✓	✓	✓	
-016A		B-6-20	5/4/23 1351	Soil	1	Glass	✓	✓	✓	
-017A		B-6-25	5/4/23 1359	Soil	1	Glass	✓	✓	✓	
-018A		B-6-30	5/4/23 1405	Soil	1	Glass	✓	✓	✓	
-019A		B-7-6	5/4/23 0809	Soil	1	Glass	✓	✓	✓	
-020A		B-7-10	5/4/23 0837	Soil	1	Glass	✓	✓	✓	

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	Melody Chu	MELODY CHU	5/4/23 5/5/23	Melody Chu 1630		I. D. Imlaal	5-9-23	1006
2	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:

Cooler Temperature 1.9 #3 Samples Received on ice? Yes ☒ No ☐ Method of Shipment Fed EX

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

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Gmail Torrent Laboratory, Inc. <pm@torrentlaboratory.com>

RE: [External] Re: Sample order for PO: 721040501

1 message

Nick Cutler <ncutler@langan.com> Wed, May 10, 2023 at 8:42 PM
To: "Torrent Laboratory, Inc." <pm@torrentlaboratory.com>, Katherine Thomas <kthomas@langan.com>
Cc: "melanie.moran@torrentlaboratory.com" <melanie.moran@torrentlaboratory.com>, Melody Che <mche@langan.com>

Hi Kathie –

Can you please run the analyses on a 3-day TAT per the table below?

Sample ID	Metals 6010B	Pesticides 8081A	PCBs 8082	ACM PLM
B-1-5	1	1		1
B-2-5	1	1	1	
B-3-5	1	1		
B-4-6	1			
B-5-5	1			
B-6-5	1			
B-7-6	1			
B-8-5	1	1		
B-9-5	1			
B-11-5	1	1	1	
B-12-5	1		1	
B-13-5	1		1	

Cordially,
Nick Cutler

483 Sinclair Frontage Rd., Milpitas, CA 95035 | tel: 408.263.5258 | fax: 408.263.8293 | www.torrentlab.com

Torrent
LABORATORY, INC.

Langan
135 Main Street, Suite 1500
San Francisco, California 94105
Tel: 415.955.5200

RE: VERNON

Work Order No.: 2305066 Rev: 3

Dear Nick Cutler:

Torrent Laboratory, Inc. received 18 sample(s) on May 09, 2023 for the analyses presented in the following Report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.

Torrent Laboratory, Inc. is certified by the State of California, ELAP #1991. If you have any questions regarding these test results, please feel free to contact the Project Management Team at (408)263-5258; ext 204.



Kathie Evans
Project Manager

May 19, 2023
Date

Date: 5/19/2023

Client: Langan

Project: VERNON

Work Order: 2305066

CASE NARRATIVE

Unless otherwise indicated in the following narrative, no issues encountered with the receiving, preparation, analysis or reporting of the results associated with this work order.

Unless otherwise indicated in the following narrative, no results have been method and/or field blank corrected.

Reported results relate only to the items/samples tested by the laboratory.

This report shall not be reproduced, except in full, without the written approval of Torrent Laboratory, Inc.

Asbestos analysis was sub-contracted to EMSL analytical. Sub-contract data will appear under a separate cover.

REVISIONS

Report revised to include sub-contracted Asbestos data. Sub-contract data appears as an attachment to the Torrent generated report.

Rev. 1 (5/17/23)

Report revised to include additionally requested data

Rev. 2 (5/19/23)

Report revised to include additionally requested SVOC and VOC data.

Rev. 3 (5/23/23)

Torrent LABORATORY, INC.

Sample Result Summary

Report prepared for: Nick Cutler
Langan

Date Received: 05/09/23
Date Reported: 05/19/23

B-7-15 2305066-001

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Barium	SW6010B	1	0.055	5.00	57.5	mg/Kg
Chromium	SW6010B	1	0.075	5.00	10.4	mg/Kg
Copper	SW6010B	1	0.20	5.00	10.5	mg/Kg
Lead	SW6010B	1	0.10	3.00	5.70	mg/Kg
Nickel	SW6010B	1	0.50	5.00	6.95	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	23.3	mg/Kg
Zinc	SW6010B	1	0.30	5.00	28.2	mg/Kg

B-7-30 2305066-004

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

B-1-5 2305066-006

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	2.62	mg/Kg
Barium	SW6010B	1	0.055	5.00	171	mg/Kg
Chromium	SW6010B	1	0.075	5.00	24.5	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	13.8	mg/Kg
Copper	SW6010B	1	0.20	5.00	28.9	mg/Kg
Lead	SW6010B	1	0.10	3.00	10.2	mg/Kg
Nickel	SW6010B	1	0.50	5.00	15.6	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	53.5	mg/Kg
Zinc	SW6010B	1	0.30	5.00	91.5	mg/Kg

B-1-15 2305066-008

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Barium	SW6010B	1	0.055	5.00	43.2	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	13.8	mg/Kg
Zinc	SW6010B	1	0.30	5.00	14.7	mg/Kg

B-10-5 2305066-012

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	1.50	mg/Kg
Barium	SW6010B	1	0.055	5.00	84.0	mg/Kg
Chromium	SW6010B	1	0.075	5.00	12.0	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	7.35	mg/Kg
Copper	SW6010B	1	0.20	5.00	10.6	mg/Kg
Nickel	SW6010B	1	0.50	5.00	7.15	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	33.7	mg/Kg
Zinc	SW6010B	1	0.30	5.00	34.3	mg/Kg

Torrent LABORATORY, INC.

Sample Result Summary

Report prepared for: Nick Cutler
Langan

Date Received: 05/09/23
Date Reported: 05/19/23

B-10-15 2305066-014

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	1.61	mg/Kg
Barium	SW6010B	1	0.055	5.00	90.5	mg/Kg
Chromium	SW6010B	1	0.075	5.00	12.2	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	8.20	mg/Kg
Copper	SW6010B	1	0.20	5.00	11.2	mg/Kg
Nickel	SW6010B	1	0.50	5.00	7.65	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	35.5	mg/Kg
Zinc	SW6010B	1	0.30	5.00	39.5	mg/Kg

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-7-15	**Lab Sample ID:**	2305066-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 8:47		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	3:44	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-7-15	**Lab Sample ID:**	2305066-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 8:47		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/17/23 7:15:00PM
Prep Batch ID:	1151067	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/18/23	13:35	BJAY	474773

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-7-15	**Lab Sample ID:**	2305066-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 8:47		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/17/23 7:00:00PM
Prep Batch ID:	1151065	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:19	AT	474846
Arsenic	SW6010B	1	0.15	1.30	ND		mg/Kg	05/18/23	20:19	AT	474846
Barium	SW6010B	1	0.055	5.00	**57.5**		mg/Kg	05/18/23	20:19	AT	474846
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/18/23	20:19	AT	474846
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/18/23	20:19	AT	474846
Chromium	SW6010B	1	0.075	5.00	**10.4**		mg/Kg	05/18/23	20:19	AT	474846
Cobalt	SW6010B	1	0.070	5.00	ND		mg/Kg	05/18/23	20:19	AT	474846
Copper	SW6010B	1	0.20	5.00	**10.5**		mg/Kg	05/18/23	20:19	AT	474846
Lead	SW6010B	1	0.10	3.00	**5.70**		mg/Kg	05/18/23	20:19	AT	474846
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:19	AT	474846
Nickel	SW6010B	1	0.50	5.00	**6.95**		mg/Kg	05/18/23	20:19	AT	474846
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/18/23	20:19	AT	474846
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/18/23	20:19	AT	474846
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:19	AT	474846
Vanadium	SW6010B	1	0.10	5.00	**23.3**		mg/Kg	05/18/23	20:19	AT	474846
Zinc	SW6010B	1	0.30	5.00	**28.2**		mg/Kg	05/18/23	20:19	AT	474846

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-7-30	**Lab Sample ID:**	2305066-004A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 9:05		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
N-Nitrosodimethylamine	SW8270C	1	46.9	720	ND		ug/Kg	05/22/23	0:12	MT	474888
Phenol	SW8270C	1	43.8	288	ND		ug/Kg	05/22/23	0:12	MT	474888
Bis(2-chloroethyl)ether	SW8270C	1	13.3	144	ND		ug/Kg	05/22/23	0:12	MT	474888
2-Chlorophenol	SW8270C	1	47.7	288	ND		ug/Kg	05/22/23	0:12	MT	474888
1,3-Dichlorobenzene	SW8270C	1	13.1	144	ND		ug/Kg	05/22/23	0:12	MT	474888
1,4-Dichlorobenzene	SW8270C	1	14.6	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Benzyl Alcohol	SW8270C	1	20.5	288	ND		ug/Kg	05/22/23	0:12	MT	474888
1,2-Dichlorobenzene	SW8270C	1	13.5	144	ND		ug/Kg	05/22/23	0:12	MT	474888
2-Methylphenol (o-Cresol)	SW8270C	1	29.3	288	ND		ug/Kg	05/22/23	0:12	MT	474888
N-Methyl-2-Pyrrolidone (NMP)	SW8270C	1	68.0	720	ND		ug/Kg	05/22/23	0:12	MT	474888
3-/4-Methylphenol (p-/m-Cresol)	SW8270C	1	31.3	288	ND		ug/Kg	05/22/23	0:12	MT	474888
N-nitroso-di-n-propylamine	SW8270C	1	13.2	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Hexachloroethane	SW8270C	1	17.1	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Nitrobenzene	SW8270C	1	12.8	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Isophorone	SW8270C	1	12.2	144	ND		ug/Kg	05/22/23	0:12	MT	474888
2-Nitrophenol	SW8270C	1	25.4	288	ND		ug/Kg	05/22/23	0:12	MT	474888
2,4-Dimethylphenol	SW8270C	1	22.8	288	ND		ug/Kg	05/22/23	0:12	MT	474888
Benzoic Acid	SW8270C	1	41.7	288	ND		ug/Kg	05/22/23	0:12	MT	474888
Bis(2-Chloroethoxy)methane	SW8270C	1	9.79	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Bis(2-chloroisopropyl)ether	SW8270C	1	12.6	144	ND		ug/Kg	05/22/23	0:12	MT	474888
2,4-Dichlorophenol	SW8270C	1	39.3	288	ND		ug/Kg	05/22/23	0:12	MT	474888
1,2,4-Trichlorobenzene	SW8270C	1	11.8	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Naphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/22/23	0:12	MT	474888
2,6-Dichlorophenol	SW8270C	1	35.8	288	ND		ug/Kg	05/22/23	0:12	MT	474888
Hexachloro-1,3-butadiene	SW8270C	1	8.34	144	ND		ug/Kg	05/22/23	0:12	MT	474888
4-Chloro-3-methylphenol	SW8270C	1	33.8	288	ND		ug/Kg	05/22/23	0:12	MT	474888
2-Methylnaphthalene	SW8270C	1	10.4	144	ND		ug/Kg	05/22/23	0:12	MT	474888
1-Methylnaphthalene	SW8270C	1	12.2	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Hexachlorocyclopentadiene	SW8270C	1	12.9	144	ND		ug/Kg	05/22/23	0:12	MT	474888
2,4,6-Trichlorophenol	SW8270C	1	35.9	288	ND		ug/Kg	05/22/23	0:12	MT	474888
2,4,5-Trichlorophenol	SW8270C	1	33.4	288	ND		ug/Kg	05/22/23	0:12	MT	474888
2-Chloronaphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/22/23	0:12	MT	474888
1,4-Dinitrobenzene	SW8270C	1	10.3	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Dimethyl phthalate	SW8270C	1	14.2	720	ND		ug/Kg	05/22/23	0:12	MT	474888
1,3-Dinitrobenzene	SW8270C	1	10.4	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Acenaphthylene	SW8270C	1	8.28	144	ND		ug/Kg	05/22/23	0:12	MT	474888
2,6-Dinitrotoluene	SW8270C	1	11.3	144	ND		ug/Kg	05/22/23	0:12	MT	474888
1,2-Dinitrobenzene	SW8270C	1	15.8	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Acenaphthene	SW8270C	1	10.7	144	ND		ug/Kg	05/22/23	0:12	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-7-30	**Lab Sample ID:**	2305066-004A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 9:05		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2,4-Dinitrophenol	SW8270C	1	77.6	720	ND		ug/Kg	05/22/23	0:12	MT	474888
4-Nitrophenol	SW8270C	1	54.7	720	ND		ug/Kg	05/22/23	0:12	MT	474888
Dibenzofuran	SW8270C	1	11.2	144	ND		ug/Kg	05/22/23	0:12	MT	474888
2,4-Dinitrotoluene	SW8270C	1	12.1	144	ND		ug/Kg	05/22/23	0:12	MT	474888
2,3,5,6-Tetrachlorophenol	SW8270C	1	27.6	288	ND		ug/Kg	05/22/23	0:12	MT	474888
2,3,4,6-Tetrachlorophenol	SW8270C	1	31.5	288	ND		ug/Kg	05/22/23	0:12	MT	474888
Diethylphthalate	SW8270C	1	13.6	720	ND		ug/Kg	05/22/23	0:12	MT	474888
Fluorene	SW8270C	1	10.3	144	ND		ug/Kg	05/22/23	0:12	MT	474888
4-Chlorophenyl-phenylether	SW8270C	1	9.32	144	ND		ug/Kg	05/22/23	0:12	MT	474888
4,6-Dinitro-2-methylphenol	SW8270C	1	13.4	288	ND		ug/Kg	05/22/23	0:12	MT	474888
Diphenylamine	SW8270C	1	13.0	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Azobenzene	SW8270C	1	114	144	ND		ug/Kg	05/22/23	0:12	MT	474888
4-Bromophenyl-phenylether	SW8270C	1	8.23	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Hexachlorobenzene	SW8270C	1	8.66	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Pentachlorophenol	SW8270C	1	25.0	288	ND		ug/Kg	05/22/23	0:12	MT	474888
Phenanthrene	SW8270C	1	9.32	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Anthracene	SW8270C	1	8.91	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Carbazole	SW8270C	1	10.7	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Di-n-butylphthalate	SW8270C	1	13.5	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Fluoranthene	SW8270C	1	10.0	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Benzidine	SW8270C	1	147	147	ND		ug/Kg	05/22/23	0:12	MT	474888
Pyrene	SW8270C	1	12.0	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Butylbenzylphthalate	SW8270C	1	21.0	720	ND		ug/Kg	05/22/23	0:12	MT	474888
Benzo(a)anthracene	SW8270C	1	9.80	144	ND		ug/Kg	05/22/23	0:12	MT	474888
3,3-Dichlorobenzidine	SW8270C	1	118	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Chrysene	SW8270C	1	15.2	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Bis(2-Ethylhexyl)phthalate	SW8270C	1	15.3	720	ND		ug/Kg	05/22/23	0:12	MT	474888
Di-n-Octylphthalate	SW8270C	1	12.3	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Benzo(b)fluorathene	SW8270C	1	12.0	144	ND		ug/Kg	05/22/23	0:12	MT	474888
benzo(k)fluorathene	SW8270C	1	8.16	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Benzo(a)pyrene	SW8270C	1	9.80	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Indeno(1,2,3-c,d)pyrene	SW8270C	1	13.8	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Dibenzo(a,h)anthracene	SW8270C	1	12.7	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Benzo(g,h,i)perylene	SW8270C	1	16.7	144	ND		ug/Kg	05/22/23	0:12	MT	474888
Pyridine	SW8270C	1	43.8	720	ND		ug/Kg	05/22/23	0:12	MT	474888
			Acceptance Limits								
2-Fluorophenol (S)	SW8270C		25 - 121		**58.8**		%	05/22/23	0:12	MT	474888
Phenol-d6 (S)	SW8270C		24 - 113		**61.0**		%	05/22/23	0:12	MT	474888
2,4,6-Tribromophenol (S)	SW8270C		19 - 122		**59.1**		%	05/22/23	0:12	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-7-30	**Lab Sample ID:**	2305066-004A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 9:05		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2-Fluorobiphenyl (S)	SW8270C		45 - 143		**65.2**		%	05/22/23	0:12	MT	474888
Nitrobenzene-d5 (S)	SW8270C		23 - 120		**61.7**		%	05/22/23	0:12	MT	474888
p-Terphenyl-d14 (S)	SW8270C		18 - 137		**83.4**		%	05/22/23	0:12	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-7-30	**Lab Sample ID:**	2305066-004A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 9:05		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/22/23 9:55:00AM
Prep Batch ID:	1151218	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	1.2	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Chloromethane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Vinyl Chloride	SW8260B	1	2.0	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Bromomethane	SW8260B	1	2.7	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Chloroethane	SW8260B	1	3.0	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Trichlorofluoromethane	SW8260B	1	2.1	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,1-Dichloroethene	SW8260B	1	2.0	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Freon 113	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Methylene Chloride	SW8260B	1	7.1	10	ND		ug/Kg	05/22/23	21:36	BP	474921
trans-1,2-Dichloroethene	SW8260B	1	2.1	10	ND		ug/Kg	05/22/23	21:36	BP	474921
MTBE	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	21:36	BP	474921
TBA	SW8260B	1	12	50	ND		ug/Kg	05/22/23	21:36	BP	474921
Diisopropyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,1-Dichloroethane	SW8260B	1	2.2	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Ethyl tert-Butyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	21:36	BP	474921
cis-1,2-Dichloroethene	SW8260B	1	2.2	10	ND		ug/Kg	05/22/23	21:36	BP	474921
2,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Bromochloromethane	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Chloroform	SW8260B	1	2.4	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Carbon Tetrachloride	SW8260B	1	2.1	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,1,1-Trichloroethane	SW8260B	1	2.1	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,1-Dichloropropene	SW8260B	1	2.0	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Benzene	SW8260B	1	2.2	10	ND		ug/Kg	05/22/23	21:36	BP	474921
TAME	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,2-Dichloroethane	SW8260B	1	2.3	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Trichloroethene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Dibromomethane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Bromodichloromethane	SW8260B	1	2.0	10	ND		ug/Kg	05/22/23	21:36	BP	474921
cis-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Toluene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Tetrachloroethene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:36	BP	474921
trans-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,1,2-Trichloroethane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Dibromochloromethane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,3-Dichloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,2-Dibromoethane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Chlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Ethylbenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:36	BP	474921

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-7-30	**Lab Sample ID:**	2305066-004A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 9:05		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/22/23 9:55:00AM
Prep Batch ID:	1151218	**Prep Analyst:**	BPATEL

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	21:36	BP	474921
m,p-Xylene	SW8260B	1	3.2	10	ND		ug/Kg	05/22/23	21:36	BP	474921
o-Xylene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Styrene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Bromoform	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Isopropyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:36	BP	474921
n-Propylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Bromobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,1,2,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	21:36	BP	474921
2-Chlorotoluene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,3,5-Trimethylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,2,3-Trichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/22/23	21:36	BP	474921
4-Chlorotoluene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:36	BP	474921
tert-Butylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,2,4-Trimethylbenzene	SW8260B	1	1.4	10	ND		ug/Kg	05/22/23	21:36	BP	474921
sec-Butyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/22/23	21:36	BP	474921
p-Isopropyltoluene	SW8260B	1	1.5	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,3-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,4-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:36	BP	474921
n-Butylbenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,2-Dichlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,2-Dibromo-3-Chloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Hexachlorobutadiene	SW8260B	1	1.4	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,2,4-Trichlorobenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/22/23	21:36	BP	474921
Naphthalene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:36	BP	474921
1,2,3-Trichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/22/23	21:36	BP	474921
2-Butanone	SW8260B	1	2.3	10.0	ND		ug/Kg	05/22/23	21:36	BP	474921
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**124**		%	05/22/23	21:36	BP	474921
(S) Toluene-d8	SW8260B		55.2 - 133		**101**		%	05/22/23	21:36	BP	474921
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**96.2**		%	05/22/23	21:36	BP	474921

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-1-5	**Lab Sample ID:**	2305066-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 10:55		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	8:42	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-1-5	**Lab Sample ID:**	2305066-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 10:55		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/15/23	5:45:00PM
Prep Batch ID:	1150976	**Prep Analyst:**	AJNG	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/16/23	13:48	ERR	474697

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-1-5	**Lab Sample ID:**	2305066-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 10:55		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/15/23 5:15:00PM
Prep Batch ID:	1150962	**Prep Analyst:**	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	20:56	AT	474699
Arsenic	SW6010B	1	0.15	1.30	**2.62**		mg/Kg	05/15/23	20:56	AT	474699
Barium	SW6010B	1	0.055	5.00	**171**		mg/Kg	05/15/23	20:56	AT	474699
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/15/23	20:56	AT	474699
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/15/23	20:56	AT	474699
Chromium	SW6010B	1	0.075	5.00	**24.5**		mg/Kg	05/15/23	20:56	AT	474699
Cobalt	SW6010B	1	0.070	5.00	**13.8**		mg/Kg	05/15/23	20:56	AT	474699
Copper	SW6010B	1	0.20	5.00	**28.9**		mg/Kg	05/15/23	20:56	AT	474699
Lead	SW6010B	1	0.10	3.00	**10.2**		mg/Kg	05/15/23	20:56	AT	474699
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	20:56	AT	474699
Nickel	SW6010B	1	0.50	5.00	**15.6**		mg/Kg	05/15/23	20:56	AT	474699
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/15/23	20:56	AT	474699
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/15/23	20:56	AT	474699
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/15/23	20:56	AT	474699
Vanadium	SW6010B	1	0.10	5.00	**53.5**		mg/Kg	05/15/23	20:56	AT	474699
Zinc	SW6010B	1	0.30	5.00	**91.5**		mg/Kg	05/15/23	20:56	AT	474699

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-1-5	**Lab Sample ID:**	2305066-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 10:55		
SDG:			

Prep Method:	3546_OCP	**Prep Batch Date/Time:**	5/13/23 10:20:00AM
Prep Batch ID:	1150929	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
alpha-BHC	SW8081B	1	0.25	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
gamma-BHC (Lindane)	SW8081B	1	0.71	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
beta-BHC	SW8081B	1	0.44	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
delta-BHC	SW8081B	1	0.65	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
Heptachlor	SW8081B	1	0.27	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
Aldrin	SW8081B	1	0.29	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
Heptachlor Epoxide	SW8081B	1	0.31	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
gamma-Chlordane	SW8081B	1	1.5	3.0	ND		ug/Kg	05/13/23	16:16	LA	474648
alpha-Chlordane	SW8081B	1	0.36	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
4,4'-DDE	SW8081B	1	0.61	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
Endosulfan I	SW8081B	1	0.29	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
Dieldrin	SW8081B	1	0.25	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
Endrin	SW8081B	1	0.79	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
4,4'-DDD	SW8081B	1	0.64	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
Endosulfan II	SW8081B	1	0.34	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
4,4'-DDT	SW8081B	1	0.74	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
Endrin Aldehyde	SW8081B	1	0.51	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
Methoxychlor	SW8081B	1	2.6	6.0	ND		ug/Kg	05/13/23	16:16	LA	474648
Endosulfan Sulfate	SW8081B	1	0.51	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
Endrin Ketone	SW8081B	1	0.43	2.0	ND		ug/Kg	05/13/23	16:16	LA	474648
Chlordane, Technical	SW8081B	1	2.7	20	ND		ug/Kg	05/13/23	16:16	LA	474648
Toxaphene	SW8081B	1	22	50	ND		ug/Kg	05/13/23	16:16	LA	474648
			Acceptance Limits								
Tetrachloro-M-Xylene (S)	SW8081B		48 - 125		**45.7**	S	%	05/13/23	16:16	LA	474648
Decachlorobiphenyl (S)	SW8081B		38 - 135		**47.6**		%	05/13/23	16:16	LA	474648

NOTE: S-TCMX surrogate outside of control limits due to possible matrix interference

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-1-15	**Lab Sample ID:**	2305066-008A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 11:06		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	4:05	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-1-15	**Lab Sample ID:**	2305066-008A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 11:06		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/17/23 7:15:00PM
Prep Batch ID:	1151067	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/18/23	13:37	BJAY	474773

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-1-15	**Lab Sample ID:**	2305066-008A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/04/23 / 11:06		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/17/23 7:00:00PM
Prep Batch ID:	1151065	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:24	AT	474846
Arsenic	SW6010B	1	0.15	1.30	ND		mg/Kg	05/18/23	20:24	AT	474846
Barium	SW6010B	1	0.055	5.00	**43.2**		mg/Kg	05/18/23	20:24	AT	474846
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/18/23	20:24	AT	474846
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/18/23	20:24	AT	474846
Chromium	SW6010B	1	0.075	5.00	ND		mg/Kg	05/18/23	20:24	AT	474846
Cobalt	SW6010B	1	0.070	5.00	ND		mg/Kg	05/18/23	20:24	AT	474846
Copper	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:24	AT	474846
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/18/23	20:24	AT	474846
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:24	AT	474846
Nickel	SW6010B	1	0.50	5.00	ND		mg/Kg	05/18/23	20:24	AT	474846
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/18/23	20:24	AT	474846
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/18/23	20:24	AT	474846
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:24	AT	474846
Vanadium	SW6010B	1	0.10	5.00	**13.8**		mg/Kg	05/18/23	20:24	AT	474846
Zinc	SW6010B	1	0.30	5.00	**14.7**		mg/Kg	05/18/23	20:24	AT	474846

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-10-5	**Lab Sample ID:**	2305066-012A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 14:27		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	4:26	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-10-5	**Lab Sample ID:**	2305066-012A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 14:27		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/17/23 7:15:00PM
Prep Batch ID:	1151067	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/18/23	13:39	BJAY	474773

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-10-5	**Lab Sample ID:**	2305066-012A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 14:27		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/17/23 7:00:00PM
Prep Batch ID:	1151065	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:26	AT	474846
Arsenic	SW6010B	1	0.15	1.30	**1.50**		mg/Kg	05/18/23	20:26	AT	474846
Barium	SW6010B	1	0.055	5.00	**84.0**		mg/Kg	05/18/23	20:26	AT	474846
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/18/23	20:26	AT	474846
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/18/23	20:26	AT	474846
Chromium	SW6010B	1	0.075	5.00	**12.0**		mg/Kg	05/18/23	20:26	AT	474846
Cobalt	SW6010B	1	0.070	5.00	**7.35**		mg/Kg	05/18/23	20:26	AT	474846
Copper	SW6010B	1	0.20	5.00	**10.6**		mg/Kg	05/18/23	20:26	AT	474846
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/18/23	20:26	AT	474846
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:26	AT	474846
Nickel	SW6010B	1	0.50	5.00	**7.15**		mg/Kg	05/18/23	20:26	AT	474846
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/18/23	20:26	AT	474846
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/18/23	20:26	AT	474846
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:26	AT	474846
Vanadium	SW6010B	1	0.10	5.00	**33.7**		mg/Kg	05/18/23	20:26	AT	474846
Zinc	SW6010B	1	0.30	5.00	**34.3**		mg/Kg	05/18/23	20:26	AT	474846

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-10-15	**Lab Sample ID:**	2305066-014A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 14:40		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	4:48	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-10-15	**Lab Sample ID:**	2305066-014A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 14:40		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/17/23 7:15:00PM
Prep Batch ID:	1151067	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/18/23	13:41	BJAY	474773

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-10-15	**Lab Sample ID:**	2305066-014A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 14:40		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/17/23 7:00:00PM
Prep Batch ID:	1151065	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:27	AT	474846
Arsenic	SW6010B	1	0.15	1.30	**1.61**		mg/Kg	05/18/23	20:27	AT	474846
Barium	SW6010B	1	0.055	5.00	**90.5**		mg/Kg	05/18/23	20:27	AT	474846
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/18/23	20:27	AT	474846
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/18/23	20:27	AT	474846
Chromium	SW6010B	1	0.075	5.00	**12.2**		mg/Kg	05/18/23	20:27	AT	474846
Cobalt	SW6010B	1	0.070	5.00	**8.20**		mg/Kg	05/18/23	20:27	AT	474846
Copper	SW6010B	1	0.20	5.00	**11.2**		mg/Kg	05/18/23	20:27	AT	474846
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/18/23	20:27	AT	474846
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:27	AT	474846
Nickel	SW6010B	1	0.50	5.00	**7.65**		mg/Kg	05/18/23	20:27	AT	474846
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/18/23	20:27	AT	474846
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/18/23	20:27	AT	474846
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:27	AT	474846
Vanadium	SW6010B	1	0.10	5.00	**35.5**		mg/Kg	05/18/23	20:27	AT	474846
Zinc	SW6010B	1	0.30	5.00	**39.5**		mg/Kg	05/18/23	20:27	AT	474846

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305066	**Prep Method:**	3546_OCP	**Prep Date:**	05/13/23	**Prep Batch:**	1150929
Matrix:	Soil	**Analytical Method:**	SW8081B	**Analyzed Date:**	5/13/2023	**Analytical Batch:**	474648
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
alpha-BHC	0.25	2.0	ND	
gamma-BHC (Lindane)	0.71	2.0	ND	
beta-BHC	0.44	2.0	ND	
delta-BHC	0.65	2.0	ND	
Heptachlor	0.27	2.0	ND	
Aldrin	0.29	2.0	ND	
Heptachlor Epoxide	0.31	2.0	ND	
gamma-Chlordane	1.5	3.0	ND	
alpha-Chlordane	0.36	2.0	ND	
4,4'-DDE	0.61	2.0	1.97	
Endosulfan I	0.29	2.0	ND	
Dieldrin	0.25	2.0	ND	
Endrin	0.79	2.0	ND	
4,4'-DDD	0.64	2.0	ND	
Endosulfan II	0.34	2.0	ND	
4,4'-DDT	0.74	2.0	ND	
Endrin Aldehyde	0.51	2.0	ND	
Methoxychlor	2.6	6.0	ND	
Endosulfan Sulfate	0.51	2.0	ND	
Endrin Ketone	0.43	2.0	ND	
Chlordane, Technical	2.7	20	ND	
Toxaphene	22	50	ND	
Tetrachloro-M-Xylene (S)			89.6	
Decachlorobiphenyl (S)			92.9	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305066	**Prep Method:**	3050B	**Prep Date:**	05/15/23	**Prep Batch:**	1150962
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/15/2023	**Analytical Batch:**	474699
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Antimony	0.050	5.00	ND	
Arsenic	0.15	1.30	ND	
Barium	0.055	5.00	0.14	J
Beryllium	0.055	5.00	ND	
Cadmium	0.10	0.750	ND	
Chromium	0.075	5.00	0.13	J
Cobalt	0.070	5.00	ND	
Copper	0.20	5.00	ND	
Lead	0.10	3.00	ND	
Molybdenum	0.050	5.00	0.050	
Nickel	0.50	5.00	ND	
Selenium	0.35	1.10	ND	
Silver	0.15	0.500	ND	
Thallium	0.55	5.00	ND	
Vanadium	0.10	5.00	ND	
Zinc	0.30	5.00	3.2	J

Work Order:	2305066	**Prep Method:**	7471BP	**Prep Date:**	05/15/23	**Prep Batch:**	1150976
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/16/2023	**Analytical Batch:**	474697
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Mercury	0.083	0.50	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305066	**Prep Method:**	3050B	**Prep Date:**	05/17/23	**Prep Batch:**	1151065
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474846
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Antimony	0.050	5.00	0.065	
Arsenic	0.15	1.30	ND	
Barium	0.055	5.00	0.19	
Beryllium	0.055	5.00	ND	
Cadmium	0.10	0.750	ND	
Chromium	0.075	5.00	0.16	
Cobalt	0.070	5.00	ND	
Copper	0.20	5.00	ND	
Lead	0.10	3.00	ND	
Molybdenum	0.050	5.00	0.15	
Nickel	0.50	5.00	ND	
Selenium	0.35	1.10	ND	
Silver	0.15	0.500	ND	
Thallium	0.55	5.00	ND	
Vanadium	0.10	5.00	ND	
Zinc	0.30	5.00	ND	

Work Order:	2305066	**Prep Method:**	7471BP	**Prep Date:**	05/17/23	**Prep Batch:**	1151067
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474773
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Mercury	0.083	0.50	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305066	**Prep Method:**	3546_BNA	**Prep Date:**	05/19/23	**Prep Batch:**	1151137
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474887
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
N-Nitrosodimethylamine	46.9	720	ND		
Phenol	43.8	288	ND		
Bis(2-chloroethyl)ether	13.3	144	ND		
2-Chlorophenol	47.7	288	ND		
1,3-Dichlorobenzene	13.1	144	ND		
1,4-Dichlorobenzene	14.6	144	ND		
Benzyl Alcohol	20.5	288	ND		
1,2-Dichlorobenzene	13.5	144	ND		
2-Methylphenol (o-Cresol)	29.3	288	ND		
N-Methyl-2-Pyrrolidone (NMP)	68.0	720	ND		
	12.6	144	ND		
3-/4-Methylphenol (p-/m-Cresol)	31.3	288	ND		
N-nitroso-di-n-propylamine	13.2	144	ND		
Hexachloroethane	17.1	144	ND		
Nitrobenzene	12.8	144	ND		
Isophorone	12.2	144	ND		
2-Nitrophenol	25.4	288	ND		
2,4-Dimethylphenol	22.8	288	ND		
Benzoic Acid	41.7	288	ND		
Bis(2-Chloroethoxy)methane	9.79	144	ND		
Bis(2-chloroisopropyl)ether	12.6	144	ND		
2,4-Dichlorophenol	39.3	288	ND		
1,2,4-Trichlorobenzene	11.8	144	ND		
Naphthalene	10.6	144	ND		
2,6-Dichlorophenol	35.8	288	ND		
Hexachloro-1,3-butadiene	8.34	144	ND		
4-Chloro-3-methylphenol	33.8	288	ND		
2-Methylnaphthalene	10.4	144	ND		
1-Methylnaphthalene	12.2	144	ND		
Hexachlorocyclopentadiene	12.9	144	ND		
2,4,6-Trichlorophenol	35.9	288	ND		
2,4,5-Trichlorophenol	33.4	288	ND		
2-Chloronaphthalene	10.6	144	ND		
1,4-Dinitrobenzene	10.3	144	ND		
Dimethyl phthalate	14.2	720	ND		
1,3-Dinitrobenzene	10.4	144	ND		
Acenaphthylene	8.28	144	ND		
2,6-Dinitrotoluene	11.3	144	ND		
1,2-Dinitrobenzene	15.8	144	ND		
Acenaphthene	10.7	144	ND		
2,4-Dinitrophenol	77.6	720	ND		
4-Nitrophenol	54.7	720	ND		
Dibenzofuran	11.2	144	ND		
2,4-Dinitrotoluene	12.1	144	ND		
2,3,5,6-Tetrachlorophenol	27.6	288	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305066	**Prep Method:**	3546_BNA	**Prep Date:**	05/19/23	**Prep Batch:**	1151137
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474887
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
2,3,4,6-Tetrachlorophenol	31.5	288	ND	
Diethylphthalate	13.6	720	79.2	
Fluorene	10.3	144	ND	
4-Chlorophenyl-phenylether	9.32	144	ND	
4,6-Dinitro-2-methylphenol	13.4	288	ND	
Diphenylamine	13.0	144	ND	
Azobenzene	114	144	ND	
4-Bromophenyl-phenylether	8.23	144	ND	
Hexachlorobenzene	8.66	144	ND	
Pentachlorophenol	25.0	288	ND	
Phenanthrene	9.32	144	ND	
Anthracene	8.91	144	ND	
Carbazole	10.7	144	ND	
Di-n-butylphthalate	13.5	144	ND	
Fluoranthene	10.0	147	ND	
Benzidine	147	144	ND	
Pyrene	12.0	144	ND	
Butylbenzylphthalate	21.0	720	ND	
Benzo(a)anthracene	9.80	144	ND	
3,3-Dichlorobenzidine	118	144	ND	
Chrysene	15.2	144	ND	
Bis(2-Ethylhexyl)phthalate	15.3	720	ND	
Di-n-Octylphthalate	12.3	144	ND	
Benzo(b)fluorathene	12.0	144	ND	
benzo(k)fluorathene	8.16	144	ND	
Benzo(a)pyrene	9.80	144	ND	
Indeno(1,2,3-c,d)pyrene	13.8	144	ND	
Dibenzo(a,h)anthracene	12.7	144	ND	
Benzo(g,h,i)perylene	12.7	144	ND	
Pyridine	43.8	720	ND	
2-Fluorophenol (S)			88.1	
Phenol-d6 (S)			105	
2,4,6-Tribromophenol (S)			96.0	
2-Fluorobiphenyl (S)			80.2	
Nitrobenzene-d5 (S)			88.9	
p-Terphenyl-d14 (S)			91.7	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305066	**Prep Method:**	7199MP	**Prep Date:**	05/18/23	**Prep Batch:**	1151157
Matrix:	Soil	**Analytical Method:**	SW7199	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474857
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Hexavalent Chromium	3.1	10	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305066	**Prep Method:**	5035	**Prep Date:**	05/22/23	**Prep Batch:**	1151218
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/22/2023	**Analytical Batch:**	474921
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Dichlorodifluoromethane	1.2	10	ND		
Chloromethane	1.8	10	ND		
Vinyl Chloride	2.0	10	ND		
Bromomethane	2.7	10	ND		
Chloroethane	3.0	10	ND		
Trichlorofluoromethane	2.1	10	ND		
1,1-Dichloroethene	2.0	10	ND		
Freon 113	1.9	10	ND		
Methylene Chloride	7.1	10	ND		
trans-1,2-Dichloroethene	2.1	10	ND		
MTBE	2.3	10	ND		
TBA	12	50	ND		
Diisopropyl ether	2.3	10	ND		
1,1-Dichloroethane	2.2	10	ND		
Ethyl tert-Butyl ether	2.3	10	ND		
cis-1,2-Dichloroethene	2.2	10	ND		
2,2-Dichloropropane	1.9	10	ND		
Bromochloromethane	2.3	10	ND		
Chloroform	2.4	10	ND		
Carbon Tetrachloride	2.1	10	ND		
1,1,1-Trichloroethane	2.1	10	ND		
1,1-Dichloropropene	2.0	10	ND		
Benzene	2.2	10	ND		
TAME	2.3	10	ND		
1,2-Dichloroethane	2.3	10	ND		
Trichloroethene	1.8	10	ND		
Dibromomethane	1.8	10	ND		
1,2-Dichloropropane	1.9	10	ND		
Bromodichloromethane	2.0	10	ND		
cis-1,3-Dichloropropene	1.6	10	ND		
Toluene	1.8	10	ND		
Tetrachloroethene	1.7	10	ND		
trans-1,3-Dichloropropene	1.6	10	ND		
1,1,2-Trichloroethane	1.8	10	ND		
Dibromochloromethane	1.9	10	ND		
1,3-Dichloropropane	1.8	10	ND		
1,2-Dibromoethane	1.8	10	ND		
Chlorobenzene	1.8	10	ND		
Ethylbenzene	1.7	10	ND		
1,1,1,2-Tetrachloroethane	1.9	10	ND		
m,p-Xylene	3.2	10	ND		
o-Xylene	1.7	10	ND		
Styrene	1.6	10	ND		
Bromoform	1.7	10	ND		
Isopropyl Benzene	1.6	10	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305066	**Prep Method:**	5035	**Prep Date:**	05/22/23	**Prep Batch:**	1151218
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/22/2023	**Analytical Batch:**	474921
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
n-Propylbenzene	1.6	10	ND	
Bromobenzene	1.8	10	ND	
1,1,2,2-Tetrachloroethane	1.9	10	ND	
2-Chlorotoluene	1.8	10	ND	
1,3,5-Trimethylbenzene	1.6	10	ND	
1,2,3-Trichloropropane	1.9	10	ND	
4-Chlorotoluene	1.6	10	ND	
tert-Butylbenzene	1.6	10	ND	
1,2,4-Trimethylbenzene	1.4	10	ND	
sec-Butyl Benzene	1.6	10	ND	
p-Isopropyltoluene	1.5	10	ND	
1,3-Dichlorobenzene	1.7	10	ND	
1,4-Dichlorobenzene	1.7	10	ND	
n-Butylbenzene	1.5	10	ND	
1,2-Dichlorobenzene	1.8	10	ND	
1,2-Dibromo-3-Chloropropane	1.8	10	ND	
Hexachlorobutadiene	1.4	10	ND	
1,2,4-Trichlorobenzene	1.5	10	ND	
Naphthalene	1.7	10	2.5	
1,2,3-Trichlorobenzene	1.7	10	ND	
2-Butanone	2.3	10	ND	
(S) Dibromofluoromethane			114	
(S) Toluene-d8			103	
(S) 4-Bromofluorobenzene			98.7	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305066	**Prep Method:**	3546_OCP	**Prep Date:**	05/13/23	**Prep Batch:**	1150929
Matrix:	Soil	**Analytical Method:**	SW8081B	**Analyzed Date:**	5/13/2023	**Analytical Batch:**	474648
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
gamma-BHC (Lindane)	0.16	2.0	ND	40	81.7	85.6	4.78	25 - 135	30	
Heptachlor	0.11	2.0	ND	40	85.9	90.8	5.37	40 - 130	30	
Aldrin	0.20	2.0	ND	40	86.6	90.2	3.95	25 - 140	30	
delta-BHC	0.15	2.0	ND	40	86.3	91.6	5.91	60 - 130	30	
Heptachlor	0.19	2.0	ND	40	87.4	92.2	5.29	55 - 135	30	
4,4'-DDT	0.13	2.0	ND	40	88.1	94.2	6.86	45 - 140	30	
Tetrachloro-M-Xylene (S)				100	82.9	83.0		48 - 125		
Decachlorobiphenyl (S)				100	93.1	94.9		38 - 135		

Work Order:	2305066	**Prep Method:**	3050B	**Prep Date:**	05/15/23	**Prep Batch:**	1150962
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/15/2023	**Analytical Batch:**	474699
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony	0.050	5.00	ND	50	98.3	99.6	1.21	80 - 120	30	
Arsenic	0.15	1.30	ND	50	99.4	100	0.602	80 - 120	30	
Barium	0.055	5.00	0.14	50	101	102	0.985	80 - 120	30	
Beryllium	0.055	5.00	ND	50	102	103	0.976	80 - 120	30	
Cadmium	0.10	0.750	ND	50	101	102	0.985	80 - 120	30	
Chromium	0.075	5.00	0.13	50	102	103	0.976	80 - 120	30	
Cobalt	0.070	5.00	ND	50	102	103	0.976	80 - 120	30	
Copper	0.20	5.00	ND	50	102	103	0.976	80 - 120	30	
Lead	0.10	3.00	ND	50	101	102	0.985	80 - 120	30	
Molybdenum	0.050	5.00	0.050	50	101	102	0.985	80 - 120	30	
Nickel	0.50	5.00	ND	50	102	103	0.976	80 - 120	30	
Selenium	0.22	5.00	ND	50	92.9	93.5	0.643	80 - 120	30	
Silver	0.15	5.00	ND	50	99.3	100	0.602	80 - 120	30	
Thallium	0.20	5.00	ND	50	99.8	101	1.20	80 - 120	30	
Vanadium	0.10	5.00	ND	50	102	103	0.976	80 - 120	30	
Zinc	0.30	5.00	3.2	50	111	111	0.000	80 - 120	30	

Work Order:	2305066	**Prep Method:**	7471BP	**Prep Date:**	05/15/23	**Prep Batch:**	1150976
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/16/2023	**Analytical Batch:**	474697
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury	0.047	0.50	ND	1.25	105	104	0.766	80 - 120	20	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305066	**Prep Method:**	3050B	**Prep Date:**	05/17/23	**Prep Batch:**	1151065
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474846
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony	0.050	5.00	0.065	50	99.7	100	0.200	80 - 120	30	
Arsenic	0.15	1.30	ND	50	98.4	98.7	0.406	80 - 120	30	
Barium	0.055	5.00	0.19	50	103	103	0.000	80 - 120	30	
Beryllium	0.055	5.00	ND	50	102	102	0.000	80 - 120	30	
Cadmium	0.10	0.750	ND	50	101	101	0.000	80 - 120	30	
Chromium	0.075	5.00	0.16	50	103	103	0.000	80 - 120	30	
Cobalt	0.070	5.00	ND	50	102	102	0.000	80 - 120	30	
Copper	0.20	5.00	ND	50	105	105	0.000	80 - 120	30	
Lead	0.10	3.00	ND	50	102	102	0.000	80 - 120	30	
Molybdenum	0.050	5.00	0.15	50	103	103	0.000	80 - 120	30	
Nickel	0.50	5.00	ND	50	102	102	0.000	80 - 120	30	
Selenium	0.22	5.00	ND	50	91.8	92.4	0.651	80 - 120	30	
Silver	0.15	5.00	ND	50	100	101	0.995	80 - 120	30	
Thallium	0.20	5.00	ND	50	99.7	101	1.20	80 - 120	30	
Vanadium	0.10	5.00	ND	50	103	103	0.000	80 - 120	30	
Zinc	0.30	5.00	ND	50	100	101	0.995	80 - 120	30	

Work Order:	2305066	**Prep Method:**	7471BP	**Prep Date:**	05/17/23	**Prep Batch:**	1151067
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474773
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury	0.047	0.50	ND	1.25	117	117	0.000	80 - 120	20	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305066	**Prep Method:**	3546_BNA	**Prep Date:**	05/19/23	**Prep Batch:**	1151137
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474887
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Phenol	43.8	288	ND	1200	92.5	94.2	1.79	40 - 100	30	
2-Chlorophenol	47.7	288	ND	1200	92.4	88.8	3.67	45 - 105	30	
Bis(2-chloroethyl)ether	14.6	144	ND	400	76.2	75.7	0.658	35 - 105	30	
N-nitroso-di-n-propylamine	13.2	144	ND	400	107	109	1.85	40 - 115	30	
1,2,4-Trichlorobenzene	11.8	144	ND	400	78.7	75.4	4.21	45 - 110	30	
1,4-Dichlorobenzene	33.8	288	ND	1200	103	95.8	7.53	45 - 110	30	
Acenaphthene	10.7	144	ND	400	93.0	86.2	7.53	45 - 110	30	
4-Nitrophenol	54.7	720	ND	1200	87.3	81.4	7.31	15 - 140	30	
2,4-Dinitrotoluene	12.1	144	ND	400	91.9	91.3	0.819	50 - 115	30	
N-Methyl-2-Pyrrolidone (NMP)	12.0	144	ND	1200	68.3	70.5	3.12	25 - 120	30	
Pyrene	12.0	144	ND	400	90.7	87.6	3.65	45 - 145	30	
2-Fluorophenol (S)				11100	86.8	84.7		25 - 121		
Phenol-d6 (S)				11100	95.7	98.5		24 - 113		
2,4,6-Tribromophenol (S)				11100	107	97.9		19 - 122		
2-Fluorobiphenyl (S)				5560	89.1	81.3		30 - 143		
Nitrobenzene-d5 (S)				5560	93.6	77.9		23 - 120		
p-Terphenyl-d14 (S)				5560	86.3	79.5		18 - 137		

Work Order:	2305066	**Prep Method:**	7199MP	**Prep Date:**	05/18/23	**Prep Batch:**	1151157
Matrix:	Soil	**Analytical Method:**	SW7199	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474857
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Hexavalent Chromium	3.1	10	ND	100	101	103	1.96	80 - 120	20	

Work Order:	2305066	**Prep Method:**	5035	**Prep Date:**	05/22/23	**Prep Batch:**	1151218
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/22/2023	**Analytical Batch:**	474921
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
1,1-Dichloroethene	2.0	10	ND	50.0	113	113	0.000	53.7 - 139	30	
Benzene	2.2	10	ND	50.0	111	110	0.544	66.5 - 135	30	
Trichloroethene	1.8	10	ND	50.0	97.9	94.7	3.33	57.5 - 150	30	
Toluene	1.8	10	ND	50.0	102	98.9	2.99	56.8 - 134	30	
Chlorobenzene	1.8	10	ND	50.0	98.7	98.6	0.000	57.4 - 134	30	
(S) Dibromofluoromethane				50.0	113	110		59.8 - 148		
(S) Toluene-d8				50.0	104	103		55.2 - 133		
(S) 4-Bromofluorobenzene				50.0	108	109		55.8 - 141		

Torrent LABORATORY, INC.

Laboratory Qualifiers and Definitions

DEFINITIONS:

Accuracy/Bias (% Recovery) - The closeness of agreement between an observed value and an accepted reference value.
Blank (Method/Preparation Blank) -MB/PB - An analyte-free matrix to which all reagents are added in the same volumes/proportions as used in sample processing. The method blank is used to document contamination resulting from the analytical process.
Duplicate - a field sample and/or laboratory QC sample prepared in duplicate following all of the same processes and procedures used on the original sample (sample duplicate, LCSD, MSD)
Laboratory Control Sample (LCS ad LCSD) - A known matrix spiked with compounds representative of the target analyte(s). This is used to document laboratory performance.
Matrix - the component or substrate that contains the analyte of interest (e.g., - groundwater, sediment, soil, waste water, etc)
Matrix Spike (MS/MSD) - Client sample spiked with identical concentrations of target analyte (s). The spiking occurs prior to the sample preparation and analysis. They are used to document the precision and bias of a method in a given sample matrix.
Method Detection Limit (MDL) - the minimum concentration of a substance that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero
Practical Quantitation Limit/Reporting Limit/Limit of Quantitation (PQL/RL/LOQ) - a laboratory determined value at 2 to 5 times above the MDL that can be reproduced in a manner that results in a 99% confidence level that the result is both accurate and precise. PQLs/RLs/LODs reflect all preparation factors and/or dilution factors that have been applied to the sample during the preparation and/or analytical processes.
Precision (%RPD) - The agreement among a set of replicate/duplicate measurements without regard to known value of the replicates
Surrogate (S) or (Surr) - An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. Surrogates are used in most organic analysis to demonstrate matrix compatibility with the chosen method of analysis
Tentatively Identified Compound (TIC) - A compound not contained within the analytical calibration standards but present in the GCMS library of defined compounds. When the library is searched for an unknown compound, it can frequently give a tentative identification to the compound based on retention time and primary and secondary ion match. TICs are reported as estimates and are candidates for further investigation.
Units: the unit of measure used to express the reported result - **mg/L** and ***mg/Kg*** (equivalent to PPM - parts per million in **liquid** and ***solid***), **ug/L** and ***ug/Kg*** (equivalent to PPB - parts per billion in **liquid** and ***solid***), **ug/m3**, ***mg/m3***, **ppbv** and ***ppmv*** (all units of measure for reporting concentrations in air), **%** (equivalent to 10000 ppm or 1,000,000 ppb), **ug/Wipe** (concentration found on the surface of a single Wipe usually taken over a 100cm2 surface)

LABORATORY QUALIFIERS

B - Indicates when the analyte is found in the associated method or preparation blank
D - Surrogate is not recoverable due to the necessary dilution of the sample
E - Indicates the reportable value is outside of the calibration range of the instrument but within the linear range of the instrument (unless otherwise noted) Values reported with an E qualifier should be considered as estimated.
H- Indicates that the recommended holding time for the analyte or compound has been exceeded
J- Indicates a value between the method MDL and PQL and that the reported concentration should be considered as estimated rather the quantitative
NA - Not Analyzed
N/A - Not Applicable
ND - Not Detected at a concentration greater than the PQL/RL or, if reported to the MDL, at greater than the MDL.
NR - Not recoverable - a matrix spike concentration is not recoverable due to a concentration within the original sample that is greater than four times the spike concentration added
R- The % RPD between a duplicate set of samples is outside of the absolute values established by laboratory control charts
S- Spike recovery is outside of established method and/or laboratory control limits. Further explanation of the use of this qualifier should be included within a case narrative
X -Used to indicate that a value based on pattern identification is within the pattern range but not typical of the pattern found in standards. Further explanation may or may not be provided within the sample footnote and/or the case narrative.

Sample Receipt Checklist

Client Name: Langan

Project Name: VERNON

Work Order No.: 2305066

Date and Time Received: 5/9/2023 10:06:00AM

Received By: Lorna Imbat

Physically Logged By: Lorna Imbat

Checklist Completed By: Lorna Imbat

Carrier Name: FedEx

Chain of Custody (COC) Information

Chain of custody present?	Yes
Chain of custody signed when relinquished and received?	Yes
Chain of custody agrees with sample labels?	Yes
Custody seals intact on sample bottles?	Not Present

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Not Present
Shipping Container/Cooler In Good Condition?	Yes
Samples in proper container/bottle?	Yes
Samples containers intact?	Yes
Sufficient sample volume for indicated test?	Yes

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes			
Container/Temp Blank temperature in compliance?	Yes	Temperature:	2.0	°C
Water-VOA vials have zero headspace?	No VOA vials submitted			
Water-pH acceptable upon receipt?	N/A			

pH Checked by: N/A

pH Adjusted by: N/A

Comments:

Login Summary Report

Client ID:	TL5493	Langan	**QC Level:**	II
Project Name:	VERNON		**TAT Requested:**	3 Day Std:3
Project # :	721040501		**Date Received:**	5/9/2023
Report Due Date:	5/23/2023		**Time Received:**	10:06 am

Comments:

Work Order # : ***2305066***

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
2305066-001A	B-7-15	05/04/23 8:47	Soil	10/31/23			Hold Samples Met_S_6010B CAM17 Cr6_S_7199Mod Hg_S_7471B	
Sample Note:								
2305066-002A	B-7-20	05/04/23 8:51	Soil	10/31/23			Hold Samples	
2305066-003A	B-7-25	05/04/23 8:57	Soil	10/31/23			Hold Samples	
2305066-004A	B-7-30	05/04/23 9:05	Soil	10/31/23			Hold Samples VOC_S_8260B SVO_S_8270CFull	
2305066-005A	B-7-35	05/04/23 9:15	Soil	10/31/23			Hold Samples	
2305066-006A	B-1-5	05/04/23 10:55	Soil	10/31/23			Sub_Asb CARB435 A Cr6_S_7199Mod Met_S_6010B CAM17 Pest_S_8081OCP Hg_S_7471B	Yes
2305066-006B	B-1-5	05/04/23 10:55	Soil	10/31/23			Hold Samples 1633 DRAFT_S	
Sample Note:	PFAs data due 5/26							
2305066-007A	B-1-10	05/04/23 11:00	Soil	10/31/23			Hold Samples	
2305066-008A	B-1-15	05/04/23 11:06	Soil	10/31/23			Hold Samples Met_S_6010B CAM17 Cr6_S_7199Mod Hg_S_7471B	
2305066-009A	B-1-20	05/04/23 12:04	Soil	10/31/23			Hold Samples	
2305066-010A	B-1-25	05/04/23 12:10	Soil	10/31/23			Hold Samples	
2305066-011A	B-1-30	05/04/23 12:18	Soil	10/31/23			Hold Samples	
2305066-012A	B-10-5	05/05/23 14:27	Soil	11/01/23			Hold Samples	

Login Summary Report

Client ID:	TL5493	Langan	**QC Level:**	II
Project Name:	VERNON		**TAT Requested:**	3 Day Std:3
Project # :	721040501		**Date Received:**	5/9/2023
Report Due Date:	5/23/2023		**Time Received:**	10:06 am

Comments:

Work Order # : ***2305066***

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
							Met_S_6010B CAM17 Cr6_S_7199Mod Hg_S_7471B	
2305066-013A	B-10-10	05/05/23 14:35	Soil	11/01/23			Hold Samples	
2305066-014A	B-10-15	05/05/23 14:40	Soil	11/01/23			Hold Samples Met_S_6010B CAM17 Cr6_S_7199Mod Hg_S_7471B	
2305066-015A	B-10-20	05/05/23 14:45	Soil	11/01/23			Hold Samples	
2305066-016A	B-10-25	05/05/23 14:52	Soil	11/01/23			Hold Samples	
2305066-017A	B-10-30	05/05/23 14:55	Soil	11/01/23			Hold Samples	
2305066-018A	B-10-35	05/05/23 15:05	Soil	11/01/23			Hold Samples	

Torrent LABORATORY, INC.

Torrent LABORATORY, INC
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

Reset

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 2305066

Company Name: LANGAN ☐ Env. ☐ Non Env.			Project #: 721040501 PO#:
Address: 515 S. FLOWER ST, SUITE 1060			Project Name: VERNON
City: LA	State: CA	Zip Code: 90071	Comments: HOLD ALL SAMPLES
Telephone: 213 280 9903	Cell:		SAMPLER: M. CHE
REPORT TO: NICK CUTLER	BILL TO:		EMAIL: NCUTLER; MCHE @LANGAN.COM

TURNAROUND TIME:
☐ 2 - 8 Hours ☐ 2 Work Days ☐ 5 Work Days
☐ Noon - Nxt Day ☐ 3 Work Days ☐ 7 Work Days
☐ 1 Work Day ☐ 4 Work Days ☐ 10 Work Days

SAMPLE TYPE:
☐ Drinking Water ☐ Storm Water ☐ Air ☐ Waste Water ☐ Wipe ☐ Ground Water ☐ Other ☐ Soil ☐ Product / Bulk

REPORT FORMAT:
☐ Level II - Std. ☐ DoD/DoE Level III ☐ DoD/DoE Level III ☐ Excel - EDD ☐ EDF ☐ Client Specific EDD

ANALYSIS REQUESTED

LAB ID	CANISTER I.D.	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	8260B VOC	SVOC 8270 SIM	CAM 17 6010B	PFAS 537.1/DSM 5/31633	REMARKS
-001A	NA	B-7-15	5/4/23 0847	Soil	1	Glass	✓	✓	✓		HOLD
-002A		B-7-20	5/4/23 0851	Soil	1	Glass	✓	✓	✓		
-003A		B-7-25	5/4/23 0857	Soil	1	Glass	✓	✓	✓		
-004A		B-7-30	5/4/23 0905	Soil	1	Glass	✓	✓	✓		
-005A		B-7-35	5/4/23 0915	Soil	1	Glass	✓	✓	✓		
-006A		B-1-5	5/4/23 1055	Soil	2	Glass, plastic	✓	✓	✓	✓	
-007A		B-1-10	5/4/23 1100	Soil	1	Glass	✓	✓	✓		
-008A		B-1-15	5/4/23 1106	Soil	1	Glass	✓	✓	✓		
-009A		B-1-20	5/4/23 1204	Soil	1	Glass	✓	✓	✓		
-010A		B-1-25	5/4/23 1210	Soil	1	Glass	✓	✓	✓		

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	Melody Che	MELODY CHE	5/8/23	1630		L-D Imbat	5-9-23	1006
2	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:

Cooler Temperature 2.1 #3 °C Samples Received on ice? Yes ☒ No ☐ Method of Shipment FedEx

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

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Torrent LABORATORY, INC.

Torrent LABORATORY, INC
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

Reset

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 2305066

Company Name: LANGAN ☐ Env. ☐ Non Env.		Project #: 721040501	PO#:
Address: 515 S. FLOWER ST, SUITE 1060		Project Name: VER NON	
City: LOS ANGELES	State: CA	Zip Code: 90071	Comments: HOLD ALL SAMPLES
Telephone: 213 280 9903	Cell:		SAMPLER: M. CHE
REPORT TO: NICK CUTLER	BILL TO:		EMAIL: NCUTLER MCHE @ LANGAN.COM

TURNAROUND TIME:
☐ 2 - 8 Hours ☐ 2 Work Days ☐ 5 Work Days
☐ Noon - Nxt Day ☐ 3 Work Days ☐ 7 Work Days
☐ 1 Work Day ☐ 4 Work Days ☐ 10 Work Days

SAMPLE TYPE:
☐ Drinking Water
☐ Storm Water ☐ Air
☐ Waste Water ☐ Wipe
☐ Ground Water ☐ Other
☐ Soil ☐ Product / Bulk

REPORT FORMAT:
☐ Level II - Std.
☐ DoD/DoE Level III
☐ DoD/DoE Level III
☐ Excel - EDD ☐ EDF
☐ Client Specific EDD

ANALYSIS REQUESTED: 8260B VOC; SVOC 8270 SIM; LAM 17 6010B

LAB ID	CANISTER I.D.	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	REMARKS
-011A	NA	B-1-30	5/4/23 1218	Soil	1	Glass	HOLD

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	Melody Che	MELODY CHE	5/9/23	1630	[illegible]	L-D-Imbat	5-9-23	1006
2	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:

Cooler Temperature 2.1 #3 °C Samples Received on ice? Yes ☒ No ☐ Method of Shipment Fed EX

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 4 of 47

Torrent LABORATORY, INC.

Torrent LABORATORY, INC
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

Reset

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 2305066

Company Name: LANGAN ☑ Env. ☐ Non Env.
Address: 515 S. FLOWER ST, SUITE 1060
City: LA State: CA Zip Code: 90071
Telephone: 213 286 0903 Cell:
REPORT TO: N. CUTLER BILL TO:

Project #: 720405O1 PO#:
Project Name: VERNON
Comments: HOLD ALL SAMPLES FOR ANALYSIS
SAMPLER: M. CHE
EMAIL: NCUTLER AND MCHE@LANGAN.COM

TURNAROUND TIME:
☐ 2 - 8 Hours ☐ 2 Work Days ☐ 5 Work Days
☐ Noon - Nxt Day ☐ 3 Work Days ☐ 7 Work Days
☐ 1 Work Day ☐ 4 Work Days ☐ 10 Work Days

SAMPLE TYPE:
☐ Drinking Water ☐ Storm Water ☐ Air ☐ Waste Water ☐ Wipe ☐ Ground Water ☐ Other ☐ Soil ☐ Product / Bulk

REPORT FORMAT:
☐ Level II - Std. ☐ DoD/DoE Level III ☐ DoD/DoE Level III ☐ Excel - EDD ☐ EDF ☐ Client Specific EDD

ANALYSIS REQUESTED

LAB ID	CANISTER I.D.	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	VOC 8260B	SVOC 8270 SIM	CAM 17 6010B	REMARKS
-012A	NA	B-10-5	5/5/23 1427	Soil	1	Glass	✓	✓	✓	HOLD
-013A		B-10-10	5/5/23 1435	Soil	1	Glass	✓	✓	✓	
-014A		B-10-15	5/5/23 1440	Soil	1	Glass	✓	✓	✓	
-015A		B-10-20	5/5/23 1445	Soil	1	Glass	✓	✓	✓	
-016A		B-10-25	5/5/23 1452	Soil	1	Glass	✓	✓	✓	
-017A		B-10-30	5/5/23 1455	Soil	1	Glass	✓	✓	✓	
-018A		B-10-35	5/5/23 1505	Soil	1	Glass	✓	✓	✓	

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	[signature]	MELODY CHE	5/8/23	1630	[signature]	L.D. Imbat	5-9-23	1006
2								

Cooler Temperature 2.0/#3 °C Samples Received on ice? Yes ☒ No ☐ Method of Shipment FedEX

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 7 of 7

Gmail Torrent Laboratory, Inc. <pm@torrentlaboratory.com>

RE: [External] Re: Sample order for PO: 721040501

1 message

Nick Cutler <ncutler@langan.com> Wed, May 10, 2023 at 8:42 PM
To: "Torrent Laboratory, Inc." <pm@torrentlaboratory.com>, Katherine Thomas <kthomas@langan.com>
Cc: "melanie.moran@torrentlaboratory.com" <melanie.moran@torrentlaboratory.com>, Melody Che <mche@langan.com>

Hi Kathie –

Can you please run the analyses on a 3-day TAT per the table below?

Sample ID	Metals 6010B	Pesticides 8081A	PCBs 8082	ACM PLM
B-1-5	1	1		1
B-2-5	1	1	1	
B-3-5	1	1		
B-4-6	1			
B-5-5	1			
B-6-5	1			
B-7-6	1			
B-8-5	1	1		
B-9-5	1			
B-11-5	1	1	1	
B-12-5	1		1	
B-13-5	1		1	

Cordially,
Nick Cutler

483 Sinclair Frontage Rd., Milpitas, CA 95035 | tel: 408.263.5258 | fax: 408.263.8293 | www.torrentlab.com

EMSL Analytical, Inc.

464 McCormick Street San Leandro, CA 94577
Phone/Fax: (510) 895-3675 / (510) 895-3680
http://www.EMSL.com / sanleandrolab@emsl.com

EMSL Order:	092310441
Customer ID:	TORR80
Customer PO:	2305066
Project ID:	

Attention:	Kathie Evans Torrent Laboratory, Inc. 483 Sinclair Frontage Rd. Milpitas, CA 95035	**Phone:**	(408) 263-5258
		Fax:	(408) 263-8293
		Received:	05/12/2023 11:15 AM
		Analysis Date:	05/16/2023
		Collected:	
Project:	2305066		

Test Report: Asbestos Analysis of Soils via AHERA Method 40CFR 763 Subpart E Appendix E supplemented with EPA 600/R-93/116 using Polarized Light Microscopy with CARB 435 Prep (Milling) Level A for 0.25% Target Analytical Sensitivity

			Non-Asbestos		Asbestos
Sample	**Description**	**Appearance**	**% Fibrous**	**% Non-Fibrous**	**% Type**
2305066-006A *092310441-0001*	SOIL	Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	**None Detected**

Analyst(s)

Adam C. Fink (1)

Cecilia Yu, Laboratory Manager
or other approved signatory

EMSL maintains liability limited to cost of analysis. Interpretation and use of test results are the responsibility of the client. This report relates only to the samples reported above, and may not be reproduced, except in full, without written approval by EMSL. EMSL bears no responsibility for sample collection activities or analytical method limitations. The report reflects the samples as received. Results are generated from the field sampling data (sampling volumes and areas, locations, etc.) provided by the client on the Chain of Custody. Samples are within quality control criteria and met method specifications unless otherwise noted. Some samples may contain asbestos fibers present in dimensions below PLM resolution limits. EMSL suggests that samples reported as <0.25% or none detected undergo additional analysis via TEM.

Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from: 05/17/2023 01:09:25

Torrent
LABORATORY, INC.

Langan
135 Main Street, Suite 1500
San Francisco, California 94105
Tel: 415.955.5200

RE: VERNON

Work Order No.: 2305067 Rev: 2

Dear Nick Cutler:

Torrent Laboratory, Inc. received 19 sample(s) on May 09, 2023 for the analyses presented in the following Report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.

Torrent Laboratory, Inc. is certified by the State of California, ELAP #1991. If you have any questions regarding these test results, please feel free to contact the Project Management Team at (408)263-5258; ext 204.



Kathie Evans
Project Manager

May 19, 2023
Date

Torrent LABORATORY, INC.

Date: 5/19/2023

Client: Langan

Project: VERNON

Work Order: 2305067

CASE NARRATIVE

Unless otherwise indicated in the following narrative, no issues encountered with the receiving, preparation, analysis or reporting of the results associated with this work order.

Unless otherwise indicated in the following narrative, no results have been method and/or field blank corrected.

Reported results relate only to the items/samples tested by the laboratory.

This report shall not be reproduced, except in full, without the written approval of Torrent Laboratory, Inc.

REVISIONS

Report revised to include additionally requested data

Rev. 1 (5/19/23)

Report revised to include additionally requested SVOC and VOC data.

Rev. 2 (5/23/23)

Torrent LABORATORY, INC.

Sample Result Summary

Report prepared for: Nick Cutler
Langan

Date Received: 05/09/23
Date Reported: 05/19/23

B-3-5 2305067-001

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	2.65	mg/Kg
Barium	SW6010B	1	0.055	5.00	111	mg/Kg
Chromium	SW6010B	1	0.075	5.00	19.4	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	9.80	mg/Kg
Copper	SW6010B	1	0.20	5.00	30.7	mg/Kg
Lead	SW6010B	1	0.10	3.00	8.55	mg/Kg
Nickel	SW6010B	1	0.50	5.00	12.8	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	42.0	mg/Kg
Zinc	SW6010B	1	0.30	5.00	60.5	mg/Kg
Hexavalent Chromium	SW7199	1	3.1	10	90.3	ug/Kg

B-3-10 2305067-002

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

B-3-15 2305067-003

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	2.79	mg/Kg
Barium	SW6010B	1	0.055	5.00	106	mg/Kg
Chromium	SW6010B	1	0.075	5.00	17.0	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	10.1	mg/Kg
Copper	SW6010B	1	0.20	5.00	20.3	mg/Kg
Lead	SW6010B	1	0.10	3.00	3.93	mg/Kg
Nickel	SW6010B	1	0.50	5.00	11.0	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	46.6	mg/Kg
Zinc	SW6010B	1	0.30	5.00	48.1	mg/Kg

B-3-30 2305067-006

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

B-8-5 2305067-007

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	1.54	mg/Kg
Barium	SW6010B	1	0.055	5.00	82.0	mg/Kg
Chromium	SW6010B	1	0.075	5.00	12.2	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	7.60	mg/Kg
Copper	SW6010B	1	0.20	5.00	9.50	mg/Kg
Nickel	SW6010B	1	0.50	5.00	6.75	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	38.7	mg/Kg
Zinc	SW6010B	1	0.30	5.00	37.9	mg/Kg

Torrent LABORATORY, INC.

Sample Result Summary

Report prepared for: Nick Cutler
Langan

Date Received: 05/09/23
Date Reported: 05/19/23

B-8-15 2305067-009

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Barium	SW6010B	1	0.055	5.00	60.5	mg/Kg
Chromium	SW6010B	1	0.075	5.00	9.00	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	5.90	mg/Kg
Copper	SW6010B	1	0.20	5.00	7.00	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	34.0	mg/Kg
Zinc	SW6010B	1	0.30	5.00	26.7	mg/Kg

B-8-30 2305067-012

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

B-9-5 2305067-013

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Arsenic	SW6010B	1	0.15	1.30	3.22	mg/Kg
Barium	SW6010B	1	0.055	5.00	127	mg/Kg
Chromium	SW6010B	1	0.075	5.00	39.8	mg/Kg
Cobalt	SW6010B	1	0.070	5.00	11.0	mg/Kg
Copper	SW6010B	1	0.20	5.00	43.7	mg/Kg
Lead	SW6010B	1	0.10	3.00	36.2	mg/Kg
Nickel	SW6010B	1	0.50	5.00	46.6	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	48.4	mg/Kg
Zinc	SW6010B	1	0.30	5.00	80.5	mg/Kg

B-9-15 2305067-015

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit
Barium	SW6010B	1	0.055	5.00	51.5	mg/Kg
Chromium	SW6010B	1	0.075	5.00	7.05	mg/Kg
Copper	SW6010B	1	0.20	5.00	6.05	mg/Kg
Vanadium	SW6010B	1	0.10	5.00	27.5	mg/Kg
Zinc	SW6010B	1	0.30	5.00	21.7	mg/Kg

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-5	**Lab Sample ID:**	2305067-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 7:57		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151158	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	**90.3**		ug/Kg	05/19/23	11:54	PH	474858

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-5	**Lab Sample ID:**	2305067-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 7:57		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/15/23 5:45:00PM
Prep Batch ID:	1150976	**Prep Analyst:**	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/16/23	13:50	ERR	474697

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-5	**Lab Sample ID:**	2305067-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 7:57		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/15/23 5:15:00PM
Prep Batch ID:	1150962	**Prep Analyst:**	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	20:58	AT	474699
Arsenic	SW6010B	1	0.15	1.30	**2.65**		mg/Kg	05/15/23	20:58	AT	474699
Barium	SW6010B	1	0.055	5.00	**111**		mg/Kg	05/15/23	20:58	AT	474699
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/15/23	20:58	AT	474699
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/15/23	20:58	AT	474699
Chromium	SW6010B	1	0.075	5.00	**19.4**		mg/Kg	05/15/23	20:58	AT	474699
Cobalt	SW6010B	1	0.070	5.00	**9.80**		mg/Kg	05/15/23	20:58	AT	474699
Copper	SW6010B	1	0.20	5.00	**30.7**		mg/Kg	05/15/23	20:58	AT	474699
Lead	SW6010B	1	0.10	3.00	**8.55**		mg/Kg	05/15/23	20:58	AT	474699
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	20:58	AT	474699
Nickel	SW6010B	1	0.50	5.00	**12.8**		mg/Kg	05/15/23	20:58	AT	474699
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/15/23	20:58	AT	474699
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/15/23	20:58	AT	474699
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/15/23	20:58	AT	474699
Vanadium	SW6010B	1	0.10	5.00	**42.0**		mg/Kg	05/15/23	20:58	AT	474699
Zinc	SW6010B	1	0.30	5.00	**60.5**		mg/Kg	05/15/23	20:58	AT	474699

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-5	**Lab Sample ID:**	2305067-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 7:57		
SDG:			

Prep Method:	3546_OCP	**Prep Batch Date/Time:**	5/13/23 10:20:00AM
Prep Batch ID:	1150929	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
The results shown below are reported using their MDL.											
alpha-BHC	SW8081B	10	2.5	20	ND		ug/Kg	05/13/23	16:29	LA	474648
gamma-BHC (Lindane)	SW8081B	10	7.1	20	ND		ug/Kg	05/13/23	16:29	LA	474648
beta-BHC	SW8081B	10	4.4	20	ND		ug/Kg	05/13/23	16:29	LA	474648
delta-BHC	SW8081B	10	6.5	20	ND		ug/Kg	05/13/23	16:29	LA	474648
Heptachlor	SW8081B	10	2.7	20	ND		ug/Kg	05/13/23	16:29	LA	474648
Aldrin	SW8081B	10	2.9	20	ND		ug/Kg	05/13/23	16:29	LA	474648
Heptachlor Epoxide	SW8081B	10	3.1	20	ND		ug/Kg	05/13/23	16:29	LA	474648
gamma-Chlordane	SW8081B	10	15	30	ND		ug/Kg	05/13/23	16:29	LA	474648
alpha-Chlordane	SW8081B	10	3.6	20	ND		ug/Kg	05/13/23	16:29	LA	474648
4,4'-DDE	SW8081B	10	6.1	20	ND		ug/Kg	05/13/23	16:29	LA	474648
Endosulfan I	SW8081B	10	2.9	20	ND		ug/Kg	05/13/23	16:29	LA	474648
Dieldrin	SW8081B	10	2.5	20	ND		ug/Kg	05/13/23	16:29	LA	474648
Endrin	SW8081B	10	7.9	20	ND		ug/Kg	05/13/23	16:29	LA	474648
4,4'-DDD	SW8081B	10	6.4	20	ND		ug/Kg	05/13/23	16:29	LA	474648
Endosulfan II	SW8081B	10	3.4	20	ND		ug/Kg	05/13/23	16:29	LA	474648
4,4'-DDT	SW8081B	10	7.4	20	ND		ug/Kg	05/13/23	16:29	LA	474648
Endrin Aldehyde	SW8081B	10	5.1	20	ND		ug/Kg	05/13/23	16:29	LA	474648
Methoxychlor	SW8081B	10	26	60	ND		ug/Kg	05/13/23	16:29	LA	474648
Endosulfan Sulfate	SW8081B	10	5.1	20	ND		ug/Kg	05/13/23	16:29	LA	474648
Endrin Ketone	SW8081B	10	4.3	20	ND		ug/Kg	05/13/23	16:29	LA	474648
Chlordane, Technical	SW8081B	10	27	200	ND		ug/Kg	05/13/23	16:29	LA	474648
Toxaphene	SW8081B	10	220	500	ND		ug/Kg	05/13/23	16:29	LA	474648
			Acceptance Limits								
Tetrachloro-M-Xylene (S)	SW8081B		48 - 125		**71.6**		%	05/13/23	16:29	LA	474648
Decachlorobiphenyl (S)	SW8081B		38 - 135		**81.9**		%	05/13/23	16:29	LA	474648

NOTE: Sample diluted due to the nature of the sample matrix (dark colored extract)

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-10	**Lab Sample ID:**	2305067-002A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 8:06		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
N-Nitrosodimethylamine	SW8270C	1	46.9	720	ND		ug/Kg	05/22/23	0:42	MT	474888
Phenol	SW8270C	1	43.8	288	ND		ug/Kg	05/22/23	0:42	MT	474888
Bis(2-chloroethyl)ether	SW8270C	1	13.3	144	ND		ug/Kg	05/22/23	0:42	MT	474888
2-Chlorophenol	SW8270C	1	47.7	288	ND		ug/Kg	05/22/23	0:42	MT	474888
1,3-Dichlorobenzene	SW8270C	1	13.1	144	ND		ug/Kg	05/22/23	0:42	MT	474888
1,4-Dichlorobenzene	SW8270C	1	14.6	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Benzyl Alcohol	SW8270C	1	20.5	288	ND		ug/Kg	05/22/23	0:42	MT	474888
1,2-Dichlorobenzene	SW8270C	1	13.5	144	ND		ug/Kg	05/22/23	0:42	MT	474888
2-Methylphenol (o-Cresol)	SW8270C	1	29.3	288	ND		ug/Kg	05/22/23	0:42	MT	474888
N-Methyl-2-Pyrrolidone (NMP)	SW8270C	1	68.0	720	ND		ug/Kg	05/22/23	0:42	MT	474888
3-/4-Methylphenol (p-/m-Cresol)	SW8270C	1	31.3	288	ND		ug/Kg	05/22/23	0:42	MT	474888
N-nitroso-di-n-propylamine	SW8270C	1	13.2	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Hexachloroethane	SW8270C	1	17.1	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Nitrobenzene	SW8270C	1	12.8	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Isophorone	SW8270C	1	12.2	144	ND		ug/Kg	05/22/23	0:42	MT	474888
2-Nitrophenol	SW8270C	1	25.4	288	ND		ug/Kg	05/22/23	0:42	MT	474888
2,4-Dimethylphenol	SW8270C	1	22.8	288	ND		ug/Kg	05/22/23	0:42	MT	474888
Benzoic Acid	SW8270C	1	41.7	288	ND		ug/Kg	05/22/23	0:42	MT	474888
Bis(2-Chloroethoxy)methane	SW8270C	1	9.79	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Bis(2-chloroisopropyl)ether	SW8270C	1	12.6	144	ND		ug/Kg	05/22/23	0:42	MT	474888
2,4-Dichlorophenol	SW8270C	1	39.3	288	ND		ug/Kg	05/22/23	0:42	MT	474888
1,2,4-Trichlorobenzene	SW8270C	1	11.8	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Naphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/22/23	0:42	MT	474888
2,6-Dichlorophenol	SW8270C	1	35.8	288	ND		ug/Kg	05/22/23	0:42	MT	474888
Hexachloro-1,3-butadiene	SW8270C	1	8.34	144	ND		ug/Kg	05/22/23	0:42	MT	474888
4-Chloro-3-methylphenol	SW8270C	1	33.8	288	ND		ug/Kg	05/22/23	0:42	MT	474888
2-Methylnaphthalene	SW8270C	1	10.4	144	ND		ug/Kg	05/22/23	0:42	MT	474888
1-Methylnaphthalene	SW8270C	1	12.2	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Hexachlorocyclopentadiene	SW8270C	1	12.9	144	ND		ug/Kg	05/22/23	0:42	MT	474888
2,4,6-Trichlorophenol	SW8270C	1	35.9	288	ND		ug/Kg	05/22/23	0:42	MT	474888
2,4,5-Trichlorophenol	SW8270C	1	33.4	288	ND		ug/Kg	05/22/23	0:42	MT	474888
2-Chloronaphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/22/23	0:42	MT	474888
1,4-Dinitrobenzene	SW8270C	1	10.3	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Dimethyl phthalate	SW8270C	1	14.2	720	ND		ug/Kg	05/22/23	0:42	MT	474888
1,3-Dinitrobenzene	SW8270C	1	10.4	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Acenaphthylene	SW8270C	1	8.28	144	ND		ug/Kg	05/22/23	0:42	MT	474888
2,6-Dinitrotoluene	SW8270C	1	11.3	144	ND		ug/Kg	05/22/23	0:42	MT	474888
1,2-Dinitrobenzene	SW8270C	1	15.8	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Acenaphthene	SW8270C	1	10.7	144	ND		ug/Kg	05/22/23	0:42	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-10	**Lab Sample ID:**	2305067-002A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 8:06		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2,4-Dinitrophenol	SW8270C	1	77.6	720	ND		ug/Kg	05/22/23	0:42	MT	474888
4-Nitrophenol	SW8270C	1	54.7	720	ND		ug/Kg	05/22/23	0:42	MT	474888
Dibenzofuran	SW8270C	1	11.2	144	ND		ug/Kg	05/22/23	0:42	MT	474888
2,4-Dinitrotoluene	SW8270C	1	12.1	144	ND		ug/Kg	05/22/23	0:42	MT	474888
2,3,5,6-Tetrachlorophenol	SW8270C	1	27.6	288	ND		ug/Kg	05/22/23	0:42	MT	474888
2,3,4,6-Tetrachlorophenol	SW8270C	1	31.5	288	ND		ug/Kg	05/22/23	0:42	MT	474888
Diethylphthalate	SW8270C	1	13.6	720	ND		ug/Kg	05/22/23	0:42	MT	474888
Fluorene	SW8270C	1	10.3	144	ND		ug/Kg	05/22/23	0:42	MT	474888
4-Chlorophenyl-phenylether	SW8270C	1	9.32	144	ND		ug/Kg	05/22/23	0:42	MT	474888
4,6-Dinitro-2-methylphenol	SW8270C	1	13.4	288	ND		ug/Kg	05/22/23	0:42	MT	474888
Diphenylamine	SW8270C	1	13.0	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Azobenzene	SW8270C	1	114	144	ND		ug/Kg	05/22/23	0:42	MT	474888
4-Bromophenyl-phenylether	SW8270C	1	8.23	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Hexachlorobenzene	SW8270C	1	8.66	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Pentachlorophenol	SW8270C	1	25.0	288	ND		ug/Kg	05/22/23	0:42	MT	474888
Phenanthrene	SW8270C	1	9.32	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Anthracene	SW8270C	1	8.91	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Carbazole	SW8270C	1	10.7	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Di-n-butylphthalate	SW8270C	1	13.5	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Fluoranthene	SW8270C	1	10.0	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Benzidine	SW8270C	1	147	147	ND		ug/Kg	05/22/23	0:42	MT	474888
Pyrene	SW8270C	1	12.0	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Butylbenzylphthalate	SW8270C	1	21.0	720	ND		ug/Kg	05/22/23	0:42	MT	474888
Benzo(a)anthracene	SW8270C	1	9.80	144	ND		ug/Kg	05/22/23	0:42	MT	474888
3,3-Dichlorobenzidine	SW8270C	1	118	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Chrysene	SW8270C	1	15.2	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Bis(2-Ethylhexyl)phthalate	SW8270C	1	15.3	720	ND		ug/Kg	05/22/23	0:42	MT	474888
Di-n-Octylphthalate	SW8270C	1	12.3	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Benzo(b)fluorathene	SW8270C	1	12.0	144	ND		ug/Kg	05/22/23	0:42	MT	474888
benzo(k)fluorathene	SW8270C	1	8.16	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Benzo(a)pyrene	SW8270C	1	9.80	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Indeno(1,2,3-c,d)pyrene	SW8270C	1	13.8	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Dibenzo(a,h)anthracene	SW8270C	1	12.7	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Benzo(g,h,i)perylene	SW8270C	1	16.7	144	ND		ug/Kg	05/22/23	0:42	MT	474888
Pyridine	SW8270C	1	43.8	720	ND		ug/Kg	05/22/23	0:42	MT	474888
			Acceptance Limits								
2-Fluorophenol (S)	SW8270C		25 - 121		**61.4**		%	05/22/23	0:42	MT	474888
Phenol-d6 (S)	SW8270C		24 - 113		**62.9**		%	05/22/23	0:42	MT	474888
2,4,6-Tribromophenol (S)	SW8270C		19 - 122		**65.8**		%	05/22/23	0:42	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-10	**Lab Sample ID:**	2305067-002A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 8:06		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23	11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2-Fluorobiphenyl (S)	SW8270C		45 - 143		**61.7**		%	05/22/23	0:42	MT	474888
Nitrobenzene-d5 (S)	SW8270C		23 - 120		**59.3**		%	05/22/23	0:42	MT	474888
p-Terphenyl-d14 (S)	SW8270C		18 - 137		**82.3**		%	05/22/23	0:42	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-10	**Lab Sample ID:**	2305067-002A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 8:06		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/19/23 10:46:00AM
Prep Batch ID:	1151221	**Prep Analyst:**	HVYAS

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	1.2	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Chloromethane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Vinyl Chloride	SW8260B	1	2.0	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Bromomethane	SW8260B	1	2.7	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Chloroethane	SW8260B	1	3.0	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Trichlorofluoromethane	SW8260B	1	2.1	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,1-Dichloroethene	SW8260B	1	2.0	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Freon 113	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Methylene Chloride	SW8260B	1	7.1	10	ND		ug/Kg	05/19/23	19:11	HV	474928
trans-1,2-Dichloroethene	SW8260B	1	2.1	10	ND		ug/Kg	05/19/23	19:11	HV	474928
MTBE	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	19:11	HV	474928
TBA	SW8260B	1	12	50	ND		ug/Kg	05/19/23	19:11	HV	474928
Diisopropyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,1-Dichloroethane	SW8260B	1	2.2	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Ethyl tert-Butyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	19:11	HV	474928
cis-1,2-Dichloroethene	SW8260B	1	2.2	10	ND		ug/Kg	05/19/23	19:11	HV	474928
2,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Bromochloromethane	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Chloroform	SW8260B	1	2.4	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Carbon Tetrachloride	SW8260B	1	2.1	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,1,1-Trichloroethane	SW8260B	1	2.1	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,1-Dichloropropene	SW8260B	1	2.0	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Benzene	SW8260B	1	2.2	10	ND		ug/Kg	05/19/23	19:11	HV	474928
TAME	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,2-Dichloroethane	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Trichloroethene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Dibromomethane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Bromodichloromethane	SW8260B	1	2.0	10	ND		ug/Kg	05/19/23	19:11	HV	474928
cis-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Toluene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Tetrachloroethene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:11	HV	474928
trans-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,1,2-Trichloroethane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Dibromochloromethane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,3-Dichloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,2-Dibromoethane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Chlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Ethylbenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:11	HV	474928

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-10	**Lab Sample ID:**	2305067-002A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 8:06		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/19/23 10:46:00AM
Prep Batch ID:	1151221	**Prep Analyst:**	HVYAS

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	19:11	HV	474928
m,p-Xylene	SW8260B	1	3.2	10	ND		ug/Kg	05/19/23	19:11	HV	474928
o-Xylene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Styrene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Bromoform	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Isopropyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:11	HV	474928
n-Propylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Bromobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,1,2,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	19:11	HV	474928
2-Chlorotoluene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,3,5-Trimethylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,2,3-Trichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	19:11	HV	474928
4-Chlorotoluene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:11	HV	474928
tert-Butylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,2,4-Trimethylbenzene	SW8260B	1	1.4	10	ND		ug/Kg	05/19/23	19:11	HV	474928
sec-Butyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:11	HV	474928
p-Isopropyltoluene	SW8260B	1	1.5	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,3-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,4-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:11	HV	474928
n-Butylbenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,2-Dichlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,2-Dibromo-3-Chloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Hexachlorobutadiene	SW8260B	1	1.4	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,2,4-Trichlorobenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/19/23	19:11	HV	474928
Naphthalene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:11	HV	474928
1,2,3-Trichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:11	HV	474928
2-Butanone	SW8260B	1	2.3	10.0	ND		ug/Kg	05/19/23	19:11	HV	474928
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**69.6**		%	05/19/23	19:11	HV	474928
(S) Toluene-d8	SW8260B		55.2 - 133		**102**		%	05/19/23	19:11	HV	474928
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**103**		%	05/19/23	19:11	HV	474928

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-15	**Lab Sample ID:**	2305067-003A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 8:10		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	5:09	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-15	**Lab Sample ID:**	2305067-003A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 8:10		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/17/23 7:15:00PM
Prep Batch ID:	1151067	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/18/23	13:43	BJAY	474773

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-15	**Lab Sample ID:**	2305067-003A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 8:10		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/17/23 7:00:00PM
Prep Batch ID:	1151065	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:29	AT	474846
Arsenic	SW6010B	1	0.15	1.30	**2.79**		mg/Kg	05/18/23	20:29	AT	474846
Barium	SW6010B	1	0.055	5.00	**106**		mg/Kg	05/18/23	20:29	AT	474846
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/18/23	20:29	AT	474846
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/18/23	20:29	AT	474846
Chromium	SW6010B	1	0.075	5.00	**17.0**		mg/Kg	05/18/23	20:29	AT	474846
Cobalt	SW6010B	1	0.070	5.00	**10.1**		mg/Kg	05/18/23	20:29	AT	474846
Copper	SW6010B	1	0.20	5.00	**20.3**		mg/Kg	05/18/23	20:29	AT	474846
Lead	SW6010B	1	0.10	3.00	**3.93**		mg/Kg	05/18/23	20:29	AT	474846
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:29	AT	474846
Nickel	SW6010B	1	0.50	5.00	**11.0**		mg/Kg	05/18/23	20:29	AT	474846
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/18/23	20:29	AT	474846
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/18/23	20:29	AT	474846
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:29	AT	474846
Vanadium	SW6010B	1	0.10	5.00	**46.6**		mg/Kg	05/18/23	20:29	AT	474846
Zinc	SW6010B	1	0.30	5.00	**48.1**		mg/Kg	05/18/23	20:29	AT	474846

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-30	**Lab Sample ID:**	2305067-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 8:27		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
N-Nitrosodimethylamine	SW8270C	1	46.9	720	ND		ug/Kg	05/22/23	1:11	MT	474888
Phenol	SW8270C	1	43.8	288	ND		ug/Kg	05/22/23	1:11	MT	474888
Bis(2-chloroethyl)ether	SW8270C	1	13.3	144	ND		ug/Kg	05/22/23	1:11	MT	474888
2-Chlorophenol	SW8270C	1	47.7	288	ND		ug/Kg	05/22/23	1:11	MT	474888
1,3-Dichlorobenzene	SW8270C	1	13.1	144	ND		ug/Kg	05/22/23	1:11	MT	474888
1,4-Dichlorobenzene	SW8270C	1	14.6	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Benzyl Alcohol	SW8270C	1	20.5	288	ND		ug/Kg	05/22/23	1:11	MT	474888
1,2-Dichlorobenzene	SW8270C	1	13.5	144	ND		ug/Kg	05/22/23	1:11	MT	474888
2-Methylphenol (o-Cresol)	SW8270C	1	29.3	288	ND		ug/Kg	05/22/23	1:11	MT	474888
N-Methyl-2-Pyrrolidone (NMP)	SW8270C	1	68.0	720	ND		ug/Kg	05/22/23	1:11	MT	474888
3-/4-Methylphenol (p-/m-Cresol)	SW8270C	1	31.3	288	ND		ug/Kg	05/22/23	1:11	MT	474888
N-nitroso-di-n-propylamine	SW8270C	1	13.2	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Hexachloroethane	SW8270C	1	17.1	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Nitrobenzene	SW8270C	1	12.8	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Isophorone	SW8270C	1	12.2	144	ND		ug/Kg	05/22/23	1:11	MT	474888
2-Nitrophenol	SW8270C	1	25.4	288	ND		ug/Kg	05/22/23	1:11	MT	474888
2,4-Dimethylphenol	SW8270C	1	22.8	288	ND		ug/Kg	05/22/23	1:11	MT	474888
Benzoic Acid	SW8270C	1	41.7	288	ND		ug/Kg	05/22/23	1:11	MT	474888
Bis(2-Chloroethoxy)methane	SW8270C	1	9.79	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Bis(2-chloroisopropyl)ether	SW8270C	1	12.6	144	ND		ug/Kg	05/22/23	1:11	MT	474888
2,4-Dichlorophenol	SW8270C	1	39.3	288	ND		ug/Kg	05/22/23	1:11	MT	474888
1,2,4-Trichlorobenzene	SW8270C	1	11.8	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Naphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/22/23	1:11	MT	474888
2,6-Dichlorophenol	SW8270C	1	35.8	288	ND		ug/Kg	05/22/23	1:11	MT	474888
Hexachloro-1,3-butadiene	SW8270C	1	8.34	144	ND		ug/Kg	05/22/23	1:11	MT	474888
4-Chloro-3-methylphenol	SW8270C	1	33.8	288	ND		ug/Kg	05/22/23	1:11	MT	474888
2-Methylnaphthalene	SW8270C	1	10.4	144	ND		ug/Kg	05/22/23	1:11	MT	474888
1-Methylnaphthalene	SW8270C	1	12.2	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Hexachlorocyclopentadiene	SW8270C	1	12.9	144	ND		ug/Kg	05/22/23	1:11	MT	474888
2,4,6-Trichlorophenol	SW8270C	1	35.9	288	ND		ug/Kg	05/22/23	1:11	MT	474888
2,4,5-Trichlorophenol	SW8270C	1	33.4	288	ND		ug/Kg	05/22/23	1:11	MT	474888
2-Chloronaphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/22/23	1:11	MT	474888
1,4-Dinitrobenzene	SW8270C	1	10.3	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Dimethyl phthalate	SW8270C	1	14.2	720	ND		ug/Kg	05/22/23	1:11	MT	474888
1,3-Dinitrobenzene	SW8270C	1	10.4	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Acenaphthylene	SW8270C	1	8.28	144	ND		ug/Kg	05/22/23	1:11	MT	474888
2,6-Dinitrotoluene	SW8270C	1	11.3	144	ND		ug/Kg	05/22/23	1:11	MT	474888
1,2-Dinitrobenzene	SW8270C	1	15.8	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Acenaphthene	SW8270C	1	10.7	144	ND		ug/Kg	05/22/23	1:11	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-30	**Lab Sample ID:**	2305067-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 8:27		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2,4-Dinitrophenol	SW8270C	1	77.6	720	ND		ug/Kg	05/22/23	1:11	MT	474888
4-Nitrophenol	SW8270C	1	54.7	720	ND		ug/Kg	05/22/23	1:11	MT	474888
Dibenzofuran	SW8270C	1	11.2	144	ND		ug/Kg	05/22/23	1:11	MT	474888
2,4-Dinitrotoluene	SW8270C	1	12.1	144	ND		ug/Kg	05/22/23	1:11	MT	474888
2,3,5,6-Tetrachlorophenol	SW8270C	1	27.6	288	ND		ug/Kg	05/22/23	1:11	MT	474888
2,3,4,6-Tetrachlorophenol	SW8270C	1	31.5	288	ND		ug/Kg	05/22/23	1:11	MT	474888
Diethylphthalate	SW8270C	1	13.6	720	ND		ug/Kg	05/22/23	1:11	MT	474888
Fluorene	SW8270C	1	10.3	144	ND		ug/Kg	05/22/23	1:11	MT	474888
4-Chlorophenyl-phenylether	SW8270C	1	9.32	144	ND		ug/Kg	05/22/23	1:11	MT	474888
4,6-Dinitro-2-methylphenol	SW8270C	1	13.4	288	ND		ug/Kg	05/22/23	1:11	MT	474888
Diphenylamine	SW8270C	1	13.0	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Azobenzene	SW8270C	1	114	144	ND		ug/Kg	05/22/23	1:11	MT	474888
4-Bromophenyl-phenylether	SW8270C	1	8.23	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Hexachlorobenzene	SW8270C	1	8.66	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Pentachlorophenol	SW8270C	1	25.0	288	ND		ug/Kg	05/22/23	1:11	MT	474888
Phenanthrene	SW8270C	1	9.32	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Anthracene	SW8270C	1	8.91	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Carbazole	SW8270C	1	10.7	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Di-n-butylphthalate	SW8270C	1	13.5	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Fluoranthene	SW8270C	1	10.0	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Benzidine	SW8270C	1	147	147	ND		ug/Kg	05/22/23	1:11	MT	474888
Pyrene	SW8270C	1	12.0	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Butylbenzylphthalate	SW8270C	1	21.0	720	ND		ug/Kg	05/22/23	1:11	MT	474888
Benzo(a)anthracene	SW8270C	1	9.80	144	ND		ug/Kg	05/22/23	1:11	MT	474888
3,3-Dichlorobenzidine	SW8270C	1	118	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Chrysene	SW8270C	1	15.2	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Bis(2-Ethylhexyl)phthalate	SW8270C	1	15.3	720	ND		ug/Kg	05/22/23	1:11	MT	474888
Di-n-Octylphthalate	SW8270C	1	12.3	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Benzo(b)fluorathene	SW8270C	1	12.0	144	ND		ug/Kg	05/22/23	1:11	MT	474888
benzo(k)fluorathene	SW8270C	1	8.16	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Benzo(a)pyrene	SW8270C	1	9.80	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Indeno(1,2,3-c,d)pyrene	SW8270C	1	13.8	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Dibenzo(a,h)anthracene	SW8270C	1	12.7	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Benzo(g,h,i)perylene	SW8270C	1	16.7	144	ND		ug/Kg	05/22/23	1:11	MT	474888
Pyridine	SW8270C	1	43.8	720	ND		ug/Kg	05/22/23	1:11	MT	474888
			Acceptance Limits								
2-Fluorophenol (S)	SW8270C		25 - 121		**57.3**		%	05/22/23	1:11	MT	474888
Phenol-d6 (S)	SW8270C		24 - 113		**62.0**		%	05/22/23	1:11	MT	474888
2,4,6-Tribromophenol (S)	SW8270C		19 - 122		**51.3**		%	05/22/23	1:11	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-30	**Lab Sample ID:**	2305067-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 8:27		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23	11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2-Fluorobiphenyl (S)	SW8270C		45 - 143		**72.1**		%	05/22/23	1:11	MT	474888
Nitrobenzene-d5 (S)	SW8270C		23 - 120		**67.5**		%	05/22/23	1:11	MT	474888
p-Terphenyl-d14 (S)	SW8270C		18 - 137		**85.2**		%	05/22/23	1:11	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-30	**Lab Sample ID:**	2305067-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 8:27		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/19/23 10:46:00AM
Prep Batch ID:	1151221	**Prep Analyst:**	HVYAS

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	1.2	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Chloromethane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Vinyl Chloride	SW8260B	1	2.0	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Bromomethane	SW8260B	1	2.7	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Chloroethane	SW8260B	1	3.0	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Trichlorofluoromethane	SW8260B	1	2.1	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,1-Dichloroethene	SW8260B	1	2.0	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Freon 113	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Methylene Chloride	SW8260B	1	7.1	10	ND		ug/Kg	05/19/23	19:40	HV	474928
trans-1,2-Dichloroethene	SW8260B	1	2.1	10	ND		ug/Kg	05/19/23	19:40	HV	474928
MTBE	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	19:40	HV	474928
TBA	SW8260B	1	12	50	ND		ug/Kg	05/19/23	19:40	HV	474928
Diisopropyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,1-Dichloroethane	SW8260B	1	2.2	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Ethyl tert-Butyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	19:40	HV	474928
cis-1,2-Dichloroethene	SW8260B	1	2.2	10	ND		ug/Kg	05/19/23	19:40	HV	474928
2,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Bromochloromethane	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Chloroform	SW8260B	1	2.4	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Carbon Tetrachloride	SW8260B	1	2.1	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,1,1-Trichloroethane	SW8260B	1	2.1	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,1-Dichloropropene	SW8260B	1	2.0	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Benzene	SW8260B	1	2.2	10	ND		ug/Kg	05/19/23	19:40	HV	474928
TAME	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,2-Dichloroethane	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Trichloroethene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Dibromomethane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Bromodichloromethane	SW8260B	1	2.0	10	ND		ug/Kg	05/19/23	19:40	HV	474928
cis-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Toluene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Tetrachloroethene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:40	HV	474928
trans-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,1,2-Trichloroethane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Dibromochloromethane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,3-Dichloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,2-Dibromoethane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Chlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Ethylbenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:40	HV	474928

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-3-30	**Lab Sample ID:**	2305067-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 8:27		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/19/23 10:46:00AM
Prep Batch ID:	1151221	**Prep Analyst:**	HVYAS

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	19:40	HV	474928
m,p-Xylene	SW8260B	1	3.2	10	ND		ug/Kg	05/19/23	19:40	HV	474928
o-Xylene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Styrene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Bromoform	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Isopropyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:40	HV	474928
n-Propylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Bromobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,1,2,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	19:40	HV	474928
2-Chlorotoluene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,3,5-Trimethylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,2,3-Trichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	19:40	HV	474928
4-Chlorotoluene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:40	HV	474928
tert-Butylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,2,4-Trimethylbenzene	SW8260B	1	1.4	10	ND		ug/Kg	05/19/23	19:40	HV	474928
sec-Butyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	19:40	HV	474928
p-Isopropyltoluene	SW8260B	1	1.5	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,3-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,4-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:40	HV	474928
n-Butylbenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,2-Dichlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,2-Dibromo-3-Chloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Hexachlorobutadiene	SW8260B	1	1.4	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,2,4-Trichlorobenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/19/23	19:40	HV	474928
Naphthalene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:40	HV	474928
1,2,3-Trichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	19:40	HV	474928
2-Butanone	SW8260B	1	2.3	10.0	ND		ug/Kg	05/19/23	19:40	HV	474928
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**70.0**		%	05/19/23	19:40	HV	474928
(S) Toluene-d8	SW8260B		55.2 - 133		**104**		%	05/19/23	19:40	HV	474928
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**103**		%	05/19/23	19:40	HV	474928

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-8-5	**Lab Sample ID:**	2305067-007A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 9:40		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151158	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	12:16	PH	474858

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-8-5	**Lab Sample ID:**	2305067-007A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 9:40		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/15/23	5:45:00PM
Prep Batch ID:	1150976	**Prep Analyst:**	AJNG	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/16/23	13:52	ERR	474697

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-8-5	**Lab Sample ID:**	2305067-007A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 9:40		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/15/23 5:15:00PM
Prep Batch ID:	1150962	**Prep Analyst:**	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	20:59	AT	474699
Arsenic	SW6010B	1	0.15	1.30	**1.54**		mg/Kg	05/15/23	20:59	AT	474699
Barium	SW6010B	1	0.055	5.00	**82.0**		mg/Kg	05/15/23	20:59	AT	474699
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/15/23	20:59	AT	474699
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/15/23	20:59	AT	474699
Chromium	SW6010B	1	0.075	5.00	**12.2**		mg/Kg	05/15/23	20:59	AT	474699
Cobalt	SW6010B	1	0.070	5.00	**7.60**		mg/Kg	05/15/23	20:59	AT	474699
Copper	SW6010B	1	0.20	5.00	**9.50**		mg/Kg	05/15/23	20:59	AT	474699
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/15/23	20:59	AT	474699
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	20:59	AT	474699
Nickel	SW6010B	1	0.50	5.00	**6.75**		mg/Kg	05/15/23	20:59	AT	474699
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/15/23	20:59	AT	474699
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/15/23	20:59	AT	474699
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/15/23	20:59	AT	474699
Vanadium	SW6010B	1	0.10	5.00	**38.7**		mg/Kg	05/15/23	20:59	AT	474699
Zinc	SW6010B	1	0.30	5.00	**37.9**		mg/Kg	05/15/23	20:59	AT	474699

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-8-5	**Lab Sample ID:**	2305067-007A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 9:40		
SDG:			

Prep Method:	3546_OCP	**Prep Batch Date/Time:**	5/13/23 10:20:00AM
Prep Batch ID:	1150929	**Prep Analyst:**	NDUM

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
alpha-BHC	SW8081B	1	0.25	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
gamma-BHC (Lindane)	SW8081B	1	0.71	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
beta-BHC	SW8081B	1	0.44	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
delta-BHC	SW8081B	1	0.65	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
Heptachlor	SW8081B	1	0.27	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
Aldrin	SW8081B	1	0.29	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
Heptachlor Epoxide	SW8081B	1	0.31	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
gamma-Chlordane	SW8081B	1	1.5	3.0	ND		ug/Kg	05/13/23	16:42	LA	474648
alpha-Chlordane	SW8081B	1	0.36	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
4,4'-DDE	SW8081B	1	0.61	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
Endosulfan I	SW8081B	1	0.29	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
Dieldrin	SW8081B	1	0.25	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
Endrin	SW8081B	1	0.79	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
4,4'-DDD	SW8081B	1	0.64	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
Endosulfan II	SW8081B	1	0.34	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
4,4'-DDT	SW8081B	1	0.74	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
Endrin Aldehyde	SW8081B	1	0.51	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
Methoxychlor	SW8081B	1	2.6	6.0	ND		ug/Kg	05/13/23	16:42	LA	474648
Endosulfan Sulfate	SW8081B	1	0.51	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
Endrin Ketone	SW8081B	1	0.43	2.0	ND		ug/Kg	05/13/23	16:42	LA	474648
Chlordane, Technical	SW8081B	1	2.7	20	ND		ug/Kg	05/13/23	16:42	LA	474648
Toxaphene	SW8081B	1	22	50	ND		ug/Kg	05/13/23	16:42	LA	474648
			Acceptance Limits								
Tetrachloro-M-Xylene (S)	SW8081B		48 - 125		**50.2**		%	05/13/23	16:42	LA	474648
Decachlorobiphenyl (S)	SW8081B		38 - 135		**52.0**		%	05/13/23	16:42	LA	474648

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-8-15	**Lab Sample ID:**	2305067-009A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 9:49		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	5:30	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-8-15	**Lab Sample ID:**	2305067-009A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 9:49		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/17/23 7:15:00PM
Prep Batch ID:	1151067	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/18/23	13:45	BJAY	474773

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-8-15	**Lab Sample ID:**	2305067-009A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 9:49		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/17/23 7:00:00PM
Prep Batch ID:	1151065	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:31	AT	474846
Arsenic	SW6010B	1	0.15	1.30	ND		mg/Kg	05/18/23	20:31	AT	474846
Barium	SW6010B	1	0.055	5.00	**60.5**		mg/Kg	05/18/23	20:31	AT	474846
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/18/23	20:31	AT	474846
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/18/23	20:31	AT	474846
Chromium	SW6010B	1	0.075	5.00	**9.00**		mg/Kg	05/18/23	20:31	AT	474846
Cobalt	SW6010B	1	0.070	5.00	**5.90**		mg/Kg	05/18/23	20:31	AT	474846
Copper	SW6010B	1	0.20	5.00	**7.00**		mg/Kg	05/18/23	20:31	AT	474846
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/18/23	20:31	AT	474846
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:31	AT	474846
Nickel	SW6010B	1	0.50	5.00	ND		mg/Kg	05/18/23	20:31	AT	474846
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/18/23	20:31	AT	474846
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/18/23	20:31	AT	474846
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:31	AT	474846
Vanadium	SW6010B	1	0.10	5.00	**34.0**		mg/Kg	05/18/23	20:31	AT	474846
Zinc	SW6010B	1	0.30	5.00	**26.7**		mg/Kg	05/18/23	20:31	AT	474846

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-8-30	**Lab Sample ID:**	2305067-012A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 10:12		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
N-Nitrosodimethylamine	SW8270C	1	46.9	720	ND		ug/Kg	05/22/23	1:41	MT	474888
Phenol	SW8270C	1	43.8	288	ND		ug/Kg	05/22/23	1:41	MT	474888
Bis(2-chloroethyl)ether	SW8270C	1	13.3	144	ND		ug/Kg	05/22/23	1:41	MT	474888
2-Chlorophenol	SW8270C	1	47.7	288	ND		ug/Kg	05/22/23	1:41	MT	474888
1,3-Dichlorobenzene	SW8270C	1	13.1	144	ND		ug/Kg	05/22/23	1:41	MT	474888
1,4-Dichlorobenzene	SW8270C	1	14.6	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Benzyl Alcohol	SW8270C	1	20.5	288	ND		ug/Kg	05/22/23	1:41	MT	474888
1,2-Dichlorobenzene	SW8270C	1	13.5	144	ND		ug/Kg	05/22/23	1:41	MT	474888
2-Methylphenol (o-Cresol)	SW8270C	1	29.3	288	ND		ug/Kg	05/22/23	1:41	MT	474888
N-Methyl-2-Pyrrolidone (NMP)	SW8270C	1	68.0	720	ND		ug/Kg	05/22/23	1:41	MT	474888
3-/4-Methylphenol (p-/m-Cresol)	SW8270C	1	31.3	288	ND		ug/Kg	05/22/23	1:41	MT	474888
N-nitroso-di-n-propylamine	SW8270C	1	13.2	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Hexachloroethane	SW8270C	1	17.1	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Nitrobenzene	SW8270C	1	12.8	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Isophorone	SW8270C	1	12.2	144	ND		ug/Kg	05/22/23	1:41	MT	474888
2-Nitrophenol	SW8270C	1	25.4	288	ND		ug/Kg	05/22/23	1:41	MT	474888
2,4-Dimethylphenol	SW8270C	1	22.8	288	ND		ug/Kg	05/22/23	1:41	MT	474888
Benzoic Acid	SW8270C	1	41.7	288	ND		ug/Kg	05/22/23	1:41	MT	474888
Bis(2-Chloroethoxy)methane	SW8270C	1	9.79	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Bis(2-chloroisopropyl)ether	SW8270C	1	12.6	144	ND		ug/Kg	05/22/23	1:41	MT	474888
2,4-Dichlorophenol	SW8270C	1	39.3	288	ND		ug/Kg	05/22/23	1:41	MT	474888
1,2,4-Trichlorobenzene	SW8270C	1	11.8	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Naphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/22/23	1:41	MT	474888
2,6-Dichlorophenol	SW8270C	1	35.8	288	ND		ug/Kg	05/22/23	1:41	MT	474888
Hexachloro-1,3-butadiene	SW8270C	1	8.34	144	ND		ug/Kg	05/22/23	1:41	MT	474888
4-Chloro-3-methylphenol	SW8270C	1	33.8	288	ND		ug/Kg	05/22/23	1:41	MT	474888
2-Methylnaphthalene	SW8270C	1	10.4	144	ND		ug/Kg	05/22/23	1:41	MT	474888
1-Methylnaphthalene	SW8270C	1	12.2	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Hexachlorocyclopentadiene	SW8270C	1	12.9	144	ND		ug/Kg	05/22/23	1:41	MT	474888
2,4,6-Trichlorophenol	SW8270C	1	35.9	288	ND		ug/Kg	05/22/23	1:41	MT	474888
2,4,5-Trichlorophenol	SW8270C	1	33.4	288	ND		ug/Kg	05/22/23	1:41	MT	474888
2-Chloronaphthalene	SW8270C	1	10.6	144	ND		ug/Kg	05/22/23	1:41	MT	474888
1,4-Dinitrobenzene	SW8270C	1	10.3	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Dimethyl phthalate	SW8270C	1	14.2	720	ND		ug/Kg	05/22/23	1:41	MT	474888
1,3-Dinitrobenzene	SW8270C	1	10.4	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Acenaphthylene	SW8270C	1	8.28	144	ND		ug/Kg	05/22/23	1:41	MT	474888
2,6-Dinitrotoluene	SW8270C	1	11.3	144	ND		ug/Kg	05/22/23	1:41	MT	474888
1,2-Dinitrobenzene	SW8270C	1	15.8	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Acenaphthene	SW8270C	1	10.7	144	ND		ug/Kg	05/22/23	1:41	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-8-30	**Lab Sample ID:**	2305067-012A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 10:12		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23 11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2,4-Dinitrophenol	SW8270C	1	77.6	720	ND		ug/Kg	05/22/23	1:41	MT	474888
4-Nitrophenol	SW8270C	1	54.7	720	ND		ug/Kg	05/22/23	1:41	MT	474888
Dibenzofuran	SW8270C	1	11.2	144	ND		ug/Kg	05/22/23	1:41	MT	474888
2,4-Dinitrotoluene	SW8270C	1	12.1	144	ND		ug/Kg	05/22/23	1:41	MT	474888
2,3,5,6-Tetrachlorophenol	SW8270C	1	27.6	288	ND		ug/Kg	05/22/23	1:41	MT	474888
2,3,4,6-Tetrachlorophenol	SW8270C	1	31.5	288	ND		ug/Kg	05/22/23	1:41	MT	474888
Diethylphthalate	SW8270C	1	13.6	720	ND		ug/Kg	05/22/23	1:41	MT	474888
Fluorene	SW8270C	1	10.3	144	ND		ug/Kg	05/22/23	1:41	MT	474888
4-Chlorophenyl-phenylether	SW8270C	1	9.32	144	ND		ug/Kg	05/22/23	1:41	MT	474888
4,6-Dinitro-2-methylphenol	SW8270C	1	13.4	288	ND		ug/Kg	05/22/23	1:41	MT	474888
Diphenylamine	SW8270C	1	13.0	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Azobenzene	SW8270C	1	114	144	ND		ug/Kg	05/22/23	1:41	MT	474888
4-Bromophenyl-phenylether	SW8270C	1	8.23	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Hexachlorobenzene	SW8270C	1	8.66	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Pentachlorophenol	SW8270C	1	25.0	288	ND		ug/Kg	05/22/23	1:41	MT	474888
Phenanthrene	SW8270C	1	9.32	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Anthracene	SW8270C	1	8.91	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Carbazole	SW8270C	1	10.7	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Di-n-butylphthalate	SW8270C	1	13.5	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Fluoranthene	SW8270C	1	10.0	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Benzidine	SW8270C	1	147	147	ND		ug/Kg	05/22/23	1:41	MT	474888
Pyrene	SW8270C	1	12.0	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Butylbenzylphthalate	SW8270C	1	21.0	720	ND		ug/Kg	05/22/23	1:41	MT	474888
Benzo(a)anthracene	SW8270C	1	9.80	144	ND		ug/Kg	05/22/23	1:41	MT	474888
3,3-Dichlorobenzidine	SW8270C	1	118	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Chrysene	SW8270C	1	15.2	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Bis(2-Ethylhexyl)phthalate	SW8270C	1	15.3	720	ND		ug/Kg	05/22/23	1:41	MT	474888
Di-n-Octylphthalate	SW8270C	1	12.3	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Benzo(b)fluorathene	SW8270C	1	12.0	144	ND		ug/Kg	05/22/23	1:41	MT	474888
benzo(k)fluorathene	SW8270C	1	8.16	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Benzo(a)pyrene	SW8270C	1	9.80	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Indeno(1,2,3-c,d)pyrene	SW8270C	1	13.8	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Dibenzo(a,h)anthracene	SW8270C	1	12.7	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Benzo(g,h,i)perylene	SW8270C	1	16.7	144	ND		ug/Kg	05/22/23	1:41	MT	474888
Pyridine	SW8270C	1	43.8	720	ND		ug/Kg	05/22/23	1:41	MT	474888
			Acceptance Limits								
2-Fluorophenol (S)	SW8270C		25 - 121		**41.7**		%	05/22/23	1:41	MT	474888
Phenol-d6 (S)	SW8270C		24 - 113		**63.6**		%	05/22/23	1:41	MT	474888
2,4,6-Tribromophenol (S)	SW8270C		19 - 122		**77.2**		%	05/22/23	1:41	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-8-30	**Lab Sample ID:**	2305067-012A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 10:12		
SDG:			

Prep Method:	3546_BNA	**Prep Batch Date/Time:**	5/19/23	11:52:00AM
Prep Batch ID:	1151137	**Prep Analyst:**	MSAT	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
2-Fluorobiphenyl (S)	SW8270C		45 - 143		**88.3**		%	05/22/23	1:41	MT	474888
Nitrobenzene-d5 (S)	SW8270C		23 - 120		**68.9**		%	05/22/23	1:41	MT	474888
p-Terphenyl-d14 (S)	SW8270C		18 - 137		**90.6**		%	05/22/23	1:41	MT	474888

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-8-30	**Lab Sample ID:**	2305067-012A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 10:12		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/19/23 10:46:00AM
Prep Batch ID:	1151221	**Prep Analyst:**	HVYAS

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Dichlorodifluoromethane	SW8260B	1	1.2	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Chloromethane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Vinyl Chloride	SW8260B	1	2.0	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Bromomethane	SW8260B	1	2.7	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Chloroethane	SW8260B	1	3.0	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Trichlorofluoromethane	SW8260B	1	2.1	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,1-Dichloroethene	SW8260B	1	2.0	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Freon 113	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Methylene Chloride	SW8260B	1	7.1	10	ND		ug/Kg	05/19/23	20:09	HV	474928
trans-1,2-Dichloroethene	SW8260B	1	2.1	10	ND		ug/Kg	05/19/23	20:09	HV	474928
MTBE	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	20:09	HV	474928
TBA	SW8260B	1	12	50	ND		ug/Kg	05/19/23	20:09	HV	474928
Diisopropyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,1-Dichloroethane	SW8260B	1	2.2	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Ethyl tert-Butyl ether	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	20:09	HV	474928
cis-1,2-Dichloroethene	SW8260B	1	2.2	10	ND		ug/Kg	05/19/23	20:09	HV	474928
2,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Bromochloromethane	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Chloroform	SW8260B	1	2.4	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Carbon Tetrachloride	SW8260B	1	2.1	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,1,1-Trichloroethane	SW8260B	1	2.1	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,1-Dichloropropene	SW8260B	1	2.0	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Benzene	SW8260B	1	2.2	10	ND		ug/Kg	05/19/23	20:09	HV	474928
TAME	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,2-Dichloroethane	SW8260B	1	2.3	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Trichloroethene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Dibromomethane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,2-Dichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Bromodichloromethane	SW8260B	1	2.0	10	ND		ug/Kg	05/19/23	20:09	HV	474928
cis-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Toluene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Tetrachloroethene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	20:09	HV	474928
trans-1,3-Dichloropropene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,1,2-Trichloroethane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Dibromochloromethane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,3-Dichloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,2-Dibromoethane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Chlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Ethylbenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	20:09	HV	474928

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-8-30	**Lab Sample ID:**	2305067-012A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 10:12		
SDG:			

Prep Method:	5035	**Prep Batch Date/Time:**	5/19/23 10:46:00AM
Prep Batch ID:	1151221	**Prep Analyst:**	HVYAS

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
1,1,1,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	20:09	HV	474928
m,p-Xylene	SW8260B	1	3.2	10	ND		ug/Kg	05/19/23	20:09	HV	474928
o-Xylene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Styrene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Bromoform	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Isopropyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	20:09	HV	474928
n-Propylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Bromobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,1,2,2-Tetrachloroethane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	20:09	HV	474928
2-Chlorotoluene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,3,5-Trimethylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,2,3-Trichloropropane	SW8260B	1	1.9	10	ND		ug/Kg	05/19/23	20:09	HV	474928
4-Chlorotoluene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	20:09	HV	474928
tert-Butylbenzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,2,4-Trimethylbenzene	SW8260B	1	1.4	10	ND		ug/Kg	05/19/23	20:09	HV	474928
sec-Butyl Benzene	SW8260B	1	1.6	10	ND		ug/Kg	05/19/23	20:09	HV	474928
p-Isopropyltoluene	SW8260B	1	1.5	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,3-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,4-Dichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	20:09	HV	474928
n-Butylbenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,2-Dichlorobenzene	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,2-Dibromo-3-Chloropropane	SW8260B	1	1.8	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Hexachlorobutadiene	SW8260B	1	1.4	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,2,4-Trichlorobenzene	SW8260B	1	1.5	10	ND		ug/Kg	05/19/23	20:09	HV	474928
Naphthalene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	20:09	HV	474928
1,2,3-Trichlorobenzene	SW8260B	1	1.7	10	ND		ug/Kg	05/19/23	20:09	HV	474928
2-Butanone	SW8260B	1	2.3	10.0	ND		ug/Kg	05/19/23	20:09	HV	474928
(S) Dibromofluoromethane	SW8260B		59.8 - 148		**69.3**		%	05/19/23	20:09	HV	474928
(S) Toluene-d8	SW8260B		55.2 - 133		**103**		%	05/19/23	20:09	HV	474928
(S) 4-Bromofluorobenzene	SW8260B		55.8 - 141		**102**		%	05/19/23	20:09	HV	474928

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-9-5	**Lab Sample ID:**	2305067-013A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 12:30		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	6:34	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-9-5	**Lab Sample ID:**	2305067-013A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 12:30		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/15/23	5:45:00PM
Prep Batch ID:	1150976	**Prep Analyst:**	AJNG	

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/16/23	13:54	ERR	474697

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-9-5	**Lab Sample ID:**	2305067-013A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 12:30		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/15/23 5:15:00PM
Prep Batch ID:	1150962	**Prep Analyst:**	AJNG

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	21:01	AT	474699
Arsenic	SW6010B	1	0.15	1.30	**3.22**		mg/Kg	05/15/23	21:01	AT	474699
Barium	SW6010B	1	0.055	5.00	**127**		mg/Kg	05/15/23	21:01	AT	474699
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/15/23	21:01	AT	474699
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/15/23	21:01	AT	474699
Chromium	SW6010B	1	0.075	5.00	**39.8**		mg/Kg	05/15/23	21:01	AT	474699
Cobalt	SW6010B	1	0.070	5.00	**11.0**		mg/Kg	05/15/23	21:01	AT	474699
Copper	SW6010B	1	0.20	5.00	**43.7**		mg/Kg	05/15/23	21:01	AT	474699
Lead	SW6010B	1	0.10	3.00	**36.2**		mg/Kg	05/15/23	21:01	AT	474699
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/15/23	21:01	AT	474699
Nickel	SW6010B	1	0.50	5.00	**46.6**		mg/Kg	05/15/23	21:01	AT	474699
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/15/23	21:01	AT	474699
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/15/23	21:01	AT	474699
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/15/23	21:01	AT	474699
Vanadium	SW6010B	1	0.10	5.00	**48.4**		mg/Kg	05/15/23	21:01	AT	474699
Zinc	SW6010B	1	0.30	5.00	**80.5**		mg/Kg	05/15/23	21:01	AT	474699

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-9-15	**Lab Sample ID:**	2305067-015A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 12:40		
SDG:			

Prep Method:	7199MP	**Prep Batch Date/Time:**	5/18/23 2:00:00PM
Prep Batch ID:	1151157	**Prep Analyst:**	PHUFANO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Hexavalent Chromium	SW7199	1	3.1	10	ND		ug/Kg	05/19/23	6:56	PH	474857

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-9-15	**Lab Sample ID:**	2305067-015A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 12:40		
SDG:			

Prep Method:	7471BP	**Prep Batch Date/Time:**	5/17/23 7:15:00PM
Prep Batch ID:	1151067	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Mercury	SW7471B	1	0.083	0.50	ND		mg/Kg	05/18/23	13:52	BJAY	474773

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/09/23, 10:06 am
Date Reported: 05/19/23

Client Sample ID:	B-9-15	**Lab Sample ID:**	2305067-015A
Project Name/Location:	VERNON	**Sample Matrix:**	Soil
Project Number:	721040501		
Date/Time Sampled:	05/05/23 / 12:40		
SDG:			

Prep Method:	3050B	**Prep Batch Date/Time:**	5/17/23 7:00:00PM
Prep Batch ID:	1151065	**Prep Analyst:**	TNGO

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Antimony	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:32	AT	474846
Arsenic	SW6010B	1	0.15	1.30	ND		mg/Kg	05/18/23	20:32	AT	474846
Barium	SW6010B	1	0.055	5.00	**51.5**		mg/Kg	05/18/23	20:32	AT	474846
Beryllium	SW6010B	1	0.055	5.00	ND		mg/Kg	05/18/23	20:32	AT	474846
Cadmium	SW6010B	1	0.10	0.750	ND		mg/Kg	05/18/23	20:32	AT	474846
Chromium	SW6010B	1	0.075	5.00	**7.05**		mg/Kg	05/18/23	20:32	AT	474846
Cobalt	SW6010B	1	0.070	5.00	ND		mg/Kg	05/18/23	20:32	AT	474846
Copper	SW6010B	1	0.20	5.00	**6.05**		mg/Kg	05/18/23	20:32	AT	474846
Lead	SW6010B	1	0.10	3.00	ND		mg/Kg	05/18/23	20:32	AT	474846
Molybdenum	SW6010B	1	0.050	5.00	ND		mg/Kg	05/18/23	20:32	AT	474846
Nickel	SW6010B	1	0.50	5.00	ND		mg/Kg	05/18/23	20:32	AT	474846
Selenium	SW6010B	1	0.35	1.10	ND		mg/Kg	05/18/23	20:32	AT	474846
Silver	SW6010B	1	0.15	0.500	ND		mg/Kg	05/18/23	20:32	AT	474846
Thallium	SW6010B	1	0.20	5.00	ND		mg/Kg	05/18/23	20:32	AT	474846
Vanadium	SW6010B	1	0.10	5.00	**27.5**		mg/Kg	05/18/23	20:32	AT	474846
Zinc	SW6010B	1	0.30	5.00	**21.7**		mg/Kg	05/18/23	20:32	AT	474846

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305067	**Prep Method:**	3546_OCP	**Prep Date:**	05/13/23	**Prep Batch:**	1150929
Matrix:	Soil	**Analytical Method:**	SW8081B	**Analyzed Date:**	5/13/2023	**Analytical Batch:**	474648
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
alpha-BHC	0.25	2.0	ND	
gamma-BHC (Lindane)	0.71	2.0	ND	
beta-BHC	0.44	2.0	ND	
delta-BHC	0.65	2.0	ND	
Heptachlor	0.27	2.0	ND	
Aldrin	0.29	2.0	ND	
Heptachlor Epoxide	0.31	2.0	ND	
gamma-Chlordane	1.5	3.0	ND	
alpha-Chlordane	0.36	2.0	ND	
4,4'-DDE	0.61	2.0	1.97	
Endosulfan I	0.29	2.0	ND	
Dieldrin	0.25	2.0	ND	
Endrin	0.79	2.0	ND	
4,4'-DDD	0.64	2.0	ND	
Endosulfan II	0.34	2.0	ND	
4,4'-DDT	0.74	2.0	ND	
Endrin Aldehyde	0.51	2.0	ND	
Methoxychlor	2.6	6.0	ND	
Endosulfan Sulfate	0.51	2.0	ND	
Endrin Ketone	0.43	2.0	ND	
Chlordane, Technical	2.7	20	ND	
Toxaphene	22	50	ND	
Tetrachloro-M-Xylene (S)			89.6	
Decachlorobiphenyl (S)			92.9	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305067	**Prep Method:**	3050B	**Prep Date:**	05/15/23	**Prep Batch:**	1150962
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/15/2023	**Analytical Batch:**	474699
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Antimony	0.050	5.00	ND	
Arsenic	0.15	1.30	ND	
Barium	0.055	5.00	0.14	J
Beryllium	0.055	5.00	ND	
Cadmium	0.10	0.750	ND	
Chromium	0.075	5.00	0.13	J
Cobalt	0.070	5.00	ND	
Copper	0.20	5.00	ND	
Lead	0.10	3.00	ND	
Molybdenum	0.050	5.00	0.050	
Nickel	0.50	5.00	ND	
Selenium	0.35	1.10	ND	
Silver	0.15	0.500	ND	
Thallium	0.55	5.00	ND	
Vanadium	0.10	5.00	ND	
Zinc	0.30	5.00	3.2	J

Work Order:	2305067	**Prep Method:**	7471BP	**Prep Date:**	05/15/23	**Prep Batch:**	1150976
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/16/2023	**Analytical Batch:**	474697
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Mercury	0.083	0.50	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305067	**Prep Method:**	3050B	**Prep Date:**	05/17/23	**Prep Batch:**	1151065
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474846
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Antimony	0.050	5.00	0.065	
Arsenic	0.15	1.30	ND	
Barium	0.055	5.00	0.19	
Beryllium	0.055	5.00	ND	
Cadmium	0.10	0.750	ND	
Chromium	0.075	5.00	0.16	
Cobalt	0.070	5.00	ND	
Copper	0.20	5.00	ND	
Lead	0.10	3.00	ND	
Molybdenum	0.050	5.00	0.15	
Nickel	0.50	5.00	ND	
Selenium	0.35	1.10	ND	
Silver	0.15	0.500	ND	
Thallium	0.55	5.00	ND	
Vanadium	0.10	5.00	ND	
Zinc	0.30	5.00	ND	

Work Order:	2305067	**Prep Method:**	7471BP	**Prep Date:**	05/17/23	**Prep Batch:**	1151067
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474773
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Mercury	0.083	0.50	ND	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305067	**Prep Method:**	3546_BNA	**Prep Date:**	05/19/23	**Prep Batch:**	1151137
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474887
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
N-Nitrosodimethylamine	46.9	720	ND		
Phenol	43.8	288	ND		
Bis(2-chloroethyl)ether	13.3	144	ND		
2-Chlorophenol	47.7	288	ND		
1,3-Dichlorobenzene	13.1	144	ND		
1,4-Dichlorobenzene	14.6	144	ND		
Benzyl Alcohol	20.5	288	ND		
1,2-Dichlorobenzene	13.5	144	ND		
2-Methylphenol (o-Cresol)	29.3	288	ND		
N-Methyl-2-Pyrrolidone (NMP)	68.0	720	ND		
	12.6	144	ND		
3-/4-Methylphenol (p-/m-Cresol)	31.3	288	ND		
N-nitroso-di-n-propylamine	13.2	144	ND		
Hexachloroethane	17.1	144	ND		
Nitrobenzene	12.8	144	ND		
Isophorone	12.2	144	ND		
2-Nitrophenol	25.4	288	ND		
2,4-Dimethylphenol	22.8	288	ND		
Benzoic Acid	41.7	288	ND		
Bis(2-Chloroethoxy)methane	9.79	144	ND		
Bis(2-chloroisopropyl)ether	12.6	144	ND		
2,4-Dichlorophenol	39.3	288	ND		
1,2,4-Trichlorobenzene	11.8	144	ND		
Naphthalene	10.6	144	ND		
2,6-Dichlorophenol	35.8	288	ND		
Hexachloro-1,3-butadiene	8.34	144	ND		
4-Chloro-3-methylphenol	33.8	288	ND		
2-Methylnaphthalene	10.4	144	ND		
1-Methylnaphthalene	12.2	144	ND		
Hexachlorocyclopentadiene	12.9	144	ND		
2,4,6-Trichlorophenol	35.9	288	ND		
2,4,5-Trichlorophenol	33.4	288	ND		
2-Chloronaphthalene	10.6	144	ND		
1,4-Dinitrobenzene	10.3	144	ND		
Dimethyl phthalate	14.2	720	ND		
1,3-Dinitrobenzene	10.4	144	ND		
Acenaphthylene	8.28	144	ND		
2,6-Dinitrotoluene	11.3	144	ND		
1,2-Dinitrobenzene	15.8	144	ND		
Acenaphthene	10.7	144	ND		
2,4-Dinitrophenol	77.6	720	ND		
4-Nitrophenol	54.7	720	ND		
Dibenzofuran	11.2	144	ND		
2,4-Dinitrotoluene	12.1	144	ND		
2,3,5,6-Tetrachlorophenol	27.6	288	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305067	**Prep Method:**	3546_BNA	**Prep Date:**	05/19/23	**Prep Batch:**	1151137
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474887
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
2,3,4,6-Tetrachlorophenol	31.5	288	ND	
Diethylphthalate	13.6	720	79.2	
Fluorene	10.3	144	ND	
4-Chlorophenyl-phenylether	9.32	144	ND	
4,6-Dinitro-2-methylphenol	13.4	288	ND	
Diphenylamine	13.0	144	ND	
Azobenzene	114	144	ND	
4-Bromophenyl-phenylether	8.23	144	ND	
Hexachlorobenzene	8.66	144	ND	
Pentachlorophenol	25.0	288	ND	
Phenanthrene	9.32	144	ND	
Anthracene	8.91	144	ND	
Carbazole	10.7	144	ND	
Di-n-butylphthalate	13.5	144	ND	
Fluoranthene	10.0	147	ND	
Benzidine	147	144	ND	
Pyrene	12.0	144	ND	
Butylbenzylphthalate	21.0	720	ND	
Benzo(a)anthracene	9.80	144	ND	
3,3-Dichlorobenzidine	118	144	ND	
Chrysene	15.2	144	ND	
Bis(2-Ethylhexyl)phthalate	15.3	720	ND	
Di-n-Octylphthalate	12.3	144	ND	
Benzo(b)fluorathene	12.0	144	ND	
benzo(k)fluorathene	8.16	144	ND	
Benzo(a)pyrene	9.80	144	ND	
Indeno(1,2,3-c,d)pyrene	13.8	144	ND	
Dibenzo(a,h)anthracene	12.7	144	ND	
Benzo(g,h,i)perylene	12.7	144	ND	
Pyridine	43.8	720	ND	
2-Fluorophenol (S)			88.1	
Phenol-d6 (S)			105	
2,4,6-Tribromophenol (S)			96.0	
2-Fluorobiphenyl (S)			80.2	
Nitrobenzene-d5 (S)			88.9	
p-Terphenyl-d14 (S)			91.7	

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305067	**Prep Method:**	7199MP	**Prep Date:**	05/18/23	**Prep Batch:**	1151157
Matrix:	Soil	**Analytical Method:**	SW7199	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474857
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Hexavalent Chromium	3.1	10	ND		

Work Order:	2305067	**Prep Method:**	7199MP	**Prep Date:**	05/18/23	**Prep Batch:**	1151158
Matrix:	Soil	**Analytical Method:**	SW7199	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474858
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Hexavalent Chromium	3.1	10	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305067	**Prep Method:**	5035	**Prep Date:**	05/19/23	**Prep Batch:**	1151221
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474928
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier	
Dichlorodifluoromethane	1.2	10	ND		
Chloromethane	1.8	10	ND		
Vinyl Chloride	2.0	10	ND		
Bromomethane	2.7	10	ND		
Chloroethane	3.0	10	ND		
Trichlorofluoromethane	2.1	10	ND		
1,1-Dichloroethene	2.0	10	ND		
Freon 113	1.9	10	ND		
Methylene Chloride	7.1	10	ND		
trans-1,2-Dichloroethene	2.1	10	ND		
MTBE	2.3	10	ND		
TBA	12	50	ND		
Diisopropyl ether	2.3	10	ND		
1,1-Dichloroethane	2.2	10	ND		
Ethyl tert-Butyl ether	2.3	10	ND		
cis-1,2-Dichloroethene	2.2	10	ND		
2,2-Dichloropropane	1.9	10	ND		
Bromochloromethane	2.3	10	ND		
Chloroform	2.4	10	ND		
Carbon Tetrachloride	2.1	10	ND		
1,1,1-Trichloroethane	2.1	10	ND		
1,1-Dichloropropene	2.0	10	ND		
Benzene	2.2	10	ND		
TAME	2.3	10	ND		
1,2-Dichloroethane	2.3	10	ND		
Trichloroethene	1.8	10	ND		
Dibromomethane	1.8	10	ND		
1,2-Dichloropropane	1.9	10	ND		
Bromodichloromethane	2.0	10	ND		
cis-1,3-Dichloropropene	1.6	10	ND		
Toluene	1.8	10	ND		
Tetrachloroethene	1.7	10	ND		
trans-1,3-Dichloropropene	1.6	10	ND		
1,1,2-Trichloroethane	1.8	10	ND		
Dibromochloromethane	1.9	10	ND		
1,3-Dichloropropane	1.8	10	ND		
1,2-Dibromoethane	1.8	10	ND		
Chlorobenzene	1.8	10	ND		
Ethylbenzene	1.7	10	ND		
1,1,1,2-Tetrachloroethane	1.9	10	ND		
m,p-Xylene	3.2	10	ND		
o-Xylene	1.7	10	ND		
Styrene	1.6	10	ND		
Bromoform	1.7	10	ND		
Isopropyl Benzene	1.6	10	ND		

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305067	**Prep Method:**	5035	**Prep Date:**	05/19/23	**Prep Batch:**	1151221
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474928
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
n-Propylbenzene	1.6	10	ND	
Bromobenzene	1.8	10	ND	
1,1,2,2-Tetrachloroethane	1.9	10	ND	
2-Chlorotoluene	1.8	10	ND	
1,3,5-Trimethylbenzene	1.6	10	ND	
1,2,3-Trichloropropane	1.9	10	ND	
4-Chlorotoluene	1.6	10	ND	
tert-Butylbenzene	1.6	10	ND	
1,2,4-Trimethylbenzene	1.4	10	ND	
sec-Butyl Benzene	1.6	10	ND	
p-Isopropyltoluene	1.5	10	ND	
1,3-Dichlorobenzene	1.7	10	ND	
1,4-Dichlorobenzene	1.7	10	ND	
n-Butylbenzene	1.5	10	ND	
1,2-Dichlorobenzene	1.8	10	ND	
1,2-Dibromo-3-Chloropropane	1.8	10	ND	
Hexachlorobutadiene	1.4	10	ND	
1,2,4-Trichlorobenzene	1.5	10	ND	
Naphthalene	1.7	10	ND	
1,2,3-Trichlorobenzene	1.7	10	ND	
2-Butanone	2.3	10	ND	
MIBK	2.0	50	ND	
Hexachloroethane	5.0	10	ND	
1,4-Dioxane	100	200	ND	
2-Hexanone	5.0	20	ND	
Acetone	8.2	20	ND	
(S) Dibromofluoromethane			77.9	
(S) Toluene-d8			99.6	
(S) 4-Bromofluorobenzene			97.6	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305067	**Prep Method:**	3546_OCP	**Prep Date:**	05/13/23	**Prep Batch:**	1150929
Matrix:	Soil	**Analytical Method:**	SW8081B	**Analyzed Date:**	5/13/2023	**Analytical Batch:**	474648
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
gamma-BHC (Lindane)	0.16	2.0	ND	40	81.7	85.6	4.78	25 - 135	30	
Heptachlor	0.11	2.0	ND	40	85.9	90.8	5.37	40 - 130	30	
Aldrin	0.20	2.0	ND	40	86.6	90.2	3.95	25 - 140	30	
delta-BHC	0.15	2.0	ND	40	86.3	91.6	5.91	60 - 130	30	
Heptachlor	0.19	2.0	ND	40	87.4	92.2	5.29	55 - 135	30	
4,4'-DDT	0.13	2.0	ND	40	88.1	94.2	6.86	45 - 140	30	
Tetrachloro-M-Xylene (S)				100	82.9	83.0		48 - 125		
Decachlorobiphenyl (S)				100	93.1	94.9		38 - 135		

Work Order:	2305067	**Prep Method:**	3050B	**Prep Date:**	05/15/23	**Prep Batch:**	1150962
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/15/2023	**Analytical Batch:**	474699
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony	0.050	5.00	ND	50	98.3	99.6	1.21	80 - 120	30	
Arsenic	0.15	1.30	ND	50	99.4	100	0.602	80 - 120	30	
Barium	0.055	5.00	0.14	50	101	102	0.985	80 - 120	30	
Beryllium	0.055	5.00	ND	50	102	103	0.976	80 - 120	30	
Cadmium	0.10	0.750	ND	50	101	102	0.985	80 - 120	30	
Chromium	0.075	5.00	0.13	50	102	103	0.976	80 - 120	30	
Cobalt	0.070	5.00	ND	50	102	103	0.976	80 - 120	30	
Copper	0.20	5.00	ND	50	102	103	0.976	80 - 120	30	
Lead	0.10	3.00	ND	50	101	102	0.985	80 - 120	30	
Molybdenum	0.050	5.00	0.050	50	101	102	0.985	80 - 120	30	
Nickel	0.50	5.00	ND	50	102	103	0.976	80 - 120	30	
Selenium	0.22	5.00	ND	50	92.9	93.5	0.643	80 - 120	30	
Silver	0.15	5.00	ND	50	99.3	100	0.602	80 - 120	30	
Thallium	0.20	5.00	ND	50	99.8	101	1.20	80 - 120	30	
Vanadium	0.10	5.00	ND	50	102	103	0.976	80 - 120	30	
Zinc	0.30	5.00	3.2	50	111	111	0.000	80 - 120	30	

Work Order:	2305067	**Prep Method:**	7471BP	**Prep Date:**	05/15/23	**Prep Batch:**	1150976
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/16/2023	**Analytical Batch:**	474697
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury	0.047	0.50	ND	1.25	105	104	0.766	80 - 120	20	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305067	**Prep Method:**	3050B	**Prep Date:**	05/17/23	**Prep Batch:**	1151065
Matrix:	Soil	**Analytical Method:**	SW6010B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474846
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Antimony	0.050	5.00	0.065	50	99.7	100	0.200	80 - 120	30	
Arsenic	0.15	1.30	ND	50	98.4	98.7	0.406	80 - 120	30	
Barium	0.055	5.00	0.19	50	103	103	0.000	80 - 120	30	
Beryllium	0.055	5.00	ND	50	102	102	0.000	80 - 120	30	
Cadmium	0.10	0.750	ND	50	101	101	0.000	80 - 120	30	
Chromium	0.075	5.00	0.16	50	103	103	0.000	80 - 120	30	
Cobalt	0.070	5.00	ND	50	102	102	0.000	80 - 120	30	
Copper	0.20	5.00	ND	50	105	105	0.000	80 - 120	30	
Lead	0.10	3.00	ND	50	102	102	0.000	80 - 120	30	
Molybdenum	0.050	5.00	0.15	50	103	103	0.000	80 - 120	30	
Nickel	0.50	5.00	ND	50	102	102	0.000	80 - 120	30	
Selenium	0.22	5.00	ND	50	91.8	92.4	0.651	80 - 120	30	
Silver	0.15	5.00	ND	50	100	101	0.995	80 - 120	30	
Thallium	0.20	5.00	ND	50	99.7	101	1.20	80 - 120	30	
Vanadium	0.10	5.00	ND	50	103	103	0.000	80 - 120	30	
Zinc	0.30	5.00	ND	50	100	101	0.995	80 - 120	30	

Work Order:	2305067	**Prep Method:**	7471BP	**Prep Date:**	05/17/23	**Prep Batch:**	1151067
Matrix:	Soil	**Analytical Method:**	SW7471B	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474773
Units:	mg/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Mercury	0.047	0.50	ND	1.25	117	117	0.000	80 - 120	20	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305067	**Prep Method:**	3546_BNA	**Prep Date:**	05/19/23	**Prep Batch:**	1151137
Matrix:	Soil	**Analytical Method:**	SW8270C	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474887
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Phenol	43.8	288	ND	1200	92.5	94.2	1.79	40 - 100	30	
2-Chlorophenol	47.7	288	ND	1200	92.4	88.8	3.67	45 - 105	30	
Bis(2-chloroethyl)ether	14.6	144	ND	400	76.2	75.7	0.658	35 - 105	30	
N-nitroso-di-n-propylamine	13.2	144	ND	400	107	109	1.85	40 - 115	30	
1,2,4-Trichlorobenzene	11.8	144	ND	400	78.7	75.4	4.21	45 - 110	30	
1,4-Dichlorobenzene	33.8	288	ND	1200	103	95.8	7.53	45 - 110	30	
Acenaphthene	10.7	144	ND	400	93.0	86.2	7.53	45 - 110	30	
4-Nitrophenol	54.7	720	ND	1200	87.3	81.4	7.31	15 - 140	30	
2,4-Dinitrotoluene	12.1	144	ND	400	91.9	91.3	0.819	50 - 115	30	
N-Methyl-2-Pyrrolidone (NMP)	12.0	144	ND	1200	68.3	70.5	3.12	25 - 120	30	
Pyrene	12.0	144	ND	400	90.7	87.6	3.65	45 - 145	30	
2-Fluorophenol (S)				11100	86.8	84.7		25 - 121		
Phenol-d6 (S)				11100	95.7	98.5		24 - 113		
2,4,6-Tribromophenol (S)				11100	107	97.9		19 - 122		
2-Fluorobiphenyl (S)				5560	89.1	81.3		30 - 143		
Nitrobenzene-d5 (S)				5560	93.6	77.9		23 - 120		
p-Terphenyl-d14 (S)				5560	86.3	79.5		18 - 137		

Work Order:	2305067	**Prep Method:**	7199MP	**Prep Date:**	05/18/23	**Prep Batch:**	1151157
Matrix:	Soil	**Analytical Method:**	SW7199	**Analyzed Date:**	5/18/2023	**Analytical Batch:**	474857
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Hexavalent Chromium	3.1	10	ND	100	101	103	1.96	80 - 120	20	

Work Order:	2305067	**Prep Method:**	7199MP	**Prep Date:**	05/18/23	**Prep Batch:**	1151158
Matrix:	Soil	**Analytical Method:**	SW7199	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474858
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Hexavalent Chromium	3.1	10	ND	100	99.6	99.9	0.301	80 - 120	20	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305067	**Prep Method:**	5035	**Prep Date:**	05/19/23	**Prep Batch:**	1151221
Matrix:	Soil	**Analytical Method:**	SW8260B	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474928
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
1,1-Dichloroethene	2.0	10	ND	50.0	113	90.0	23.0	53.7 - 139	30	
Benzene	2.2	10	ND	50.0	113	90.0	22.3	66.5 - 135	30	
Trichloroethene	1.8	10	ND	50.0	115	91.8	22.4	57.5 - 150	30	
Toluene	1.8	10	ND	50.0	109	94.1	15.1	56.8 - 134	30	
Chlorobenzene	1.8	10	ND	50.0	109	91.6	17.0	57.4 - 134	30	
(S) Dibromofluoromethane				50.0	104	85.8		59.8 - 148		
(S) Toluene-d8				50.0	110	92.9		55.2 - 133		
(S) 4-Bromofluorobenzene				50.0	112	94.3		55.8 - 141		

Laboratory Qualifiers and Definitions

DEFINITIONS:

Accuracy/Bias (% Recovery) - The closeness of agreement between an observed value and an accepted reference value.
Blank (Method/Preparation Blank) -MB/PB - An analyte-free matrix to which all reagents are added in the same volumes/proportions as used in sample processing. The method blank is used to document contamination resulting from the analytical process.
Duplicate - a field sample and/or laboratory QC sample prepared in duplicate following all of the same processes and procedures used on the original sample (sample duplicate, LCSD, MSD)
Laboratory Control Sample (LCS ad LCSD) - A known matrix spiked with compounds representative of the target analyte(s). This is used to document laboratory performance.
Matrix - the component or substrate that contains the analyte of interest (e.g., - groundwater, sediment, soil, waste water, etc)
Matrix Spike (MS/MSD) - Client sample spiked with identical concentrations of target analyte (s). The spiking occurs prior to the sample preparation and analysis. They are used to document the precision and bias of a method in a given sample matrix.
Method Detection Limit (MDL) - the minimum concentration of a substance that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero
Practical Quantitation Limit/Reporting Limit/Limit of Quantitation (PQL/RL/LOQ) - a laboratory determined value at 2 to 5 times above the MDL that can be reproduced in a manner that results in a 99% confidence level that the result is both accurate and precise. PQLs/RLs/LODs reflect all preparation factors and/or dilution factors that have been applied to the sample during the preparation and/or analytical processes.
Precision (%RPD) - The agreement among a set of replicate/duplicate measurements without regard to known value of the replicates
Surrogate (S) or (Surr) - An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. Surrogates are used in most organic analysis to demonstrate matrix compatibility with the chosen method of analysis
Tentatively Identified Compound (TIC) - A compound not contained within the analytical calibration standards but present in the GCMS library of defined compounds. When the library is searched for an unknown compound, it can frequently give a tentative identification to the compound based on retention time and primary and secondary ion match. TICs are reported as estimates and are candidates for further investigation.
Units: the unit of measure used to express the reported result - **mg/L** and ***mg/Kg*** (equivalent to PPM - parts per million in **liquid** and ***solid***), **ug/L** and ***ug/Kg*** (equivalent to PPB - parts per billion in **liquid** and ***solid***), **ug/m3**, ***mg/m3***, **ppbv** and ***ppmv*** (all units of measure for reporting concentrations in air), **%** (equivalent to 10000 ppm or 1,000,000 ppb), **ug/Wipe** (concentration found on the surface of a single Wipe usually taken over a 100cm2 surface)

LABORATORY QUALIFIERS

B - Indicates when the analyte is found in the associated method or preparation blank
D - Surrogate is not recoverable due to the necessary dilution of the sample
E - Indicates the reportable value is outside of the calibration range of the instrument but within the linear range of the instrument (unless otherwise noted) Values reported with an E qualifier should be considered as estimated.
H- Indicates that the recommended holding time for the analyte or compound has been exceeded
J- Indicates a value between the method MDL and PQL and that the reported concentration should be considered as estimated rather the quantitative
NA - Not Analyzed
N/A - Not Applicable
ND - Not Detected at a concentration greater than the PQL/RL or, if reported to the MDL, at greater than the MDL.
NR - Not recoverable - a matrix spike concentration is not recoverable due to a concentration within the original sample that is greater than four times the spike concentration added
R- The % RPD between a duplicate set of samples is outside of the absolute values established by laboratory control charts
S- Spike recovery is outside of established method and/or laboratory control limits. Further explanation of the use of this qualifier should be included within a case narrative
X -Used to indicate that a value based on pattern identification is within the pattern range but not typical of the pattern found in standards. Further explanation may or may not be provided within the sample footnote and/or the case narrative.

Sample Receipt Checklist

Client Name: Langan

Project Name: VERNON

Work Order No.: 2305067

Date and Time Received: 5/9/2023 10:06:00AM

Received By: Lorna Imbat

Physically Logged By: Lorna Imbat

Checklist Completed By: Lorna Imbat

Carrier Name: FedEx

Chain of Custody (COC) Information

Chain of custody present?	Yes
Chain of custody signed when relinquished and received?	Yes
Chain of custody agrees with sample labels?	Yes
Custody seals intact on sample bottles?	Not Present

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Not Present
Shipping Container/Cooler In Good Condition?	Yes
Samples in proper container/bottle?	Yes
Samples containers intact?	Yes
Sufficient sample volume for indicated test?	Yes

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes			
Container/Temp Blank temperature in compliance?	Yes	Temperature:	2.0	°C
Water-VOA vials have zero headspace?	No VOA vials submitted			
Water-pH acceptable upon receipt?	N/A			

pH Checked by: N/A

pH Adjusted by: N/A

Comments:

Torrent LABORATORY, INC.

Login Summary Report

Client ID: TL5493 Langan
Project Name: VERNON
Project # : 721040501
Report Due Date: 5/23/2023

QC Level: II
TAT Requested: 3 Day Std:3
Date Received: 5/9/2023
Time Received: 10:06 am

Comments:

Work Order # : ***2305067***

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
2305067-001A	B-3-5	05/05/23 7:57	Soil	11/01/23			Hg_S_7471B Cr6_S_7199Mod Met_S_6010B CAM17 Pest_S_8081OCP	
Sample Note:								
2305067-002A	B-3-10	05/05/23 8:06	Soil	11/01/23			Hold Samples SVO_S_8270CFull VOC_S_8260B	
Sample Note:	VOCs, SVOCs due 5/23							
2305067-003A	B-3-15	05/05/23 8:10	Soil	11/01/23			Hold Samples Met_S_6010B CAM17 Cr6_S_7199Mod Hg_S_7471B	
2305067-004A	B-3-20	05/05/23 8:17	Soil	11/01/23			Hold Samples	
2305067-005A	B-3-25	05/05/23 8:22	Soil	11/01/23			Hold Samples	
2305067-006A	B-3-30	05/05/23 8:27	Soil	11/01/23			Hold Samples SVO_S_8270CFull VOC_S_8260B	
2305067-007A	B-8-5	05/05/23 9:40	Soil	11/01/23			Hg_S_7471B Cr6_S_7199Mod Met_S_6010B CAM17 Pest_S_8081OCP	
2305067-008A	B-8-10	05/05/23 9:45	Soil	11/01/23			Hold Samples	
2305067-009A	B-8-15	05/05/23 9:49	Soil	11/01/23			Hold Samples Met_S_6010B CAM17 Cr6_S_7199Mod Hg_S_7471B	
2305067-010A	B-8-20	05/05/23 9:59	Soil	11/01/23			Hold Samples	
2305067-011A	B-8-25	05/05/23 10:05	Soil	11/01/23			Hold Samples	
2305067-012A	B-8-30	05/05/23 10:12	Soil	11/01/23				

Login Summary Report

Client ID:	TL5493	Langan	**QC Level:**	II
Project Name:	VERNON		**TAT Requested:**	3 Day Std:3
Project # :	721040501		**Date Received:**	5/9/2023
Report Due Date:	5/23/2023		**Time Received:**	10:06 am

Comments:

Work Order # : ***2305067***

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
2305067-013A	B-9-5	05/05/23 12:30	Soil	11/01/23			Hold Samples SVO_S_8270CFull VOC_S_8260B Hg_S_7471B Cr6_S_7199Mod Met_S_6010B CAM17	
2305067-014A	B-9-10	05/05/23 12:35	Soil	11/01/23			Hold Samples	
2305067-015A	B-9-15	05/05/23 12:40	Soil	11/01/23			Hold Samples Met_S_6010B CAM17 Cr6_S_7199Mod Hg_S_7471B	
2305067-016A	B-9-20	05/05/23 12:45	Soil	11/01/23			Hold Samples	
2305067-017A	B-9-25	05/05/23 12:48	Soil	11/01/23			Hold Samples	
2305067-018A	B-9-30	05/05/23 12:57	Soil	11/01/23			Hold Samples	
2305067-019A	B-9-35	05/05/23 13:04	Soil	11/01/23			Hold Samples	

Torrent LABORATORY, INC.

Torrent LABORATORY, INC
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

Reset

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 2305067

Company Name: LANGAN ☑ Env. ☐ Non Env.
Address: 515 S. FLOWER ST, SUITE 1060
City: LA State: CA Zip Code: 90071
Telephone: 213 280 9903 Cell:
REPORT TO: N. CUTLER BILL TO:

Project #: 721040501 PO#:
Project Name: VERNON
Comments: HOLD ALL SAMPLES FOR ANALYSIS
SAMPLER: M. CHE
EMAIL: NCUTLER AND MCHE @ LANGAN.COM

TURNAROUND TIME:
☐ 2 - 8 Hours ☐ 2 Work Days ☐ 5 Work Days
☐ Noon - Nxt Day ☐ 3 Work Days ☐ 7 Work Days
☐ 1 Work Day ☐ 4 Work Days ☐ 10 Work Days

SAMPLE TYPE:
☐ Drinking Water ☐ Storm Water ☐ Air ☐ Waste Water ☐ Wipe ☐ Ground Water ☐ Other ☐ Soil ☐ Product / Bulk

REPORT FORMAT:
☐ Level II - Std. ☐ DoD/DoE Level III ☐ DoD/DoE Level III ☐ Excel - EDD ☐ EDF ☐ Client Specific EDD

ANALYSIS REQUESTED

LAB ID	CANISTER I.D.	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	8260B VOC	8270 SVOC SIM	CAM 17 6010 B	REMARKS
-011A	NA	B-8-25	5/5/23 1005	Soil	1	Glass	✓	✓	✓	HOLD
-012A		B-8-30	5/5/23 1012	Soil	1	Glass	✓	✓	✓	
~~-013A~~	13	~~B-8-35~~	5/5/23 1022	Soil	1	Glass	✓	✓	✓	
-014A	14	B-9-5	5/5/23 1230	Soil	1	Glass	✓	✓	✓	
-015A	15	B-9-10	5/5/23 1235	Soil	1	Glass	✓	✓	✓	
-016A	16	B-9-15	5/5/23 1240	Soil	1	Glass	✓	✓	✓	
-017A	17	B-9-20	5/5/23 1245	Soil	1	Glass	✓	✓	✓	
-018A	18	B-9-25	5/5/23 1248	Soil	1	Glass	✓	✓	✓	
-019A	19	B-9-30	5/5/23 1257	Soil	1	Glass	✓	✓	✓	
-020A	20	B-9-35	5/5/23 1304	Soil	1	Glass	✓	✓	✓	

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	Melody Che	MELODY CHE	5/5/23	1630		L.D. Imbal	5-9-23	1006
2	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:

Cooler Temperature 2.0 #3 °C Samples Received on ice? Yes ☒ No ☐ Method of Shipment Fed EX

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 6 of 7

Torrent LABORATORY, INC.

Torrent LABORATORY INC
Milpitas, CA 95035
Phone: 408.263.5258
FAX: 408.263.8293
www.torrentlab.com

Reset

CHAIN OF CUSTODY

• NOTE: SHADED AREAS ARE FOR TORRENT LAB USE ONLY •

LAB WORK ORDER NO: 2305067

Company Name: LANGAN ☑ Env. ☐ Non Env.			Project #: 721040501 PO#:
Address: 515 S FLOWER ST, SUITE 1060			Project Name: VERNON
City: LA	State: CA	Zip Code: 90071	Comments: HOLD ALL SAMPLES FOR ANALYSIS
Telephone: 213 280 9903	Cell: –		SAMPLER: M. CHE
REPORT TO: N. CUTLER	BILL TO:		EMAIL: NCUTLER ; MCHE@LANGAN.COM

TURNAROUND TIME:
☐ 2 - 8 Hours ☐ 2 Work Days ☐ 5 Work Days
☐ Noon - Nxt Day ☐ 3 Work Days ☐ 7 Work Days
☐ 1 Work Day ☐ 4 Work Days ☐ 10 Work Days

SAMPLE TYPE:
☐ Drinking Water ☐ Storm Water ☐ Air ☐ Waste Water ☐ Wipe ☐ Ground Water ☐ Other ☐ Soil ☐ Product / Bulk

REPORT FORMAT:
☐ Level II - Std. ☐ DoD/DoE Level III ☐ DoD/DoE Level III ☐ Excel - EDD ☐ EDF ☐ Client Specific EDD

ANALYSIS REQUESTED

LAB ID	CANISTER I.D.	CLIENT'S SAMPLE I.D.	DATE / TIME SAMPLED	MATRIX	# OF CONT	CONT TYPE	VOC 8260B	SVOC 8270 SIM	CAM 17 6010B	REMARKS
001A	NA	B-3-5	5/5/23 0757	Soil	1	Glass	✓	✓	✓	HOLD
002A		B-3-10	5/5/23 0806	Soil	1	Glass	✓	✓	✓	
003A		B-3-15	5/5/23 0810	Soil	1	Glass	✓	✓	✓	
004A		B-3-20	5/5/23 0817	Soil	1	Glass	✓	✓	✓	
005A		B-3-25	5/5/23 0822	Soil	1	Glass	✓	✓	✓	
006A		B-3-30	5/5/23 0827	Soil	1	Glass	✓	✓	✓	
007A		B-8-5	5/5/23 0940	Soil	1	Glass	✓	✓	✓	
008A		B-8-10	5/5/23 0945	Soil	1	Glass	✓	✓	✓	
009A		B-8-15	5/5/23 0949	Soil	1	Glass	✓	✓	✓	
010A		B-8-20	5/5/23 0959	Soil	1	Glass	✓	✓	✓	

	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:
1	Melody Che	MELODY CHE	5/5/23	1630		L.D. Imbat	5-9-23	1006
2	Relinquished By:	Print:	Date:	Time:	Received By:	Print:	Date:	Time:

Cooler Temperature 2.0 °C Samples Received on ice? Yes ☒ No ☐ Method of Shipment Fed EX

NOTE: Samples are discarded by the laboratory 30 days from date of receipt unless other arrangements are made.

Page 5 of 7

Gmail Torrent Laboratory, Inc. <pm@torrentlaboratory.com>

RE: [External] Re: Sample order for PO: 721040501

1 message

Nick Cutler <ncutler@langan.com> Wed, May 10, 2023 at 8:42 PM
To: "Torrent Laboratory, Inc." <pm@torrentlaboratory.com>, Katherine Thomas <kthomas@langan.com>
Cc: "melanie.moran@torrentlaboratory.com" <melanie.moran@torrentlaboratory.com>, Melody Che <mche@langan.com>

Hi Kathie –

Can you please run the analyses on a 3-day TAT per the table below?

Sample ID	Metals 6010B	Pesticides 8081A	PCBs 8082	ACM PLM
B-1-5	1	1		1
B-2-5	1	1	1	
B-3-5	1	1		
B-4-6	1			
B-5-5	1			
B-6-5	1			
B-7-6	1			
B-8-5	1	1		
B-9-5	1			
B-11-5	1	1	1	
B-12-5	1		1	
B-13-5	1		1	

Cordially,
Nick Cutler

483 Sinclair Frontage Rd., Milpitas, CA 95035 | tel: 408.263.5258 | fax: 408.263.8293 | www.torrentlab.com

Torrent
LABORATORY, INC.

Langan
135 Main Street, Suite 1500
San Francisco, California 94105
Tel: 415.955.5200

RE: VERNON

Work Order No.: 2305124

Dear Nick Cutler:

Torrent Laboratory, Inc. received 6 sample(s) on May 13, 2023 for the analyses presented in the following Report.

All data for associated QC met EPA or laboratory specification(s) except where noted in the case narrative.

Torrent Laboratory, Inc. is certified by the State of California, ELAP #1991. If you have any questions regarding these test results, please feel free to contact the Project Management Team at (408)263-5258; ext 204.



Kathie Evans
Project Manager

May 22, 2023
Date

Torrent LABORATORY, INC.

Date: 5/22/2023

Client: Langan

Project: VERNON

Work Order: 2305124

CASE NARRATIVE

Unless otherwise indicated in the following narrative, no issues encountered with the receiving, preparation, analysis or reporting of the results associated with this work order.

Unless otherwise indicated in the following narrative, no results have been method and/or field blank corrected.

Reported results relate only to the items/samples tested by the laboratory.

This report shall not be reproduced, except in full, without the written approval of Torrent Laboratory, Inc.

Torrent LABORATORY, INC.

Sample Result Summary

Report prepared for: Nick Cutler
Langan

Date Received: 05/13/23
Date Reported: 05/22/23

CS-01 2305124-001

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

CS-02 2305124-002

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

CS-03 2305124-003

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

CS-04 2305124-004

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

CS-05 2305124-005

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

CS-06 2305124-006

Parameters:	Analysis Method	DF	MDL	PQL	Results	Unit

All compounds were non-detectable for this sample.

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/13/23, 1152 am
Date Reported: 05/22/23

Client Sample ID:	CS-01	**Lab Sample ID:**	2305124-001A
Project Name/Location:	VERNON	**Sample Matrix:**	Concrete
Project Number:	721040501		
Date/Time Sampled:	05/12/23 / 12:15		
SDG:			

Prep Method:	3546_PCB	**Prep Batch Date/Time:**	5/19/23 9:33:00AM
Prep Batch ID:	1151124	**Prep Analyst:**	SSUTRA

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Aroclor1016	SW8082A	1	35.0	100	ND		ug/Kg	05/19/23	11:50	LA	474923
Aroclor1221	SW8082A	1	5.00	100	ND		ug/Kg	05/19/23	11:50	LA	474923
Aroclor1232	SW8082A	1	17.0	100	ND		ug/Kg	05/19/23	11:50	LA	474923
Aroclor1242	SW8082A	1	3.00	100	ND		ug/Kg	05/19/23	11:50	LA	474923
Aroclor1248	SW8082A	1	2.00	100	ND		ug/Kg	05/19/23	11:50	LA	474923
Aroclor1254	SW8082A	1	14.0	100	ND		ug/Kg	05/19/23	11:50	LA	474923
Aroclor1260	SW8082A	1	24.0	100	ND		ug/Kg	05/19/23	11:50	LA	474923
			Acceptance Limits								
TCMX (S)	SW8082A		48 - 125		**57.0**		%	05/19/23	11:50	LA	474923
DCBP (S)	SW8082A		48 - 135		**55.0**		%	05/19/23	11:50	LA	474923

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/13/23, 1152 am
Date Reported: 05/22/23

Client Sample ID:	CS-02	**Lab Sample ID:**	2305124-002A
Project Name/Location:	VERNON	**Sample Matrix:**	Concrete
Project Number:	721040501		
Date/Time Sampled:	05/12/23 / 12:40		
SDG:			

Prep Method:	3546_PCB	**Prep Batch Date/Time:**	5/19/23 9:33:00AM
Prep Batch ID:	1151124	**Prep Analyst:**	SSUTRA

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Aroclor1016	SW8082A	1	35.0	100	ND		ug/Kg	05/19/23	12:06	LA	474923
Aroclor1221	SW8082A	1	5.00	100	ND		ug/Kg	05/19/23	12:06	LA	474923
Aroclor1232	SW8082A	1	17.0	100	ND		ug/Kg	05/19/23	12:06	LA	474923
Aroclor1242	SW8082A	1	3.00	100	ND		ug/Kg	05/19/23	12:06	LA	474923
Aroclor1248	SW8082A	1	2.00	100	ND		ug/Kg	05/19/23	12:06	LA	474923
Aroclor1254	SW8082A	1	14.0	100	ND		ug/Kg	05/19/23	12:06	LA	474923
Aroclor1260	SW8082A	1	24.0	100	ND		ug/Kg	05/19/23	12:06	LA	474923
			Acceptance Limits								
TCMX (S)	SW8082A		48 - 125		**66.0**		%	05/19/23	12:06	LA	474923
DCBP (S)	SW8082A		48 - 135		**55.0**		%	05/19/23	12:06	LA	474923

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/13/23, 1152 am
Date Reported: 05/22/23

Client Sample ID:	CS-03	**Lab Sample ID:**	2305124-003A
Project Name/Location:	VERNON	**Sample Matrix:**	Concrete
Project Number:	721040501		
Date/Time Sampled:	05/12/23 / 13:03		
SDG:			

Prep Method:	3546_PCB	**Prep Batch Date/Time:**	5/19/23 9:33:00AM
Prep Batch ID:	1151124	**Prep Analyst:**	SSUTRA

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Aroclor1016	SW8082A	1	35.0	100	ND		ug/Kg	05/19/23	12:23	La	474923
Aroclor1221	SW8082A	1	5.00	100	ND		ug/Kg	05/19/23	12:23	La	474923
Aroclor1232	SW8082A	1	17.0	100	ND		ug/Kg	05/19/23	12:23	La	474923
Aroclor1242	SW8082A	1	3.00	100	ND		ug/Kg	05/19/23	12:23	La	474923
Aroclor1248	SW8082A	1	2.00	100	ND		ug/Kg	05/19/23	12:23	La	474923
Aroclor1254	SW8082A	1	14.0	100	ND		ug/Kg	05/19/23	12:23	La	474923
Aroclor1260	SW8082A	1	24.0	100	ND		ug/Kg	05/19/23	12:23	La	474923
			Acceptance Limits								
TCMX (S)	SW8082A		48 - 125		**70.0**		%	05/19/23	12:23	La	474923
DCBP (S)	SW8082A		48 - 135		**64.0**		%	05/19/23	12:23	La	474923

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/13/23, 1152 am
Date Reported: 05/22/23

Client Sample ID:	CS-04	**Lab Sample ID:**	2305124-004A
Project Name/Location:	VERNON	**Sample Matrix:**	Concrete
Project Number:	721040501		
Date/Time Sampled:	05/12/23 / 11:24		
SDG:			

Prep Method:	3546_PCB	**Prep Batch Date/Time:**	5/19/23 9:33:00AM
Prep Batch ID:	1151124	**Prep Analyst:**	SSUTRA

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Aroclor1016	SW8082A	1	35.0	100	ND		ug/Kg	05/19/23	12:39	LA	474923
Aroclor1221	SW8082A	1	5.00	100	ND		ug/Kg	05/19/23	12:39	LA	474923
Aroclor1232	SW8082A	1	17.0	100	ND		ug/Kg	05/19/23	12:39	LA	474923
Aroclor1242	SW8082A	1	3.00	100	ND		ug/Kg	05/19/23	12:39	LA	474923
Aroclor1248	SW8082A	1	2.00	100	ND		ug/Kg	05/19/23	12:39	LA	474923
Aroclor1254	SW8082A	1	14.0	100	ND		ug/Kg	05/19/23	12:39	LA	474923
Aroclor1260	SW8082A	1	24.0	100	ND		ug/Kg	05/19/23	12:39	LA	474923
			Acceptance Limits								
TCMX (S)	SW8082A		48 - 125		**65.0**		%	05/19/23	12:39	LA	474923
DCBP (S)	SW8082A		48 - 135		**57.0**		%	05/19/23	12:39	LA	474923

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/13/23, 1152 am
Date Reported: 05/22/23

Client Sample ID:	CS-05	**Lab Sample ID:**	2305124-005A
Project Name/Location:	VERNON	**Sample Matrix:**	Concrete
Project Number:	721040501		
Date/Time Sampled:	05/12/23 / 10:56		
SDG:			

Prep Method:	3546_PCB	**Prep Batch Date/Time:**	5/19/23 9:33:00AM
Prep Batch ID:	1151124	**Prep Analyst:**	SSUTRA

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Aroclor1016	SW8082A	1	35.0	100	ND		ug/Kg	05/19/23	13:32	LA	474923
Aroclor1221	SW8082A	1	5.00	100	ND		ug/Kg	05/19/23	13:32	LA	474923
Aroclor1232	SW8082A	1	17.0	100	ND		ug/Kg	05/19/23	13:32	LA	474923
Aroclor1242	SW8082A	1	3.00	100	ND		ug/Kg	05/19/23	13:32	LA	474923
Aroclor1248	SW8082A	1	2.00	100	ND		ug/Kg	05/19/23	13:32	LA	474923
Aroclor1254	SW8082A	1	14.0	100	ND		ug/Kg	05/19/23	13:32	LA	474923
Aroclor1260	SW8082A	1	24.0	100	ND		ug/Kg	05/19/23	13:32	LA	474923
			Acceptance Limits								
TCMX (S)	SW8082A		48 - 125		**73.0**		%	05/19/23	13:32	LA	474923
DCBP (S)	SW8082A		48 - 135		**60.0**		%	05/19/23	13:32	LA	474923

Torrent LABORATORY, INC.

SAMPLE RESULTS

Report prepared for: Nick Cutler
Langan

Date/Time Received: 05/13/23, 1152 am
Date Reported: 05/22/23

Client Sample ID:	CS-06	**Lab Sample ID:**	2305124-006A
Project Name/Location:	VERNON	**Sample Matrix:**	Concrete
Project Number:	721040501		
Date/Time Sampled:	05/12/23 / 13:30		
SDG:			

Prep Method:	3546_PCB	**Prep Batch Date/Time:**	5/19/23 9:33:00AM
Prep Batch ID:	1151124	**Prep Analyst:**	SSUTRA

Parameters:	Analysis Method	DF	MDL	PQL	Results	Q	Units	Analyzed	Time	By	Analytical Batch
Aroclor1016	SW8082A	1	35.0	100	ND		ug/Kg	05/19/23	13:49	LA	474923
Aroclor1221	SW8082A	1	5.00	100	ND		ug/Kg	05/19/23	13:49	LA	474923
Aroclor1232	SW8082A	1	17.0	100	ND		ug/Kg	05/19/23	13:49	LA	474923
Aroclor1242	SW8082A	1	3.00	100	ND		ug/Kg	05/19/23	13:49	LA	474923
Aroclor1248	SW8082A	1	2.00	100	ND		ug/Kg	05/19/23	13:49	LA	474923
Aroclor1254	SW8082A	1	14.0	100	ND		ug/Kg	05/19/23	13:49	LA	474923
Aroclor1260	SW8082A	1	24.0	100	ND		ug/Kg	05/19/23	13:49	LA	474923
			Acceptance Limits								
TCMX (S)	SW8082A		48 - 125		**55.0**		%	05/19/23	13:49	LA	474923
DCBP (S)	SW8082A		48 - 135		**49.0**		%	05/19/23	13:49	LA	474923

Torrent LABORATORY, INC.

MB Summary Report

Work Order:	2305124	**Prep Method:**	3546_PCB	**Prep Date:**	05/19/23	**Prep Batch:**	1151124
Matrix:	Soil	**Analytical Method:**	SW8082A	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474923
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Lab Qualifier
Aroclor1016	35.0	100	ND	
Aroclor1221	5.00	100	ND	
Aroclor1232	17.0	100	ND	
Aroclor1242	3.00	100	ND	
Aroclor1248	2.00	100	ND	
Aroclor1254	14.0	100	ND	
Aroclor1260	24.0	100	ND	
TCMX (S)			102	
DCBP (S)			83.0	

Torrent LABORATORY, INC.

LCS/LCSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305124	**Prep Method:**	3546_PCB	**Prep Date:**	05/19/23	**Prep Batch:**	1151124
Matrix:	Soil	**Analytical Method:**	SW8082A	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474923
Units:	ug/Kg						

Parameters	MDL	PQL	Method Blank Conc.	Spike Conc.	LCS % Recovery	LCSD % Recovery	LCS/LCSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Aroclor1016	53	100	ND	600	85.3	96.8	12.6	25 - 145	30	
Aroclor1260	36	100	ND	600	78.3	93.5	17.7	30 - 145	30	
TCMX (S)				0.10	82.0	102		48 - 125		
DCBP (S)				0.10	80.0	88.0		48 - 135		

Torrent LABORATORY, INC.

MS/MSD Summary Report

Raw values are used in quality control assessment.

Work Order:	2305124	**Prep Method:**	3546_PCB	**Prep Date:**	05/19/23	**Prep Batch:**	1151124
Matrix:	**Soil**	**Analytical Method:**	SW8082A	**Analyzed Date:**	5/19/2023	**Analytical Batch:**	474923
Spiked Sample:	2305124-002A						
Units:	ug/Kg						

Parameters	MDL	PQL	Sample Conc.	Spike Conc.	MS % Recovery	MSD % Recovery	MS/MSD % RPD	% Recovery Limits	% RPD Limits	Lab Qualifier
Aroclor1016	53.0	100	ND	600	75.8	61.3	21.1	25 - 145	30	
Aroclor1260	36.0	100	ND	600	64.3	54.2	17.2	30 - 145	30	
TCMX (S)				0.10	71.0	59.0		48 - 125		
DCBP (S)				0.10	65.0	55.0		48 - 135		

Laboratory Qualifiers and Definitions

DEFINITIONS:

Accuracy/Bias (% Recovery) - The closeness of agreement between an observed value and an accepted reference value.
Blank (Method/Preparation Blank) -MB/PB - An analyte-free matrix to which all reagents are added in the same volumes/proportions as used in sample processing. The method blank is used to document contamination resulting from the analytical process.
Duplicate - a field sample and/or laboratory QC sample prepared in duplicate following all of the same processes and procedures used on the original sample (sample duplicate, LCSD, MSD)
Laboratory Control Sample (LCS ad LCSD) - A known matrix spiked with compounds representative of the target analyte(s). This is used to document laboratory performance.
Matrix - the component or substrate that contains the analyte of interest (e.g., - groundwater, sediment, soil, waste water, etc)
Matrix Spike (MS/MSD) - Client sample spiked with identical concentrations of target analyte (s). The spiking occurs prior to the sample preparation and analysis. They are used to document the precision and bias of a method in a given sample matrix.
Method Detection Limit (MDL) - the minimum concentration of a substance that can be measured and reported with a 99% confidence that the analyte concentration is greater than zero
Practical Quantitation Limit/Reporting Limit/Limit of Quantitation (PQL/RL/LOQ) - a laboratory determined value at 2 to 5 times above the MDL that can be reproduced in a manner that results in a 99% confidence level that the result is both accurate and precise. PQLs/RLs/LODs reflect all preparation factors and/or dilution factors that have been applied to the sample during the preparation and/or analytical processes.
Precision (%RPD) - The agreement among a set of replicate/duplicate measurements without regard to known value of the replicates
Surrogate (S) or (Surr) - An organic compound which is similar to the target analyte(s) in chemical composition and behavior in the analytical process, but which is not normally found in environmental samples. Surrogates are used in most organic analysis to demonstrate matrix compatibility with the chosen method of analysis
Tentatively Identified Compound (TIC) - A compound not contained within the analytical calibration standards but present in the GCMS library of defined compounds. When the library is searched for an unknown compound, it can frequently give a tentative identification to the compound based on retention time and primary and secondary ion match. TICs are reported as estimates and are candidates for further investigation.
Units: the unit of measure used to express the reported result - **mg/L** and ***mg/Kg*** (equivalent to PPM - parts per million in **liquid** and ***solid***), **ug/L** and ***ug/Kg*** (equivalent to PPB - parts per billion in **liquid** and ***solid***), **ug/m3**, ***mg/m3***, **ppbv** and ***ppmv*** (all units of measure for reporting concentrations in air), **%** (equivalent to 10000 ppm or 1,000,000 ppb), **ug/Wipe** (concentration found on the surface of a single Wipe usually taken over a 100cm2 surface)

LABORATORY QUALIFIERS:

B - Indicates when the analyte is found in the associated method or preparation blank
D - Surrogate is not recoverable due to the necessary dilution of the sample
E - Indicates the reportable value is outside of the calibration range of the instrument but within the linear range of the instrument (unless otherwise noted) Values reported with an E qualifier should be considered as estimated.
H- Indicates that the recommended holding time for the analyte or compound has been exceeded
J- Indicates a value between the method MDL and PQL and that the reported concentration should be considered as estimated rather the quantitative
NA - Not Analyzed
N/A - Not Applicable
ND - Not Detected at a concentration greater than the PQL/RL or, if reported to the MDL, at greater than the MDL.
NR - Not recoverable - a matrix spike concentration is not recoverable due to a concentration within the original sample that is greater than four times the spike concentration added
R- The % RPD between a duplicate set of samples is outside of the absolute values established by laboratory control charts
S- Spike recovery is outside of established method and/or laboratory control limits. Further explanation of the use of this qualifier should be included within a case narrative
X -Used to indicate that a value based on pattern identification is within the pattern range but not typical of the pattern found in standards. Further explanation may or may not be provided within the sample footnote and/or the case narrative.

Torrent LABORATORY, INC.

Sample Receipt Checklist

Client Name: Langan

Project Name: VERNON

Work Order No.: 2305124

Date and Time Received: 5/13/2023 11:52:00AM

Received By: Linda

Physically Logged By: Tammy

Checklist Completed By: Nutan Kabir

Carrier Name: FedEx

Chain of Custody (COC) Information

Chain of custody present?	Yes
Chain of custody signed when relinquished and received?	Yes
Chain of custody agrees with sample labels?	Yes
Custody seals intact on sample bottles?	Not Present

Sample Receipt Information

Custody seals intact on shipping container/cooler?	Not Present
Shipping Container/Cooler In Good Condition?	Yes
Samples in proper container/bottle?	Yes
Samples containers intact?	Yes
Sufficient sample volume for indicated test?	Yes

Sample Preservation and Hold Time (HT) Information

All samples received within holding time?	Yes
Container/Temp Blank temperature in compliance?	Temperature: 1.0 °C
Water-VOA vials have zero headspace?	No VOA vials submitted
Water-pH acceptable upon receipt?	N/A

pH Checked by: na

pH Adjusted by: na

Comments:

Torrent LABORATORY, INC.

Login Summary Report

Client ID:	TL5493	Langan	**QC Level:**	II
Project Name:	VERNON		**TAT Requested:**	5+ day:5
Project # :	721040501		**Date Received:**	5/13/2023
Report Due Date:	5/22/2023		**Time Received:**	11:52 am

Comments:

Work Order # : ***2305124***

WO Sample ID	Client Sample ID	Collection Date/Time	Matrix	Scheduled Disposal	Sample On Hold	Test On Hold	Requested Tests	Subbed
2305124-001A	CS-01	05/12/23 12:15	Soil	11/08/23			PCBs_S_8082A	
2305124-002A	CS-02	05/12/23 12:40	Soil	11/08/23			PCBs_S_8082A	
2305124-003A	CS-03	05/12/23 13:03	Soil	11/08/23			PCBs_S_8082A	
2305124-004A	CS-04	05/12/23 11:24	Soil	11/08/23			PCBs_S_8082A	
2305124-005A	CS-05	05/12/23 10:56	Soil	11/08/23			PCBs_S_8082A	
2305124-006A	CS-06	05/12/23 13:30	Soil	11/08/23			PCBs_S_8082A	

Torrent LABORATORY, INC.

Pace ANALYTICAL SERVICES

4100 Atlas Ct. – Bakersfield, CA 93308 – 661.327.4911 – Fax: 661.327.1918 – www.pacelabs.com

Chain of Custody Form

2305124 Page 1 of 1

Report To: Client: LANGAN	Project #: 72140501
Attn: NICK CUTLER	Project Name: VERNON
Street Address: 515 S. FLOWER ST	BID#
City, State, Zip: LA, CA, 90071	Sampler(s) Name Printed: MELODY CHE
Phone: 213 280 9[illegible] Fax:	MELISSIA CHAMBERS
Email: NCUTLER AND MCHE @ LANGAN.com	
Work Order #:	

Analysis Requested: PCB 8082

Comments:

Sample #	Description	Date Sampled	Time Sampled	Soil	Sludge	Drinking Water	Ground Water	Waste Water	Other	Notes
001A	CS-01	5/12/23	1215	✓					Concrete	
002A	CS-02	5/12/23	1240	✓					✓	
003A	CS-03	5/12/23	1303	✓					✓	
004A	CS-04	5/12/23	1124	✓					✓	
005A	CS-05	5/12/23	1056	✓					✓	
006A	CS-06	5/12/23	1330	✓					✓	
										Temp @ -1.3

Sample Matrix: Soil, Sludge, Drinking Water, Ground Water, Waste Water, Other

Result Request **Surcharge: ☐ STD (10 Day) ☑ 5 Day** ☐ 4 Day** ☐ 3 Day** ☐ 2 Day** ☐ 1 Day** Rush requests must be approved

Billing ☑ Same as above

Client: _____

Address: _____

City: _____ State ____ Zip ____

Attn: _____

P.O. #: _____

System # (Needed for CLIP)

GIS/Key ☐ Well Star ☐

EDF Required Geotracker ☐ Yes ☐ No

Global ID: LINDA ATIENZA

	Date	Time		Date	Time
1. Relinquished By: Melody Che	5/11/23	1400	1. Received By: [signature]	5/13/23	11:52am
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By		

Pace Analytical Bakersfield does not accept samples containing radioactive material above background levels. Samples containing radioactive material must be disclosed prior to receipt. Any samples suspected of containing radioactive material above background levels will not be accepted and will be returned to client.

REV 12/2021

APPENDIX C

(Adopted May 7, 1976) (Amended November 6, 1992)
(Amended July 9, 1993) (Amended February 14, 1997)
(Amended December 11, 1998)(Amended April 2, 2004)
(Amended June 3, 2005)

RULE 403. FUGITIVE DUST

(a) Purpose

The purpose of this Rule is to reduce the amount of particulate matter entrained in the ambient air as a result of anthropogenic (man-made) fugitive dust sources by requiring actions to prevent, reduce or mitigate fugitive dust emissions.

(b) Applicability

The provisions of this Rule shall apply to any activity or man-made condition capable of generating fugitive dust.

(c) Definitions

(1) ACTIVE OPERATIONS means any source capable of generating fugitive dust, including, but not limited to, earth-moving activities, construction/demolition activities, disturbed surface area, or heavy- and light-duty vehicular movement.

(2) AGGREGATE-RELATED PLANTS are defined as facilities that produce and / or mix sand and gravel and crushed stone.

(3) AGRICULTURAL HANDBOOK means the region-specific guidance document that has been approved by the Governing Board or hereafter approved by the Executive Officer and the U.S. EPA. For the South Coast Air Basin, the Board-approved region-specific guidance document is the Rule 403 Agricultural Handbook dated December 1998. For the Coachella Valley, the Board-approved region-specific guidance document is the Rule 403 Coachella Valley Agricultural Handbook dated April 2, 2004.

(4) ANEMOMETERS are devices used to measure wind speed and direction in accordance with the performance standards, and maintenance and calibration criteria as contained in the most recent Rule 403 Implementation Handbook.

(5) BEST AVAILABLE CONTROL MEASURES means fugitive dust control actions that are set forth in Table 1 of this Rule.

(6) BULK MATERIAL is sand, gravel, soil, aggregate material less than two inches in length or diameter, and other organic or inorganic particulate matter.

(7) CEMENT MANUFACTURING FACILITY is any facility that has a cement kiln at the facility.

(8) CHEMICAL STABILIZERS are any non-toxic chemical dust suppressant which must not be used if prohibited for use by the Regional Water Quality Control Boards, the California Air Resources Board, the U.S. Environmental Protection Agency (U.S. EPA), or any applicable law, rule or regulation. The chemical stabilizers shall meet any specifications, criteria, or tests required by any federal, state, or local water agency. Unless otherwise indicated, the use of a non-toxic chemical stabilizer shall be of sufficient concentration and application frequency to maintain a stabilized surface.

(9) COMMERCIAL POULTRY RANCH means any building, structure, enclosure, or premises where more than 100 fowl are kept or maintained for the primary purpose of producing eggs or meat for sale or other distribution.

(10) CONFINED ANIMAL FACILITY means a source or group of sources of air pollution at an agricultural source for the raising of 3,360 or more fowl or 50 or more animals, including but not limited to, any structure, building, installation, farm, corral, coop, feed storage area, milking parlor, or system for the collection, storage, or distribution of solid and liquid manure; if domesticated animals, including horses, sheep, goats, swine, beef cattle, rabbits, chickens, turkeys, or ducks are corralled, penned, or otherwise caused to remain in restricted areas for commercial agricultural purposes and feeding is by means other than grazing.

(11) CONSTRUCTION/DEMOLITION ACTIVITIES means any on-site mechanical activities conducted in preparation of, or related to, the building, alteration, rehabilitation, demolition or improvement of property, including, but not limited to the following activities: grading, excavation, loading, crushing, cutting, planing, shaping or ground breaking.

(12) CONTRACTOR means any person who has a contractual arrangement to conduct an active operation for another person.

(13) DAIRY FARM is an operation on a property, or set of properties that are contiguous or separated only by a public right-of-way, that raises cows or

produces milk from cows for the purpose of making a profit or for a livelihood. Heifer and calf farms are dairy farms.

(14) DISTURBED SURFACE AREA means a portion of the earth's surface which has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed natural soil condition, thereby increasing the potential for emission of fugitive dust. This definition excludes those areas which have:

(A) been restored to a natural state, such that the vegetative ground cover and soil characteristics are similar to adjacent or nearby natural conditions;

(B) been paved or otherwise covered by a permanent structure; or

(C) sustained a vegetative ground cover of at least 70 percent of the native cover for a particular area for at least 30 days.

(15) DUST SUPPRESSANTS are water, hygroscopic materials, or non-toxic chemical stabilizers used as a treatment material to reduce fugitive dust emissions.

(16) EARTH-MOVING ACTIVITIES means the use of any equipment for any activity where soil is being moved or uncovered, and shall include, but not be limited to the following: grading, earth cutting and filling operations, loading or unloading of dirt or bulk materials, adding to or removing from open storage piles of bulk materials, landfill operations, weed abatement through disking, and soil mulching.

(17) DUST CONTROL SUPERVISOR means a person with the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule 403 requirements at an active operation.

(18) FUGITIVE DUST means any solid particulate matter that becomes airborne, other than that emitted from an exhaust stack, directly or indirectly as a result of the activities of any person.

(19) HIGH WIND CONDITIONS means that instantaneous wind speeds exceed 25 miles per hour.

(20) INACTIVE DISTURBED SURFACE AREA means any disturbed surface area upon which active operations have not occurred or are not expected to occur for a period of 20 consecutive days.

(21) LARGE OPERATIONS means any active operations on property which contains 50 or more acres of disturbed surface area; or any earth-moving operation with a daily earth-moving or throughput volume of 3,850 cubic

meters (5,000 cubic yards) or more three times during the most recent 365-day period.

(22) OPEN STORAGE PILE is any accumulation of bulk material, which is not fully enclosed, covered or chemically stabilized, and which attains a height of three feet or more and a total surface area of 150 or more square feet.

(23) PARTICULATE MATTER means any material, except uncombined water, which exists in a finely divided form as a liquid or solid at standard conditions.

(24) PAVED ROAD means a public or private improved street, highway, alley, public way, or easement that is covered by typical roadway materials, but excluding access roadways that connect a facility with a public paved roadway and are not open to through traffic. Public paved roads are those open to public access and that are owned by any federal, state, county, municipal or any other governmental or quasi-governmental agencies. Private paved roads are any paved roads not defined as public.

(25) PM_{10} means particulate matter with an aerodynamic diameter smaller than or equal to 10 microns as measured by the applicable State and Federal reference test methods.

(26) PROPERTY LINE means the boundaries of an area in which either a person causing the emission or a person allowing the emission has the legal use or possession of the property. Where such property is divided into one or more sub-tenancies, the property line(s) shall refer to the boundaries dividing the areas of all sub-tenancies.

(27) RULE 403 IMPLEMENTATION HANDBOOK means a guidance document that has been approved by the Governing Board on April 2, 2004 or hereafter approved by the Executive Officer and the U.S. EPA.

(28) SERVICE ROADS are paved or unpaved roads that are used by one or more public agencies for inspection or maintenance of infrastructure and which are not typically used for construction-related activity.

(29) SIMULTANEOUS SAMPLING means the operation of two PM_{10} samplers in such a manner that one sampler is started within five minutes of the other, and each sampler is operated for a consecutive period which must be not less than 290 minutes and not more than 310 minutes.

(30) SOUTH COAST AIR BASIN means the non-desert portions of Los Angeles, Riverside, and San Bernardino counties and all of Orange

County as defined in California Code of Regulations, Title 17, Section 60104. The area is bounded on the west by the Pacific Ocean, on the north and east by the San Gabriel, San Bernardino, and San Jacinto Mountains, and on the south by the San Diego county line.

(31) STABILIZED SURFACE means any previously disturbed surface area or open storage pile which, through the application of dust suppressants, shows visual or other evidence of surface crusting and is resistant to wind-driven fugitive dust and is demonstrated to be stabilized. Stabilization can be demonstrated by one or more of the applicable test methods contained in the Rule 403 Implementation Handbook.

(32) TRACK-OUT means any bulk material that adheres to and agglomerates on the exterior surface of motor vehicles, haul trucks, and equipment (including tires) that have been released onto a paved road and can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.

(33) TYPICAL ROADWAY MATERIALS means concrete, asphaltic concrete, recycled asphalt, asphalt, or any other material of equivalent performance as determined by the Executive Officer, and the U.S. EPA.

(34) UNPAVED ROADS means any unsealed or unpaved roads, equipment paths, or travel ways that are not covered by typical roadway materials. Public unpaved roads are any unpaved roadway owned by federal, state, county, municipal or other governmental or quasi-governmental agencies. Private unpaved roads are all other unpaved roadways not defined as public.

(35) VISIBLE ROADWAY DUST means any sand, soil, dirt, or other solid particulate matter which is visible upon paved road surfaces and which can be removed by a vacuum sweeper or a broom sweeper under normal operating conditions.

(36) WIND-DRIVEN FUGITIVE DUST means visible emissions from any disturbed surface area which is generated by wind action alone.

(37) WIND GUST is the maximum instantaneous wind speed as measured by an anemometer.

(d) Requirements

(1) No person shall cause or allow the emissions of fugitive dust from any active operation, open storage pile, or disturbed surface area such that:

(A) the dust remains visible in the atmosphere beyond the property line of the emission source; or

(B) the dust emission exceeds 20 percent opacity (as determined by the appropriate test method included in the Rule 403 Implementation Handbook), if the dust emission is the result of movement of a motorized vehicle.

(2) No person shall conduct active operations without utilizing the applicable best available control measures included in Table 1 of this Rule to minimize fugitive dust emissions from each fugitive dust source type within the active operation.

(3) No person shall cause or allow PM_{10} levels to exceed 50 micrograms per cubic meter when determined, by simultaneous sampling, as the difference between upwind and downwind samples collected on high-volume particulate matter samplers or other U.S. EPA-approved equivalent method for PM_{10} monitoring. If sampling is conducted, samplers shall be:

(A) Operated, maintained, and calibrated in accordance with 40 Code of Federal Regulations (CFR), Part 50, Appendix J, or appropriate U.S. EPA-published documents for U.S. EPA-approved equivalent method(s) for PM_{10}.

(B) Reasonably placed upwind and downwind of key activity areas and as close to the property line as feasible, such that other sources of fugitive dust between the sampler and the property line are minimized.

(4) No person shall allow track-out to extend 25 feet or more in cumulative length from the point of origin from an active operation. Notwithstanding the preceding, all track-out from an active operation shall be removed at the conclusion of each workday or evening shift.

(5) No person shall conduct an active operation with a disturbed surface area of five or more acres, or with a daily import or export of 100 cubic yards or more of bulk material without utilizing at least one of the measures listed in subparagraphs (d)(5)(A) through (d)(5)(E) at each vehicle egress from the site to a paved public road.

(A) Install a pad consisting of washed gravel (minimum-size: one inch) maintained in a clean condition to a depth of at least six inches and extending at least 30 feet wide and at least 50 feet long.

(B) Pave the surface extending at least 100 feet and at least 20 feet wide.

(C) Utilize a wheel shaker/wheel spreading device consisting of raised dividers (rails, pipe, or grates) at least 24 feet long and 10 feet wide to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.

(D) Install and utilize a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the site.

(E) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the actions specified in subparagraphs (d)(5)(A) through (d)(5)(D).

(6) Beginning January 1, 2006, any person who operates or authorizes the operation of a confined animal facility subject to this Rule shall implement the applicable conservation management practices specified in Table 4 of this Rule.

(e) Additional Requirements for Large Operations

(1) Any person who conducts or authorizes the conducting of a large operation subject to this Rule shall implement the applicable actions specified in Table 2 of this Rule at all times and shall implement the applicable actions specified in Table 3 of this Rule when the applicable performance standards can not be met through use of Table 2 actions; and shall:

(A) submit a fully executed Large Operation Notification (Form 403 N) to the Executive Officer within 7 days of qualifying as a large operation;

(B) include, as part of the notification, the name(s), address(es), and phone number(s) of the person(s) responsible for the submittal, and a description of the operation(s), including a map depicting the location of the site;

(C) maintain daily records to document the specific dust control actions taken, maintain such records for a period of not less than three years; and make such records available to the Executive Officer upon request;

(D) install and maintain project signage with project contact signage that meets the minimum standards of the Rule 403 Implementation Handbook, prior to initiating any earthmoving activities;

(E) identify a dust control supervisor that:

(i) is employed by or contracted with the property owner or developer;

(ii) is on the site or available on-site within 30 minutes during working hours;

(iii) has the authority to expeditiously employ sufficient dust mitigation measures to ensure compliance with all Rule requirements;

(iv) has completed the AQMD Fugitive Dust Control Class and has been issued a valid Certificate of Completion for the class; and

(F) notify the Executive Officer in writing within 30 days after the site no longer qualifies as a large operation as defined by paragraph (c)(18).

(2) Any Large Operation Notification submitted to the Executive Officer or AQMD-approved dust control plan shall be valid for a period of one year from the date of written acceptance by the Executive Officer. Any Large Operation Notification accepted pursuant to paragraph (e)(1), excluding those submitted by aggregate-related plants and cement manufacturing facilities must be resubmitted annually by the person who conducts or authorizes the conducting of a large operation, at least 30 days prior to the expiration date, or the submittal shall no longer be valid as of the expiration date. If all fugitive dust sources and corresponding control measures or special circumstances remain identical to those identified in the previously accepted submittal or in an AQMD-approved dust control plan, the resubmittal may be a simple statement of no-change (Form 403NC).

(f) Compliance Schedule

The newly amended provisions of this Rule shall become effective upon adoption. Pursuant to subdivision (e), any existing site that qualifies as a large operation will have 60 days from the date of Rule adoption to comply with the notification and recordkeeping requirements for large operations. Any Large Operation

Notification or AQMD-approved dust control plan which has been accepted prior to the date of adoption of these amendments shall remain in effect and the Large Operation Notification or AQMD-approved dust control plan annual resubmittal date shall be one year from adoption of this Rule amendment.

(g) Exemptions

(1) The provisions of this Rule shall not apply to:

(A) Dairy farms.

(B) Confined animal facilities provided that the combined disturbed surface area within one continuous property line is one acre or less.

(C) Agricultural vegetative crop operations provided that the combined disturbed surface area within one continuous property line and not separated by a paved public road is 10 acres or less.

(D) Agricultural vegetative crop operations within the South Coast Air Basin, whose combined disturbed surface area includes more than 10 acres provided that the person responsible for such operations:

(i) voluntarily implements the conservation management practices contained in the Rule 403 Agricultural Handbook;

(ii) completes and maintains the self-monitoring form documenting sufficient conservation management practices, as described in the Rule 403 Agricultural Handbook; and

(iii) makes the completed self-monitoring form available to the Executive Officer upon request.

(E) Agricultural vegetative crop operations outside the South Coast Air Basin whose combined disturbed surface area includes more than 10 acres provided that the person responsible for such operations:

(i) voluntarily implements the conservation management practices contained in the Rule 403 Coachella Valley Agricultural Handbook; and

(ii) completes and maintains the self-monitoring form documenting sufficient conservation management practices, as described in the Rule 403 Coachella Valley Agricultural Handbook; and

(iii) makes the completed self-monitoring form available to the Executive Officer upon request.

(F) Active operations conducted during emergency life-threatening situations, or in conjunction with any officially declared disaster or state of emergency.

(G) Active operations conducted by essential service utilities to provide electricity, natural gas, telephone, water and sewer during periods of service outages and emergency disruptions.

(H) Any contractor subsequent to the time the contract ends, provided that such contractor implemented the required control measures during the contractual period.

(I) Any grading contractor, for a phase of active operations, subsequent to the contractual completion of that phase of earth-moving activities, provided that the required control measures have been implemented during the entire phase of earth-moving activities, through and including five days after the final grading inspection.

(J) Weed abatement operations ordered by a county agricultural commissioner or any state, county, or municipal fire department, provided that:

(i) mowing, cutting or other similar process is used which maintains weed stubble at least three inches above the soil; and

(ii) any discing or similar operation which cuts into and disturbs the soil, where watering is used prior to initiation of these activities, and a determination is made by the agency issuing the weed abatement order that, due to fire hazard conditions, rocks, or other physical obstructions, it is not practical to meet the conditions specified in clause (g)(1)(H)(i). The provisions this clause shall not exempt the owner of any property from stabilizing, in accordance with paragraph (d)(2), disturbed surface areas which have been created as a result of the weed abatement actions.

(K) sandblasting operations.

(2) The provisions of paragraphs (d)(1) and (d)(3) shall not apply:

(A) When wind gusts exceed 25 miles per hour, provided that:

(i) The required Table 3 contingency measures in this Rule are implemented for each applicable fugitive dust source type, and;

(ii) records are maintained in accordance with subparagraph (e)(1)(C).

(B) To unpaved roads, provided such roads:

(i) are used solely for the maintenance of wind-generating equipment; or

(ii) are unpaved public alleys as defined in Rule 1186; or

(iii) are service roads that meet all of the following criteria:

(a) are less than 50 feet in width at all points along the road;

(b) are within 25 feet of the property line; and

(c) have a traffic volume less than 20 vehicle-trips per day.

(C) To any active operation, open storage pile, or disturbed surface area for which necessary fugitive dust preventive or mitigative actions are in conflict with the federal Endangered Species Act, as determined in writing by the State or federal agency responsible for making such determinations.

(3) The provisions of (d)(2) shall not apply to any aggregate-related plant or cement manufacturing facility that implements the applicable actions specified in Table 2 of this Rule at all times and shall implement the applicable actions specified in Table 3 of this Rule when the applicable performance standards of paragraphs (d)(1) and (d)(3) can not be met through use of Table 2 actions.

(4) The provisions of paragraphs (d)(1), (d)(2), and (d)(3) shall not apply to:

(A) Blasting operations which have been permitted by the California Division of Industrial Safety; and

(B) Motion picture, television, and video production activities when dust emissions are required for visual effects. In order to obtain this exemption, the Executive Officer must receive notification in writing at least 72 hours in advance of any such activity and no nuisance results from such activity.

(5) The provisions of paragraph (d)(3) shall not apply if the dust control actions, as specified in Table 2, are implemented on a routine basis for

each applicable fugitive dust source type. To qualify for this exemption, a person must maintain records in accordance with subparagraph (e)(1)(C).

(6) The provisions of paragraph (d)(4) shall not apply to earth coverings of public paved roadways where such coverings are approved by a local government agency for the protection of the roadway, and where such coverings are used as roadway crossings for haul vehicles provided that such roadway is closed to through traffic and visible roadway dust is removed within one day following the cessation of activities.

(7) The provisions of subdivision (e) shall not apply to:

(A) officially-designated public parks and recreational areas, including national parks, national monuments, national forests, state parks, state recreational areas, and county regional parks.

(B) any large operation which is required to submit a dust control plan to any city or county government which has adopted a District-approved dust control ordinance.

(C) any large operation subject to Rule 1158, which has an approved dust control plan pursuant to Rule 1158, provided that all sources of fugitive dust are included in the Rule 1158 plan.

(8) The provisions of subparagraph (e)(1)(A) through (e)(1)(C) shall not apply to any large operation with an AQMD-approved fugitive dust control plan provided that there is no change to the sources and controls as identified in the AQMD-approved fugitive dust control plan.

(h) Fees

Any person conducting active operations for which the Executive Officer conducts upwind/downwind monitoring for PM_{10} pursuant to paragraph (d)(3) shall be assessed applicable Ambient Air Analysis Fees pursuant to Rule 304.1. Applicable fees shall be waived for any facility which is exempted from paragraph (d)(3) or meets the requirements of paragraph (d)(3).

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Backfilling	01-1 Stabilize backfill material when not actively handling; and 01-2 Stabilize backfill material during handling; and 01-3 Stabilize soil at completion of activity.	✓ Mix backfill soil with water prior to moving ✓ Dedicate water truck or high capacity hose to backfilling equipment ✓ Empty loader bucket slowly so that no dust plumes are generated ✓ Minimize drop height from loader bucket
Clearing and grubbing	02-1 Maintain stability of soil through pre-watering of site prior to clearing and grubbing; and 02-2 Stabilize soil during clearing and grubbing activities; and 02-3 Stabilize soil immediately after clearing and grubbing activities.	✓ Maintain live perennial vegetation where possible ✓ Apply water in sufficient quantity to prevent generation of dust plumes
Clearing forms	03-1 Use water spray to clear forms; or 03-2 Use sweeping and water spray to clear forms; or 03-3 Use vacuum system to clear forms.	✓ Use of high pressure air to clear forms may cause exceedance of Rule requirements
Crushing	04-1 Stabilize surface soils prior to operation of support equipment; and 04-2 Stabilize material after crushing.	✓ Follow permit conditions for crushing equipment ✓ Pre-water material prior to loading into crusher ✓ Monitor crusher emissions opacity ✓ Apply water to crushed material to prevent dust plumes

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Cut and fill	05-1 Pre-water soils prior to cut and fill activities; and 05-2 Stabilize soil during and after cut and fill activities.	✓ For large sites, pre-water with sprinklers or water trucks and allow time for penetration ✓ Use water trucks/pulls to water soils to depth of cut prior to subsequent cuts
Demolition – mechanical/manual	06-1 Stabilize wind erodible surfaces to reduce dust; and 06-2 Stabilize surface soil where support equipment and vehicles will operate; and 06-3 Stabilize loose soil and demolition debris; and 06-4 Comply with AQMD Rule 1403.	✓ Apply water in sufficient quantities to prevent the generation of visible dust plumes
Disturbed soil	07-1 Stabilize disturbed soil throughout the construction site; and 07-2 Stabilize disturbed soil between structures	✓ Limit vehicular traffic and disturbances on soils where possible ✓ If interior block walls are planned, install as early as possible ✓ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes
Earth-moving activities	08-1 Pre-apply water to depth of proposed cuts; and 08-2 Re-apply water as necessary to maintain soils in a damp condition and to ensure that visible emissions do not exceed 100 feet in any direction; and 08-3 Stabilize soils once earth-moving activities are complete.	✓ Grade each project phase separately, timed to coincide with construction phase ✓ Upwind fencing can prevent material movement on site ✓ Apply water or a stabilizing agent in sufficient quantities to prevent the generation of visible dust plumes

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Importing/exporting of bulk materials	09-1 Stabilize material while loading to reduce fugitive dust emissions; and 09-2 Maintain at least six inches of freeboard on haul vehicles; and 09-3 Stabilize material while transporting to reduce fugitive dust emissions; and 09-4 Stabilize material while unloading to reduce fugitive dust emissions; and 09-5 Comply with Vehicle Code Section 23114.	✓ Use tarps or other suitable enclosures on haul trucks ✓ Check belly-dump truck seals regularly and remove any trapped rocks to prevent spillage ✓ Comply with track-out prevention/mitigation requirements ✓ Provide water while loading and unloading to reduce visible dust plumes
Landscaping	10-1 Stabilize soils, materials, slopes	✓ Apply water to materials to stabilize ✓ Maintain materials in a crusted condition ✓ Maintain effective cover over materials ✓ Stabilize sloping surfaces using soil binders until vegetation or ground cover can effectively stabilize the slopes ✓ Hydroseed prior to rain season
Road shoulder maintenance	11-1 Apply water to unpaved shoulders prior to clearing; and 11-2 Apply chemical dust suppressants and/or washed gravel to maintain a stabilized surface after completing road shoulder maintenance.	✓ Installation of curbing and/or paving of road shoulders can reduce recurring maintenance costs ✓ Use of chemical dust suppressants can inhibit vegetation growth and reduce future road shoulder maintenance costs

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Screening	12-1 Pre-water material prior to screening; and 12-2 Limit fugitive dust emissions to opacity and plume length standards; and 12-3 Stabilize material immediately after screening.	✓ Dedicate water truck or high capacity hose to screening operation ✓ Drop material through the screen slowly and minimize drop height ✓ Install wind barrier with a porosity of no more than 50% upwind of screen to the height of the drop point
Staging areas	13-1 Stabilize staging areas during use; and 13-2 Stabilize staging area soils at project completion.	✓ Limit size of staging area ✓ Limit vehicle speeds to 15 miles per hour ✓ Limit number and size of staging area entrances/exists
Stockpiles/ Bulk Material Handling	14-1 Stabilize stockpiled materials. 14-2 Stockpiles within 100 yards of off-site occupied buildings must not be greater than eight feet in height; or must have a road bladed to the top to allow water truck access or must have an operational water irrigation system that is capable of complete stockpile coverage.	✓ Add or remove material from the downwind portion of the storage pile ✓ Maintain storage piles to avoid steep sides or faces

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Traffic areas for construction activities	15-1 Stabilize all off-road traffic and parking areas; and 15-2 Stabilize all haul routes; and 15-3 Direct construction traffic over established haul routes.	✓ Apply gravel/paving to all haul routes as soon as possible to all future roadway areas ✓ Barriers can be used to ensure vehicles are only used on established parking areas/haul routes
Trenching	16-1 Stabilize surface soils where trencher or excavator and support equipment will operate; and 16-2 Stabilize soils at the completion of trenching activities.	✓ Pre-watering of soils prior to trenching is an effective preventive measure. For deep trenching activities, pre-trench to 18 inches soak soils via the pre-trench and resuming trenching ✓ Washing mud and soils from equipment at the conclusion of trenching activities can prevent crusting and drying of soil on equipment
Truck loading	17-1 Pre-water material prior to loading; and 17-2 Ensure that freeboard exceeds six inches (CVC 23114)	✓ Empty loader bucket such that no visible dust plumes are created ✓ Ensure that the loader bucket is close to the truck to minimize drop height while loading
Turf Overseeding	18-1 Apply sufficient water immediately prior to conducting turf vacuuming activities to meet opacity and plume length standards; and 18-2 Cover haul vehicles prior to exiting the site.	✓ Haul waste material immediately off-site

TABLE 1
BEST AVAILABLE CONTROL MEASURES
(Applicable to All Construction Activity Sources)

Source Category	Control Measure	Guidance
Unpaved roads/parking lots	19-1 Stabilize soils to meet the applicable performance standards; and 19-2 Limit vehicular travel to established unpaved roads (haul routes) and unpaved parking lots.	✓ Restricting vehicular access to established unpaved travel paths and parking lots can reduce stabilization requirements
Vacant land	20-1 In instances where vacant lots are 0.10 acre or larger and have a cumulative area of 500 square feet or more that are driven over and/or used by motor vehicles and/or off-road vehicles, prevent motor vehicle and/or off-road vehicle trespassing, parking and/or access by installing barriers, curbs, fences, gates, posts, signs, shrubs, trees or other effective control measures.	

Table 2
DUST CONTROL MEASURES FOR LARGE OPERATIONS

FUGITIVE DUST SOURCE CATEGORY		CONTROL ACTIONS
Earth-moving (except construction cutting and filling areas, and mining operations)	(1a)	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations each subsequent four-hour period of active operations; OR
	(1a-1)	For any earth-moving which is more than 100 feet from all property lines, conduct watering as necessary to prevent visible dust emissions from exceeding 100 feet in length in any direction.
Earth-moving: Construction fill areas:	(1b)	Maintain soil moisture content at a minimum of 12 percent, as determined by ASTM method D-2216, or other equivalent method approved by the Executive Officer, the California Air Resources Board, and the U.S. EPA. For areas which have an optimum moisture content for compaction of less than 12 percent, as determined by ASTM Method 1557 or other equivalent method approved by the Executive Officer and the California Air Resources Board and the U.S. EPA, complete the compaction process as expeditiously as possible after achieving at least 70 percent of the optimum soil moisture content. Two soil moisture evaluations must be conducted during the first three hours of active operations during a calendar day, and two such evaluations during each subsequent four-hour period of active operations.

Table 2 (Continued)

FUGITIVE DUST SOURCE CATEGORY	CONTROL ACTIONS	
Earth-moving: Construction cut areas and mining operations:	(1c)	Conduct watering as necessary to prevent visible emissions from extending more than 100 feet beyond the active cut or mining area unless the area is inaccessible to watering vehicles due to slope conditions or other safety factors.
Disturbed surface areas (except completed grading areas)	(2a/b)	Apply dust suppression in sufficient quantity and frequency to maintain a stabilized surface. Any areas which cannot be stabilized, as evidenced by wind driven fugitive dust must have an application of water at least twice per day to at least 80 percent of the unstabilized area.
Disturbed surface areas: Completed grading areas	(2c)	Apply chemical stabilizers within five working days of grading completion; OR
	(2d)	Take actions (3a) or (3c) specified for inactive disturbed surface areas.
Inactive disturbed surface areas	(3a)	Apply water to at least 80 percent of all inactive disturbed surface areas on a daily basis when there is evidence of wind driven fugitive dust, excluding any areas which are inaccessible to watering vehicles due to excessive slope or other safety conditions; OR
	(3b)	Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR
	(3c)	Establish a vegetative ground cover within 21 days after active operations have ceased. Ground cover must be of sufficient density to expose less than 30 percent of unstabilized ground within 90 days of planting, and at all times thereafter; OR
	(3d)	Utilize any combination of control actions (3a), (3b), and (3c) such that, in total, these actions apply to all inactive disturbed surface areas.

Table 2 (Continued)

FUGITIVE DUST SOURCE CATEGORY	CONTROL ACTIONS	
Unpaved Roads	(4a)	Water all roads used for any vehicular traffic at least once per every two hours of active operations [3 times per normal 8 hour work day]; OR
	(4b)	Water all roads used for any vehicular traffic once daily and restrict vehicle speeds to 15 miles per hour; OR
	(4c)	Apply a chemical stabilizer to all unpaved road surfaces in sufficient quantity and frequency to maintain a stabilized surface.
Open storage piles	(5a)	Apply chemical stabilizers; OR
	(5b)	Apply water to at least 80 percent of the surface area of all open storage piles on a daily basis when there is evidence of wind driven fugitive dust; OR
	(5c)	Install temporary coverings; OR
	(5d)	Install a three-sided enclosure with walls with no more than 50 percent porosity which extend, at a minimum, to the top of the pile. This option may only be used at aggregate-related plants or at cement manufacturing facilities.
All Categories	(6a)	Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 2 may be used.

TABLE 3
CONTINGENCY CONTROL MEASURES FOR LARGE OPERATIONS

FUGITIVE DUST SOURCE CATEGORY	CONTROL MEASURES
Earth-moving	(1A) Cease all active operations; OR (2A) Apply water to soil not more than 15 minutes prior to moving such soil.
Disturbed surface areas	(0B) On the last day of active operations prior to a weekend, holiday, or any other period when active operations will not occur for not more than four consecutive days: apply water with a mixture of chemical stabilizer diluted to not less than 1/20 of the concentration required to maintain a stabilized surface for a period of six months; OR (1B) Apply chemical stabilizers prior to wind event; OR (2B) Apply water to all unstabilized disturbed areas 3 times per day. If there is any evidence of wind driven fugitive dust, watering frequency is increased to a minimum of four times per day; OR (3B) Take the actions specified in Table 2, Item (3c); OR (4B) Utilize any combination of control actions (1B), (2B), and (3B) such that, in total, these actions apply to all disturbed surface areas.
Unpaved roads	(1C) Apply chemical stabilizers prior to wind event; OR (2C) Apply water twice per hour during active operation; OR (3C) Stop all vehicular traffic.
Open storage piles	(1D) Apply water twice per hour; OR (2D) Install temporary coverings.
Paved road track-out	(1E) Cover all haul vehicles; OR (2E) Comply with the vehicle freeboard requirements of Section 23114 of the California Vehicle Code for both public and private roads.
All Categories	(1F) Any other control measures approved by the Executive Officer and the U.S. EPA as equivalent to the methods specified in Table 3 may be used.

Table 4
(Conservation Management Practices for Confined Animal Facilities)

SOURCE CATEGORY	CONSERVATION MANAGEMENT PRACTICES
Manure Handling **(Only applicable to Commercial Poultry Ranches)**	(1a) Cover manure prior to removing material off-site; AND (1b) Spread the manure before 11:00 AM and when wind conditions are less than 25 miles per hour; AND (1c) Utilize coning and drying manure management by removing manure at laying hen houses at least twice per year and maintain a base of no less than 6 inches of dry manure after clean out; or in lieu of complying with conservation management practice (1c), comply with conservation management practice (1d). (1d) Utilize frequent manure removal by removing the manure from laying hen houses at least every seven days and immediately thin bed dry the material.
Feedstock Handling	(2a) Utilize a sock or boot on the feed truck auger when filling feed storage bins.
Disturbed Surfaces	(3a) Maintain at least 70 percent vegetative cover on vacant portions of the facility; OR (3b) Utilize conservation tillage practices to manage the amount, orientation and distribution of crop and other plant residues on the soil surface year-round, while growing crops (if applicable) in narrow slots or tilled strips; OR (3c) Apply dust suppressants in sufficient concentrations and frequencies to maintain a stabilized surface.
Unpaved Roads	(4a) Restrict access to private unpaved roads either through signage or physical access restrictions and control vehicular speeds to no more than 15 miles per hour through worker notifications, signage, or any other necessary means; OR (4b) Cover frequently traveled unpaved roads with low silt content material (i.e., asphalt, concrete, recycled road base, or gravel to a minimum depth of four inches); OR (4c) Treat unpaved roads with water, mulch, chemical dust suppressants or other cover to maintain a stabilized surface.
Equipment Parking Areas	(5a) Apply dust suppressants in sufficient quantity and frequency to maintain a stabilized surface; OR (5b) Apply material with low silt content (i.e., asphalt, concrete, recycled road base, or gravel to a depth of four inches).

(Adopted July 7, 2017)(Amended December 1, 2017)(Amended June 4, 2021)

RULE 1466. CONTROL OF PARTICULATE EMISSIONS FROM SOILS WITH TOXIC AIR CONTAMINANTS

(a) Purpose

The purpose of this rule is to minimize the amount of off-site fugitive dust emissions containing toxic air contaminants by reducing particulate emissions in the ambient air as a result of earth-moving activities, including, dredging, excavating, grading, earth-cutting and filling, loading, unloading, handling, mechanized land clearing, treating, stockpiling, transferring, and removing of soil that contains applicable toxic air contaminants, from sites that meet the applicability requirements of subdivision (b).

(b) Applicability

(1) This rule shall apply to any owner or operator conducting earth-moving activities of soil with applicable toxic air contaminant(s) as defined in paragraph (c)(16) that have been identified as contaminant(s) of concern at a site that has been designated and notified by:

(A) The U.S. Environmental Protection Agency (U.S. EPA) as a Superfund National Priorities List site;

(B) The California Department of Toxic Substances Control (DTSC) as a Brownfield or Cleanup Program site;

(C) The State Water Resources Control Board (State Water Board) or Regional Water Quality Control Board (Regional Water Board) as a Site Cleanup Program site;

(D) A county, local, or state regulatory agency as a Hazardous Material Release site, as defined in California Health and Safety Code Section 25260; or

(E) The Executive Officer pursuant to subdivision (i).

(2) This rule shall not apply to:

(A) Earth-moving activities of soil with applicable toxic air contaminant(s) of less than 50 cubic yards; or

(B) Removal of soil for sampling purposes.

(c) Definitions

(1) ADEQUATELY WET means the condition of being sufficiently mixed or penetrated with water to prevent the release of particulates or visible emissions. The process by which an adequately wet condition is achieved is by using a dispenser

or water hose with a nozzle that permits the use of a fine, low-pressure spray or mist.

(c) (2) ADJACENT ATHLETIC AREA means any outdoor athletic field or park where youth organized sports occur that is in physical contact or separated solely by a public roadway or other public right-of-way to a SCHOOL.

(3) ADJOINING means in physical contact with or separated solely by a public roadway or other public right-of-way.

(4) CHEMICAL STABILIZERS means any non-toxic chemicals that are used to bind soil together to control FUGITIVE DUST emissions.

(5) DISTURBED SURFACE AREA means a portion of the earth's surface which has been physically moved, uncovered, destabilized, or otherwise modified from its undisturbed natural soil condition, thereby increasing the potential for FUGITIVE DUST. This definition excludes those areas which have:

(A) Been restored to a natural state, such that the vegetative ground cover and soil characteristics are similar to adjacent or nearby natural conditions;

(B) Been paved or otherwise covered by a permanent structure; or

(C) Sustained a vegetative ground cover of at least 70 percent of the native cover for a particular area for at least 30 days.

(6) DUST SUPPRESSANTS means water or hygroscopic materials, other than CHEMICAL STABILIZERS, that are used as a treatment material to reduce FUGITIVE DUST emissions.

(7) EARTH-MOVING ACTIVITIES means, for the purpose of this rule, any activity on a site that meets the applicability requirements of subdivision (b) where SOIL WITH APPLICABLE TOXIC AIR CONTAMINANT(S) is being moved or uncovered, including: dredging, excavating, grading, earth-cutting and filling operations, loading, unloading, handling, mechanized land clearing, treating, transferring, removing, and adding to or removing from STOCKPILES, and vehicular movement of equipment associated with these activities. EARTH-MOVING ACTIVITIES do not include vehicular movement from: delivery vehicles, passenger vehicles transporting personnel to and from the site, vehicles used for administrative purposes, vehicles transporting personnel for the purposes of soil sampling and conducting ambient PM_{10} monitoring requirements, watering trucks, and equipment used exclusively on a portion(s) of the site where there is no SOIL WITH APPLICABLE TOXIC AIR CONTAMINANT(S).

(c) (8) FUGITIVE DUST means, for the purpose of this rule, any solid particulate matter that is in contact with ambient air and has the potential to become airborne, other than solid particulate matter that is emitted from an exhaust stack.

(9) JOINT USE AGREEMENT PROPERTY means a shared public facility in which a formal agreement exists between a SCHOOL and another government entity setting forth the terms and conditions for shared use.

(10) OWNER OR OPERATOR means any firm, business establishment, association, partnership, corporation or individual, whether acting as principal, agent, employee, contractor, or other capacity.

(11) PAVED ROAD means a public or private improved street, highway, alley, public way, or easement that is covered by typical roadway materials, but excludes access roadways that connect a facility with a public paved roadway and are not open to through traffic. Public paved roads are those open to public access and that are owned by any federal, state, county, municipal, or any other governmental or quasi-governmental agencies. Private paved roads are any PAVED ROADS not defined as public.

(12) PROPERTY LINE means the boundary of an area where a person has the legal use or possession of the property. Where such property is divided into one or more sub-tenancies, the property line(s) shall refer to the boundaries dividing the areas of all sub-tenancies.

(13) SCHOOL means any public or private education center, including juvenile detention facilities with classrooms, used for the education of more than 12 children at the education center in kindergarten through grade 12. A SCHOOL also includes an Early Learning and Developmental Program by the U.S. Department of Education or any state or local early learning and development programs such as preschools, Early Head Starts, Head Start, First Five, and Child Development Centers. A SCHOOL does not include any private education center in which education is primarily conducted in private homes. A SCHOOL includes any building or structure, playground, athletic field, or other area of school property.

(14) SLAG means, for the purpose of this rule, the by-product material that is separated from metals during smelting or refining of ore.

(15) SOIL means dirt, sand, gravel, clay, SLAG, and aggregate material less than two inches in length or diameter, and other organic or inorganic particulate matter.

(16) SOIL WITH APPLICABLE TOXIC AIR CONTAMINANT(S) means, for the purpose of this rule, SOIL that has been identified by the U.S. EPA, the DTSC, the

State Water Board, the Regional Water Board, or a county, local, or state regulatory agency, to contain one or more of the applicable toxic air contaminants listed in Table I that exceed action levels as specified by the designating agency, or soil that has been identified by the Executive Officer to contain one or more of the toxic air contaminants listed in Rule 1401 – New Source Review of Toxic Air Contaminants (Table I) or Hazardous Air Pollutants Identified as Toxic Air Contaminants as listed in California Code of Regulations Section 93001, excluding volatile organic compounds regulated under Rule 1166 – Volatile Organic Compound Emissions from Decontamination of Soil.

(c) (17) STABILIZED SURFACE means any previously DISTURBED SURFACE AREA or STOCKPILE, which through the application of CHEMICAL STABILIZERS or DUST SUPPRESSANTS, shows visual or other evidence of surface crusting and is resistant to WIND-DRIVEN FUGITIVE DUST, and is demonstrated to be stabilized. Stabilization can be demonstrated by one or more of the applicable test methods contained in the most current version of the South Coast AQMD *Rule 403 Fugitive Dust Implementation Handbook* or in Volumes I and II of South Coast AQMD's *Dust Control in the Coachella Valley*.

(18) STOCKPILE means any accumulation of SOIL, which is not fully enclosed and which attains a height of three feet or more and a total surface area of 150 square feet or more.

(19) TRACK-OUT means, for the purpose of this rule, any SOIL that adheres to and agglomerates on the exterior surface of motor vehicles, haul trucks, and equipment (including tires) that has been released onto a PAVED ROAD and that can be removed by a vacuum sweeper under normal operating conditions.

(20) WIND-DRIVEN FUGITIVE DUST means visible emissions from any DISTURBED SURFACE AREA, which is generated by wind action alone.

(d) Monitoring Requirements

(1) When on-site earth-moving activities occur, the owner or operator shall conduct continuous direct-reading near real-time ambient monitoring of PM_{10} concentrations pursuant to paragraph (d)(3).

(2) If the PM_{10} concentration exceeds 25 micrograms per cubic meter, as measured pursuant to paragraph (d)(3) and as determined pursuant to paragraph (d)(9), the owner or operator shall cease on-site earth-moving activities, apply dust suppressant to fugitive dust sources, or implement other dust control measures as

necessary until the PM_{10} concentration is equal to or less than 25 micrograms per cubic meter averaged over 30 minutes.

(d) (3) The owner or operator conducting on-site earth-moving activities shall install PM_{10} monitors and conduct ambient PM_{10} monitoring:

(A) In accordance with a U.S. EPA-approved equivalent method for PM_{10} monitoring or using a Rule 1466 Approved PM_{10} Monitor;

(B) Using a minimum of two monitors, placing each monitor as close to the property line as feasible, where:

(i) One or more monitors is in the seasonal prevailing wind direction upwind of the area(s) of on-site earth-moving activity, indicative of background PM_{10} levels, and not generally influenced by fugitive dust sources from the site; and

(ii) One or more monitors is in the seasonal prevailing wind direction downwind of the area(s) of on-site earth-moving activity;

(C) Using PM_{10} monitors that are identical in: make and model, settings, and configuration; and

(D) Using ambient PM_{10} monitors that are operated, maintained, and calibrated in accordance with appropriate U.S. EPA-published documents for U.S. EPA-approved equivalent methods for PM_{10} and manufacturer's instructions.

(4) On and before December 31, 2021, the owner or operator shall collect ambient PM_{10} data with a data acquisition system (DAS) that is capable of logging direct-reading near real-time data providing the date, time, and PM_{10} concentration in micrograms per cubic meter every 10 minutes or less.

(5) On and after January 1, 2022, the owner or operator shall collect ambient PM_{10} data with a DAS that is capable of logging direct-reading near real-time data providing the date and time, calibrated to Pacific Standard Time (PST), and PM_{10} concentration in micrograms per cubic meter every 1 minute or less.

(6) On and after January 1, 2022, the owner or operator shall operate PM_{10} monitors with the heated sampler inlet on.

(7) On and after January 1, 2022, prior to conducting any on-site earth-moving activities, and weekly thereafter, the owner operator shall conduct intra-instrument precision tests with the PM_{10} monitors in accordance with *Appendix 2 – Procedures to Demonstrate Intra-Instrument Precision,* or make available documentation and supporting data certifying that such intra-instrument precision tests were run by an

equipment rental company or other third party, that demonstrate an intra-instrument precision of:

(d) (7) (A) No more than 25 percent as calculated pursuant to Step 7a in *Appendix 2* when ambient PM_{10} concentrations are equal to or greater than 15 micrograms per cubic meter; or

(B) No more than 5 micrograms per cubic meter as calculated pursuant to Step 7b in *Appendix 2* when ambient PM_{10} concentrations are less than 15 micrograms per cubic meter.

(8) On and after January 1, 2022, each day prior to conducting on-site earth-moving activities, the owner or operator shall conduct a passing zero check on each PM_{10} monitor in accordance with:

(A) Steps 4 and 5 of *Appendix 2* that demonstrates an average PM_{10} concentration of 0 ± 3 micrograms per cubic meter; or

(B) Manufacturer's instructions if a monitor is operated using an auto-zero check procedure that directs filtered particle-free air into the measurement chamber.

(9) The owner or operator shall calculate the PM_{10} concentration as a 120-minute rolling average, where:

(A) The initial average starts at the commencement of on-site earth-moving activities and ends 120 minutes after the commencement of on-site earth-moving activities;

(B) On and before December 31, 2021, the averages subsequent to the initial average specified in subparagraph (d)(9)(A) are to be calculated every 10 minutes and cover the previous 120-minute period;

(C) On and after January 1, 2022, the averages subsequent to the initial average specified in subparagraph (d)(9)(A) are to be calculated every 1 minute and cover the previous 120-minute period;

(D) The PM_{10} concentration is calculated by subtracting the results of the upwind monitor(s) from the downwind monitor(s) for the same averaging period;

(i) If the wind direction is in the seasonal prevailing wind direction, then the monitor(s) described pursuant to clause (d)(3)(B)(i) shall be designated as the upwind monitor(s) and the monitor(s) described pursuant to clause (d)(3)(B)(ii) shall be designated as the downwind monitor(s); and

(d) (9) (D) (ii) If there is greater than a ± 90 degree change in wind direction from the seasonal prevailing wind direction, then the monitor(s) described pursuant to clause (d)(3)(B)(i) shall be designated as the downwind monitor(s) and the monitor(s) described pursuant to clause (d)(3)(B)(ii) shall be designated as the upwind monitor(s);

(E) If there is more than one upwind monitor, the upwind result is the average concentration of all upwind monitors for the same rolling averaging period;

(F) If there is more than one downwind monitor, the downwind result is the maximum concentration of any of the downwind monitors for the same rolling averaging period;

(G) On and before December 31, 2021, when on-site earth-moving activities resume after ceasing pursuant to paragraph (d)(2), the average shall start when on-site earth-moving activities resume and shall end 120 minutes after on-site earth-moving activities resume, and the subsequent averages are to be calculated every 10 minutes and shall cover the previous 120-minute period; and

(H) On and after January 1, 2022, when on-site earth-moving activities resume after ceasing pursuant to paragraph (d)(2), the average shall start when on-site earth-moving activities resume and shall end 120 minutes after on-site earth-moving activities resume, and the subsequent averages are to be calculated every one minute and shall cover the previous 120-minute period.

(10) An owner or operator that elects to move the monitors accordingly when there is a change in wind direction in place of meeting the requirements specified in clauses (d)(3)(B)(i), (d)(3)(B)(ii), (d)(9)(D)(i), and (d)(9)(D)(ii), shall:

(A) Place a minimum of one upwind monitor in the upwind direction of the area(s) of on-site earth-moving activity, indicative of background PM_{10} levels, and not generally influenced by fugitive dust sources from the site;

(B) Place a minimum of one downwind monitor in the downwind direction of the area(s) of on-site earth-moving activity; and

(C) Move the monitor(s) in subparagraph (d)(10)(A) to the new upwind location and the monitor(s) in subparagraph (d)(10)(B) to the new downwind location when there is a change in wind direction.

(11) In the event that a DAS fails to log ambient PM_{10} data pursuant to paragraph (d)(5) or that the data management system integrated with the PM_{10} monitor(s) and

DAS(s) fails to calculate PM_{10} concentrations pursuant to subparagraph (d)(9)(C) due to a technical issue beyond the reasonable control of an owner or operator, including, but not limited to, internet connection disruptions and computer malfunctions, the owner or operator shall:

(d) (11) (A) Restore the DAS or data management system to working condition as soon as practicable and no later than the start of the next working day; and

(B) Manually record the PM_{10} concentration from the monitor(s) associated with the non-operational DAS once every 10 minutes or less and calculate the PM_{10} concentration pursuant to the averages specified in subparagraph (d)(9)(B) until the DAS is restored or calculate the PM_{10} concentration pursuant to the averages specified in subparagraph (d)(9)(B) until the data management system is restored.

(12) When conducting ambient PM_{10} monitoring as required in paragraph (d)(1), the owner or operator shall monitor wind direction and speed using a minimum of one stationary anemometer or wind sensor that:

(A) Is sited over open, level terrain within the project site with minimal obstructions to the wind flow at a minimum height of eight feet above grade;

(B) Meets the performance criteria of:

(i) Wind direction accuracy of ± 7 degrees and resolution of 1 degree; and

(ii) Wind speed accuracy of 2 miles per hour (mph) or ± 5 percent of the observed wind speed, whichever is greater, and resolution of 1 mph;

(C) Has a National Institute of Standards and Technology (NIST) Traceability certification;

(D) Is equipped with a data logger that records wind direction and speed data once every 1 minute or less and archives the recorded wind direction and speed data, including the date and time, calibrated to PST; and

(E) Is operated, calibrated, and maintained in accordance with manufacturer's specifications, but no less frequent than once every 6 months of cumulative operation.

(13) The Executive Officer may approve a PM_{10} monitor to be added as a Rule 1466 Approved PM_{10} Monitor if the PM_{10} monitor meets the specifications listed in *Appendix 1 – Rule 1466 Approved PM_{10} Monitors*. The request for a PM_{10} monitor to be added as a Rule 1466 Approved PM_{10} Monitor shall:

(A) Be submitted to Rule1466ApprovedMonitors@aqmd.gov;

(d) (13) (B) Include a description of the PM_{10} monitor, any accessories, and all monitor specifications; and

(C) Include documentation demonstrating compliance with each specification listed in *Appendix 1*.

(e) Requirements to Minimize Fugitive Dust Emissions

(1) On and before December 31, 2021, an owner or operator shall not conduct on-site earth-moving activities unless the area is surrounded with fencing that is a minimum of 6 feet tall and at least as tall as the height of the tallest stockpile, with a windscreen that has a porosity of 50 ± 5 percent. A section of the perimeter surrounding an on-site earth-moving activity area may be excluded from this requirement if that section:

(A) Has a solid physical barrier, such as a solid wall or other solid feature that minimizes air flow, that is a minimum of 6 feet tall but at least 6 inches taller than the height of the tallest stockpile; or

(B) Does not have on-site earth-moving activity occurring within 300 feet from the perimeter of that section.

(2) On and after January 1, 2022, an owner or operator shall not conduct on-site earth-moving activities unless the area is surrounded with fencing that is a minimum of 6 feet tall but at least 6 inches taller than the height of the tallest stockpile, with a windscreen that has a porosity of 50 ± 5 percent or a mesh windscreen that has a shade value or opacity of 85 ± 5 percent. A section of the perimeter surrounding an on-site earth-moving activity area may be excluded from this requirement if that section meets the conditions as specified in subparagraph (e)(1)(A) or (e)(1)(B).

(3) An owner or operator conducting on-site earth-moving activities shall:

(A) Adequately wet to the depth of earth-moving activity and allow time for penetration; and

(B) Adequately wet at frequencies to prevent the generation of visible dust plumes.

(4) An owner or operator that is moving vehicles on, within, or off a site shall:

(A) Post signs at all entrances of the site to designate the speed limit as 15 mph;

(B) Stabilize the surface of all vehicular traffic and parking areas by applying gravel, paving, chemical stabilizers pursuant to paragraph (e)(13), or dust suppressant;

(C) Not allow any track-out outside of the property line that is 25 feet or more in cumulative length. Remove any track-out at a minimum frequency of

once each day using a vacuum equipped with a filter(s) rated by the manufacturer to achieve a 99.97 percent control efficiency for 0.3 micron particles;

(e) (4) (D) Clean the soil from the exterior of trucks, trailers, and tires prior to the truck leaving the site, without the use of forced air; and

(E) Utilize at least one of the following measures at each vehicle egress from the site to a public road:

(i) Install a pad consisting of washed gravel (minimum-size: 1 inch), maintained in a clean condition, to a depth of at least 6 inches and extending at least 30 feet wide and at least 50 feet long;

(ii) Pave the surface extending at least 100 feet from the property line and at least 30 feet wide;

(iii) Utilize a wheel shaker/wheel spreading device consisting of raised dividers (rails, pipes, or grates) at least 24 feet long and 30 feet wide; or

(iv) Install and utilize a wheel washing system to remove soil from tires and vehicle undercarriages.

(5) An owner or operator conducting on-site earth-moving activities shall ensure that stockpiles with any soil with applicable toxic air contaminant(s) be:

(A) Segregated from non-contaminated stockpiles;

(B) Labelled with "South Coast AQMD Rule 1466 – Control of Particulate Emissions from Soils with Toxic Air Contaminant(s) Applicable Soil";

(C) Maintained to avoid steep sides or faces that exceed the angle of repose;

(D) No more than 400 cubic yards of soil;

(E) Maintained to minimize fugitive dust emissions containing toxic air contaminants by applying chemical stabilizers pursuant to paragraph (e)(13), applying dust suppressant, or completely covering pursuant to paragraph (e)(14); and

(F) Either chemically stabilized pursuant to paragraph (e)(13) and/or completely covered pursuant to paragraph (e)(14) at all times when earth-moving activities and ambient PM_{10} monitoring are not occurring.

(6) An owner or operator conducting truck and trailer loading activities of soil containing applicable toxic air contaminant(s) shall:

(A) Apply dust suppressant to material prior to loading;

(B) Empty the loader bucket slowly so that no visible dust plumes are generated;

(e) (6) (C) Minimize the drop height from the loader bucket;

(D) Maintain at least 6 inches of space between the soil and the top of the truck bed and trailer while transporting within a site; and

(E) Completely cover the truck bed and trailer prior to leaving the site.

(7) An owner or operator conducting truck and trailer unloading activities of soil containing applicable toxic air contaminant(s) shall:

(A) Apply dust suppressant to material prior to unloading; and

(B) Empty the trailer slowly so that no visible dust plumes are generated.

(8) The owner or operator shall immediately remove any spilled soil.

(9) The owner or operator shall cease on-site earth-moving activities if the wind speed is greater than 15 mph averaged over a 15-minute period or the instantaneous wind speed exceeds 25 mph.

(10) During on-site earth-moving activities, the owner or operator shall have an on-site dust control supervisor that:

(A) Is employed by or contracted with the owner or operator;

(B) Is located on the site during working hours;

(C) Is in a position to expeditiously employ sufficient dust control measures to ensure compliance with all rule requirements;

(D) Has completed the South Coast AQMD Fugitive Dust Control Class and has been issued a valid Certificate of Completion for the class; and

(E) Has the following credentials, if asbestos is an applicable toxic air contaminant:

(i) Successfully completed the Asbestos Abatement Contractor/Supervisor course pursuant to the Asbestos Hazard Emergency Response Act (AHERA), and obtained and maintained accreditation as an AHERA Asbestos Abatement Contractor/Supervisor; and

(ii) Trained on the provisions of 40 CFR Part 61.145, 61.146, 61.147 and 61.152 (Asbestos NESHAP provisions) and Part 763, and has the means to comply with these provisions.

(11) An owner or operator shall apply a chemical stabilizer pursuant to paragraph (e)(13) and/or use a cover pursuant to paragraph (e)(14) on potential sources of fugitive dust when earth-moving activities are not occurring in the specific location(s) containing the potential source(s) of fugitive dust.

(e) (12) An owner or operator shall inspect daily, including days when no on-site earth-moving activities are occurring, labeled stockpiles pursuant to subparagraph (e)(5)(B) and stabilized or covered stockpiles pursuant to (e)(5)(F).

(A) For a stabilized stockpile, such inspections shall include a demonstration of stabilization by one or more of the applicable test methods contained in the most current version of the South Coast AQMD *Rule 403 Fugitive Dust Implementation Handbook* or Volumes I and II of South Coast AQMD's *Dust Control in the Coachella Valley*.

(B) For a covered stockpile, such inspections shall include a visual inspection of all seams and plastic cover surfaces to ensure that no portion of the soil is exposed to the atmosphere.

(13) When utilizing a chemical stabilizer, an owner or operator shall:

(A) Ensure the chemical stabilizer meets any specifications, criteria, or tests required by any federal, state, or local agency or any applicable law, rule, or regulation; and

(B) Unless otherwise indicated, use a sufficient concentration of the chemical stabilizer and an application frequency sufficient to maintain a stabilized surface and no less than what is specified by the manufacturer for the period of inactivity.

(14) When using a cover for stockpiles, an owner or operator shall ensure the cover:

(A) Is at least 10 mil thick plastic sheeting that overlaps a minimum of 24 inches; and

(B) Is anchored and secured so that no portion of the soil is exposed to the atmosphere.

(15) An owner or operator that is conducting earth-moving activities of soil with applicable toxic air contaminant(s) at a school, joint use agreement property, adjacent athletic area, or at a site that is adjoining a school, joint use agreement property, or adjacent athletic area shall:

(A) Only conduct earth-moving activities at a school or at a site that is adjoining a school outside of the hours between 7:30 a.m. and 4:30 p.m. on days when the school is in session;

(B) Not conduct earth-moving activities at a school, joint use agreement property, adjacent athletic area, or at a site that is adjoining a school, joint use agreement property, or adjacent athletic area if there is a school sponsored activity or youth organized sports taking place at that site;

(e) (15) (C) Handle excavated soils with applicable toxic air contaminant(s) by:

(i) Immediately placing soil in a leak-tight container whereby any contained solids or liquids are prevented from escaping or spilling out;

(ii) Directly loading soil in truck beds, trailers, and bins for transport, applying chemical stabilizer pursuant to paragraph (e)(13) or dust suppressant, and completely covering prior to transporting; or

(iii) Stockpiling pursuant to paragraph (e)(5), in a fenced area that is not accessible to the general public, and locked when not in use; and

(D) Within five days of its excavation, remove all soil with applicable toxic air contaminant(s) from the site.

(f) Notification Requirements

(1) The owner or operator shall electronically submit an initial notification to the Executive Officer, using a format approved by the Executive Officer, of the intent to conduct any on-site earth-moving activities.

(A) Initial notifications shall be submitted:

(i) At least 72 hours but no more than 30 days prior to conducting any earth-moving activities on any site meeting the applicability requirements of subdivision (b); or

(ii) As soon as the information becomes available but no later than 48 hours after the information becomes available that on-site earth-moving activities of soil with applicable toxic air contaminant(s) exceed 50 cubic yards.

(B) Initial notifications shall include the following requirements:

(i) Name, address, telephone number, and e-mail address of the owner or operator;

(ii) Name, telephone number, and e-mail address of the on-site dust control supervisor;

(iii) Project name and, if applicable, the project identification number from the designating agency;

(iv) Project location (address and/or coordinates);

(v) Identify whether the site is a school, joint use agreement property, adjacent athletic area, or is adjoining a school, joint use agreement property, or adjacent athletic area;

(f) (1) (B) (vi) A map indicating the specific location(s) of each on-site earth-moving activity and the concentrations of the applicable toxic air contaminant(s) and location of PM_{10} monitors;

(vii) A description of the on-site earth-moving activities, estimated volume of soil with applicable toxic air contaminant(s), and a schedule that includes the anticipated start and completion dates of on-site earth-moving activities;

(viii) Current and/or previous type of operation(s) and use(s) at the site;

(ix) Applicable exemption(s); and

(x) Whether the notice being provided is a revised notification.

(2) Notification Updates

Initial notifications pursuant to paragraph (f)(1) shall be updated when any of the following conditions arise:

(A) Earlier Start Date

A change in the start date of on-site earth-moving activities to an earlier date shall be reported to the South Coast AQMD no later than 72 hours before any on-site earth-moving activities begin.

(B) Later Start Date

A delay in the start date of on-site earth-moving activities shall be reported to the South Coast AQMD as soon as the information becomes available, but no later than the original start date.

(C) Change in Exemption Status

Any change(s) in exemption status pursuant to subdivision (k) shall be reported to the South Coast AQMD as soon as the information becomes available, but no later than 48 hours after the information becomes available.

(D) Completion Date

The completion date of on-site earth-moving activities shall be reported to the South Coast AQMD no later than 48 hours after on-site earth-moving activities are completed.

(3) Within 72 hours of an exceedance of the PM_{10} emission limit specified in paragraph (d)(2), the owner or operator shall electronically submit a notification to the Executive Officer, using a format approved by the Executive Officer, of the exceedance and shall include the following information:

(f) (3) (A) Name, address, telephone number, and e-mail address of the owner or operator;

(B) Name, telephone number, and e-mail address of the on-site dust control supervisor;

(C) Project name and, if applicable, the project identification number from the designating agency;

(D) Project location (address and/or coordinates);

(E) PM_{10} monitoring results and wind direction and speed results pursuant to subdivision (d), including location of monitors, result, date and time of exceedance(s), 12 hours before first exceedance, and 12 hours after last exceedance;

(F) On-site earth-moving activities occurring at the date and time of exceedance(s); and

(G) Dust control measure(s) taken to mitigate fugitive dust.

(g) Signage Requirements

When conducting on-site earth-moving activities, the owner or operator shall install and maintain project signage.

(1) Unless otherwise approved in writing by the Executive Officer, signage shall:

(A) Be installed at all entrances and at intervals of 1,000 feet or less along the property line or perimeter of the site, with a minimum of one sign along each side;

(B) Be located between 6 and 8 feet above grade from the bottom of the sign;

(C) Display lettering at least 4 inches tall with text contrasting with the sign background; and

(D) Display the following information:

(i) Local or toll-free phone number for the site contact or pre-recorded notification center that is accessible 24 hours a day; and

(ii) Warning statement:

"THIS SITE CONTAINS SOILS THAT CONTAIN THE FOLLOWING CHEMICALS: [LIST APPLICABLE TOXIC AIR CONTAMINANT(S)]
TO REPORT ANY DUST LEAVING THE SITE PLEASE CALL [FACILITY CONTACT AND PHONE NUMBER] OR THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT AT 1-800-CUT-SMOG".

(g) (2) If signage pursuant to paragraph (g)(1) exceeds 48 inches by 96 inches, the owner or operator or designating agency shall include the warning statement referenced in clause (g)(1)(D)(ii), displaying lettering at least 4 inches tall with text contrasting with the sign background, but may use 2.5 inch tall lettering to list applicable toxic air contaminant(s). All other signage requirements set forth in paragraph (g)(1) shall remain the same. If signage continues to exceed 48 inches by 96 inches with these parameters, the owner or operator or designating agency may use alternative signage as set forth in paragraph (g)(3).

(3) The owner or operator or designating agency may use alternative signage approved by the Executive Officer pursuant to subdivision (j). Notwithstanding subdivision (j), the request shall include a visual representation of the alternative sign, including proposed lettering height, and locations and, at a minimum, the alternative signage shall:

(A) Display text contrasting with the sign background; and

(B) Display the following warning statement:

"THIS SITE CONTAINS SOILS THAT CONTAIN THE FOLLOWING CHEMICALS: [LIST APPLICABLE TOXIC AIR CONTAMINANT(S)] TO REPORT ANY DUST LEAVING THE SITE PLEASE CALL THE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT AT 1-800-CUT-SMOG".

(4) The owner or operator may be excluded from installing and maintaining project signage pursuant to subparagraph (g)(1)(A) at any entrance(s) or interval(s) along the property line or perimeter of the site that is not visible and not accessible to the public unless the site is a school, joint use agreement property, or adjacent athletic area or the site is adjoining a school, joint use agreement property, or adjacent athletic area.

(h) Recordkeeping Requirements

The owner or operator shall maintain records for a period of not less than 3 years and shall make such records available to the Executive Officer upon request. At a minimum, records shall be maintained daily and shall include:

(1) Inspections of all stabilized or covered stockpiles containing soils with applicable toxic air contaminant(s) and all re-stabilization, cover repair, and label maintenance activities, including dates and times the specific activities were conducted;

(2) Results of wind and PM_{10} monitoring, including: ambient PM_{10} data; rolling average PM_{10} concentrations and calculations; wind direction and speed

corresponding to the rolling average PM_{10} concentrations; movement of monitoring instruments corresponding to wind direction changes; instrument make and model; settings; proof of valid calibration in accordance with manufacturer's recommended schedule; configuration; calibration, correction, and correlation factors; maintenance; operator training; daily instrument performance check records and manual zero or auto-check results; weekly zero calibration records and intra-instrument precision test data and calculation results; and all instrument logs for all monitoring instruments;

(h) (3) All instrument maintenance activities, including: zero calibration, cleaning, filter replacement, and performance checks, including dates and times of the specific procedures;

(4) Documentation of all DAS and data management system failures, including date and time of the failure, date and time of the correction, the technical issue(s) causing the failure, and activities performed to restore the failed DAS or data management system to working condition;

(5) On-site earth-moving activities conducted and the corresponding volume of soil with applicable toxic air contaminant(s);

(6) Names and business addresses of the transporting and receiving facilities, and a copy of the shipping manifest;

(7) Complaints called in, including the name of complainant and contact information, date and time, on-site earth-moving activities occurring at the date and time, complaint, and action taken to mitigate the source of the complaint; and

(8) A copy of all submitted notifications for the project.

(i) Executive Officer Designated Sites

(1) The Executive Officer may designate a site if the Executive Officer has evidence that the site contains soil with applicable toxic air contaminant(s) as defined in paragraph (c)(16), after consultation with U.S. EPA, DTSC, the State Water Resources Control Board, the Regional Water Quality Control Board, and/or local, county, or state regulatory agencies, and consideration of the following:

(A) Site history, including current and/or previous type(s) of operation(s) and use(s) at the site and regulatory history;

(B) Concentration(s) of applicable toxic air contaminant(s) in the soil;

(C) Background concentration(s) of applicable toxic air contaminant(s);

(D) Volume of soil with applicable toxic air contaminant(s);

(i) (1) (E) Distance to a residence, park, school, joint use agreement property, adjacent athletic area, or a site adjoining a school, joint use agreement property, or adjacent athletic area;

(F) Meteorological data;

(G) Health risk information or other data provided by the owner or operator, if available; and

(H) Ambient monitoring data and other applicable data, if available.

(2) Prior to making a determination, the Executive Officer will notify the owner or operator in writing that the site may be subject to this rule.

(A) In the event the owner or operator exercises this opportunity to demonstrate that this rule does not apply, the owner or operator shall submit information to the Executive Officer within 14 days of the notification substantiating why the site should be excluded from this rule.

(B) Upon final determination, the Executive Officer will notify the owner or operator in writing if the site is subject to this rule.

(3) During the determination period, the owner or operator shall comply with the provisions of this rule or cease all on-site earth-moving activities until a determination is made.

(j) Alternative Provisions

(1) If requesting an alternative provision pursuant to paragraph (g)(3), the owner or operator or designating agency shall submit the request in writing at least 30 days prior to conducting any earth-moving activities and include all information to the Executive Officer to substantiate its position.

(2) The Executive Officer may request additional information from the owner or operator or designating agency.

(3) The owner or operator or designating agency shall submit all requested information within 14 days of the request for additional information.

(4) The Executive Officer will review the request for an alternative provision and will approve or reject the data and notify the owner or operator or designating agency in writing. Approved alternative provisions may not be used retroactively.

(5) Alternative provisions that were approved and notified in writing by the Executive Officer before June 4, 2021 shall be deemed compliant with the requirements of the applicable provisions of the rule, shall remain in effect only for the period of time and for the specific project for which they were granted, and shall not be renewed or extended.

(k) Exemptions

(1) The owner or operator may be exempt from one or more provisions of this rule provided there is written confirmation that the designating agency under subparagraphs (b)(1)(A) through (b)(1)(D) has consulted with the Executive Officer and has determined that the provision(s) are not needed based on information specified in subparagraphs (i)(1)(A) through (i)(1)(H).

(2) On-site earth-moving activities performed within an enclosed system vented to South Coast AQMD permitted air pollution control equipment shall be exempt from all requirements except: subparagraphs (e)(4)(C) through (e)(4)(E), subparagraphs (e)(6)(D) and (e)(6)(E), and subdivisions (f), (g), and (h).

(3) Linear trenching for natural gas, power, sewer, and water projects on roadways with soil with applicable toxic air contaminant(s), directly loaded into a truck bed, trailer, or bin for transport, shall be exempt from all requirements except: paragraphs (e)(3) through (e)(9), paragraphs (e)(13) and (e)(15), and subdivisions (f), (h), and (i).

(4) On-site earth-moving activities consisting only of excavation activities of soil with applicable toxic air contaminant(s) of less than 500 cubic yards, directly loaded into a truck bed, trailer, or bin for transport, shall be exempt from all requirements except: paragraphs (e)(3) through (e)(9), paragraphs (e)(13) and (e)(15), and subdivisions (f), (h), and (i).

(5) On-site earth-moving activities conducted during emergency life-threatening situations, or in conjunction with any officially declared disaster or state of emergency as declared by an authorized health officer, agricultural commissioner, fire protection officer, or other authorized agency officer shall be exempt from all requirements. The Executive Officer shall be notified electronically no later than 48 hours following such on-site earth-moving activities. Written notification shall include written emergency declaration from the authorized officer.

(6) On-site earth-moving activities conducted by essential service utilities to provide electricity, natural gas, telephone, water, or sewer during periods of service outages and emergency disruptions shall be exempt from all requirements. The Executive Officer shall be notified electronically no later than 48 hours following such on-site earth-moving activities.

Table I – Applicable Toxic Air Contaminants

CAS Number	Substance
7440-38-2	**arsenic and arsenic compounds (inorganic)**
	including, but not limited to:
	arsenic compounds (inorganic)
7784-42-1	arsine
1332-21-4	Asbestos
7440-43-9	cadmium and cadmium compounds
57-74-9	chlordane
	dibenzo-p-dioxins (chlorinated)
1746-01-6	tetrachlorodibenzo-p-dioxin, 2,3,7,8-
40321-76-4	pentachlorodibenzo-p-dioxin, 1,2,3,7,8-
39227-28-6	hexachlorodibenzo-p-dioxin, 1,2,3,4,7,8-
57653-85-7	hexachlorodibenzo-p-dioxin, 1,2,3,6,7,8-
19408-74-3	hexachlorodibenzo-p-dioxin, 1,2,3,7,8,9-
35822-46-9	heptachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8-
3268-87-9	octachlorodibenzo-p-dioxin, 1,2,3,4,6,7,8,9-
41903-57-5	total tetrachlorodibenzo-p-dioxin
36088-22-9	total pentachlorodibenzo-p-dioxin
34465-46-8	total hexachlorodibenzo-p-dioxin
37871-00-4	total heptachlorodibenzo-p-dioxin
72-54-8	dichlorodiphenyldichloroethane
72-55-9	dichlorodiphenyldichloroethylene
50-29-3	dichlorodiphenyltrichloroethane

Table I – Applicable Toxic Air Contaminants (cont.)

CAS Number	Substance
18540-29-9	**chromium (hexavalent) and chromium compounds**
	including, but not limited to:
10294-40-3	barium chromate
13765-19-0	calcium chromate
7758-97-6	lead chromate
10588-01-9	sodium dichromate
7789-06-2	strontium chromate
13530-65-9	zinc chromate
7439-92-1	**lead and lead compounds (inorganic, including elemental lead)**
	including, but not limited to:
	lead compounds (inorganic)
301-04-2	lead acetate
7758-97-6	lead chromate
7446-27-7	lead phosphate
1335-32-6	lead subacetate
7439-97-6	**mercury and mercury compounds (inorganic)**
	including, but not limited to:
7487-94-7	mercuric chloride
593-74-8	methyl mercury

Table I – Applicable Toxic Air Contaminants (cont.)

CAS Number	Substance
7440-02-0	**nickel and nickel compounds**
	including, but not limited to:
373-02-4	nickel acetate
3333-67-3	nickel carbonate
13463-39-3	nickel carbonyl
12054-48-7	nickel hydroxide
1313-99-1	nickel oxide
12035-72-2	nickel subsulfide
1271-28-9	nickelocene
	refinery dust from the pyrometallurgical process
1336-36-3	**polychlorinated biphenyls (PCBs)**
32598-13-3	3,3’,4,4’-tetrachlorobiphenyl (PCB 77)
70362-50-4	3,4,4’,5-tetrachlorobiphenyl (PCB 81)
32598-14-4	2,3,3’,4,4’-pentachlorobiphenyl (PCB 105)
74472-37-0	2,3,4,4’,5-pentachlorobiphenyl (PCB 114)
31508-00-6	2,3’,4,4’,5-pentachlorobiphenyl (PCB 118)
65510-44-3	2,3',4,4',5'-pentachlorobiphenyl (PCB 123)
57465-28-8	3,3’,4,4’,5-pentachlorobiphenyl (PCB 126)
38380-08-4	2,3,3’,4,4’,5-hexachlorobiphenyl (PCB 156)
69782-90-7	2,3,3’,4,4’,5’-hexachlorobiphenyl (PCB 157)
52663-72-6	2,3’,4,4’,5,5’-hexachlorobiphenyl (PCB 167)
32774-16-6	3,3’,4,4’,5,5’-hexachlorobiphenyl (PCB 169)
39635-31-9	2,3,3’4,4’,5,5’-heptachlorobiphenyl (PCB 189)

Table I – Applicable Toxic Air Contaminants (cont.)

CAS Number	Substance
	polycyclic aromatic hydrocarbons (PAHs)
56-55-3	benzo[a]anthracene
50-32-8	benzo[a]pyrene
205-99-2	benzo[b]fluoranthene
207-08-9	benzo[k]fluoranthene
218-01-9	chrysene
53-70-3	dibenz[a,h]anthracene
193-39-5	indeno[1,2,3-c,d]pyrene

Appendix 1 – Rule 1466 Approved PM_{10} Monitors

The Executive Officer may approve PM_{10} monitors that meet the following physical and performance requirements.

1. Physical Requirements
   - 1.1. PM_{10} monitors shall be continuous direct-reading near-real time monitors and shall monitor particulate matter less than 10 microns.
   - 1.2. PM_{10} monitors shall be equipped with:
     - 1.2.a. Omni-directional heated sampler inlet;
     - 1.2.b. Sample pump with active flow control mechanism;
     - 1.2.c. Enclosure;
     - 1.2.d. Data logger capable of logging each data point with average concentration, time, date, and data point number; and
     - 1.2.e. Conductive tubing that minimizes particle loss for any external tubing used to carry sampled air prior to measurement.

2. Performance Requirements
   - 2.1 PM_{10} monitors shall have the following minimum performance standards:
     - 2.1.a. Range: 0 - 10,000 $\mu g/m^3$;
     - 2.1.b. Accuracy, determined through factory testing against a U.S. EPA Federal Reference Method or Federal Equivalent Method, for a minimum of 30 measurements each averaged over 24 hours, to show:
       - 2.1.b.i. ± 5% of reading ± precision; or
       - 2.1.b.ii. Coefficient of determination (R^2) of ≥ 0.95 through simple linear regression;
     - 2.1.c. Resolution: 1.0 $\mu g/m^3$;
     - 2.1.d. Flow control accuracy of ± 5% of factory setpoint; and
     - 2.1.e. Measurement Cycle: User selectable (30 minute and 2 hour).
   - 2.2 Monitors that have a valid *Monitoring Certification Scheme* certification meeting the latest version of the *Monitoring Certification Scheme* (*MCERTS): Performance Standard for Indicative Ambient Particulate Monitors* may be exempt from meeting the performance requirements listed above, but shall meet all stated physical requirements.

3. Quality Assurance/Quality Control Requirements

In order to ensure the validity of the PM_{10} measurements performed, there shall be appropriate Quality Assurance/Quality Control (QA/QC). It is the responsibility of the owner or operator to adequately supplement QA/QC Plans to include the following critical features: instrument calibration, instrument maintenance, operator training, and daily instrument performance checks.

Appendix 2 – Procedures to Demonstrate Intra-Instrument Precision

An owner or operator shall perform the following procedures to demonstrate the intra-instrument precision of all PM_{10} monitors as required in paragraph (d)(7).

1. Ensure monitors are identical in make and model, settings, and configuration.
2. Ensure monitor inlets are at the same height and located within 4 meters of each other but no less than 1 meter apart for the duration of the test.
3. Power on the monitors and turn on the heated sampler inlet. Allow the monitors to warm-up per manufacturer's recommendations or when readings have stabilized.
4. For each monitor, conduct a zero calibration in accordance with manufacturer's instructions, then conduct a manual zero check by removing any sampling inlet and installing a filter, rated by the manufacturer to achieve a 99.97 percent control efficiency for 0.3 micron particles, on the inlet of the monitor for a minimum of 10 minutes. If the monitors are operated using an auto-zero check procedure that directs filtered particle-free air into the measurement chamber, conduct the zero check in accordance with manufacturer's instructions.
5. Log the PM_{10} concentration reading every minute, and calculate and record the average of the readings of the manual zero check. The average of the manual zero check readings shall be 0 ± 3 micrograms per cubic meter before proceeding to Step 6. If conducting an auto-zero check, the monitor shall pass the zero check in accordance with manufacturer's instructions before proceeding to Step 6. If any monitors fail either the manual zero check or the auto-zero check, the owner or operator shall conduct a zero calibration in accordance with manufacturer's instructions and/or correct any issue(s) causing the failure, followed by conducting a passing zero check on the PM_{10} monitor(s) in accordance with Steps 4 and 5.
6. Remove the filter and install the monitor inlet as required. After waiting 10 minutes, operate the monitors simultaneously and log the PM_{10} concentration reading every minute for a minimum of 60 minutes.

7. Calculate the intra-instrument precision using either of the following equations:
   a. Intra-instrument precision in relative standard deviation or correlation of variation (%) when ambient PM_{10} concentrations are greater than or equal to 15 micrograms per cubic meter:

$$P = \frac{S_t}{C_t} \, x \, 100\%$$

where,

P = Intra-instrument precision in percent (%);

S_t = Standard deviation of the averaged PM_{10} concentration readings from all tested monitors over the time t of testing duration, to be calculated as:

$$S_t = \sqrt{\frac{\sum(x_i - \bar{x})^2}{(n-1)}}$$

where,

x_i = Mean of the PM_{10} concentration readings for a tested monitor over time t of testing duration,

$\bar{x}$ = Mean of the averaged PM_{10} concentration readings from all tested monitors over the time t of testing duration, and

n = Number of tested monitors; and

C_t = Mean of the averaged PM_{10} concentration readings from all tested monitors over the time t of testing duration; or

   b. Intra-instrument precision in absolute value (micrograms per cubic meter) when ambient PM_{10} concentrations are less than 15 micrograms per cubic meter:

$$P = S_t$$

where,

P = Intra-instrument precision in micrograms per cubic meter, and

S_t = Standard deviation of the averaged PM_{10} concentration readings from all tested monitors over the time t of testing duration.

8. Record the results of the calculations.

(Adopted August 5, 1988)(Amended July 14, 1995)(Amended May 11, 2001)

RULE 1166. VOLATILE ORGANIC COMPOUND EMISSIONS FROM DECONTAMINATION OF SOIL

(a) Applicability

This rule sets requirements to control the emission of Volatile Organic Compounds (VOC) from excavating, grading, handling and treating VOC-contaminated soil as a result of leakage from storage or transfer operations, accidental spillage, or other deposition.

(b) Definitions

(1) EXCAVATION is the process of digging out and removing materials, including any material necessary to that process such as the digging out and removal of asphalt or concrete necessary to expose, dig out and remove known VOC contaminated soil.

(2) GRADING is the process of leveling off to produce a smooth surface including the removal of any material necessary to that process such as asphalt and concrete necessary to expose known VOC contaminated soil.

(3) SOIL DECONTAMINATION MEASURE is any process approved by the Executive Officer to remediate, destroy, remove, or encapsulate VOC and VOC-contaminated soil.

(4) UNDERGROUND STORAGE TANK means any one or combination of tanks, including pipes connected thereto, which is used for the storage of organic liquid which is more than 50% beneath the surface of the ground.

(5) VOC CONTAMINATED SOIL is a soil which registers a concentration of 50 ppm or greater of Volatile Organic Compounds as measured before suppression materials have been applied and at a distance of no more than three inches from the surface of the excavated soil with an organic vapor analyzer calibrated with hexane.

(6) VOC CONTAMINATED SOIL MITIGATION PLAN is a plan to minimize VOC emissions to the atmosphere during excavation and any subsequent handling of VOC-contaminated soil.

(7) VOLATILE ORGANIC COMPOUND (VOC) is any volatile compound of carbon, excluding methane, carbon monoxide, carbon dioxide, carbonic acid, metallic carbides or carbonates, ammonium carbonate, and exempt compounds. Exempt compounds are defined in Rule 102—Definition Of Terms.

(8) VOLATILE ORGANIC MATERIALS include gasoline, diesel, crude oil, lubricant, waste oil, adhesive, paint, stain, solvent, resin, monomer, and/or any other material containing VOC.

(c) Requirements

(1) A person excavating an underground storage tank and/or transfer piping storing or previously storing VOC materials, or excavating or grading soil containing VOC materials shall:

(A) Apply for, obtain and operate pursuant to a mitigation plan approved by the Executive Officer prior to commencement of excavation or handling. The mitigation plan general requirement and application requirements are found in Attachment A to this rule. A copy of the approved plan must be on site during the entire excavation period.

(B) Notify the Executive Officer at least 24 hours prior to excavation using a form approved by the Executive Officer which is fully completed.

If the excavation does not commence on start date, renotification is required.

An alternative notification procedure may be authorized for multiple excavations within a single facility, with prior written approval from the Executive Officer.

(C) Monitor for VOC contamination pursuant to subdivision (e), at least once every 15 minutes commencing at the beginning of excavation or grading and record all VOC concentration readings in a format approved by the Executive Officer; and

(D) When VOC-contaminated soil is detected during excavation or grading:

(i) Implement the approved mitigation plan (Attachment A).

(ii) Notify the Executive Officer within 24 hours of detection of VOC-contaminated soil.

(iii) Monitor and record VOC concentration readings as prescribed in the plan. Monitoring records must be kept available on site.

(iv) Keep calibration records for all monitoring instruments available on site.

(2) A person handling VOC-contaminated soil at or from an excavation or grading site shall:

(A) Segregate VOC-contaminated stockpiles from non-VOC contaminated stockpiles such that mixing of the stockpiles does not take place.

(B) Spray VOC-contaminated soil stockpiles with water and/or approved vapor suppressant and cover them with plastic sheeting for all periods of inactivity lasting more than one hour.

(C) Conduct a daily visual inspection of all covered VOC contaminated soil stockpiles to ensure the integrity of the plastic covered surfaces. A daily inspection record must be maintained on site.

(D) Comply with the provisions in subparagraph (c) (1)(A) and clause (c)(1)(D)(i).

(E) Maintain a record of the identification and business addresses of the generator, transporter and storage/treatment facilities. Such record shall be signed by each party at the time custody is transferred.

(F) Treat or remove contaminated soil from an excavation or grading site within 30 days from the time of excavation.

(3) If the VOC concentration in the excavated soil is measured at greater than 1000 ppm, spray the soil with water or vapor suppressant and:

(A) As soon as possible, but not more than 15 minutes, place the soil in sealed containers, or

(B) As soon as possible, but not more than 15 minutes, load into trucks, moisten with additional water, cover and transport off site, or

(C) Implement other alternative storage methods approved in writing by the Executive Officer.

(4) A person treating VOC-contaminated soil shall:

(A) Obtain a permit to construct and operate treatment equipment, as applicable, from the Executive Officer, and

(B) Implement VOC-contaminated soil decontamination measures, as approved by the Executive Officer in writing, which result in Best Available Control Technology applied during all segments, and which include, but are not limited to, at least one of the following:

(i) Installation and operation of an underground VOC collection system and a disposal system prior to excavation.

(ii) Collection and disposal of the VOC from the excavated soil on-site using equipment approved by the Executive Officer.

(iii) Any equivalent VOC-contaminated soil control measure previously approved in writing by the Executive Officer.

(5) A person shall not engage in or allow any on-site or off-site spreading, grading or screening of VOC-contaminated soil, which results in uncontrolled evaporation of VOC to the atmosphere.

(6) Loading trucks for contaminated soil must meet the following:

(A) The truck and trailer shall be adequately tarped prior to leaving the site; no excavated materials shall extend above the sides or rear of the truck or trailer to prevent soil spillage during transport, and

(B) The exterior of the truck, trailer and tires shall be cleaned off prior to the truck leaving the site.

(d) Exemptions

(1) The provisions of this rule shall not apply to the following:

(A) Excavation, handling, and treating of less than one (1) cubic yard of contaminated soil.

(B) Removal of soil for sampling purposes.

(C) Accidental spillage of five (5) gallons or less of VOC containing material.

(2) The provisions of paragraphs (c)(1) and (c)(2) shall not apply to soil excavation or handling as a result of an emergency as declared by an authorized health officer, agricultural commissioner, fire protection officer, or other authorized agency officer. Whenever possible, the Executive Officer shall be notified by telephone prior to commencing such excavation. The Executive Officer shall be notified in writing no later than 48 hours following such excavation. Written notification shall include written emergency declaration from the authorized officer.

(e) Test Methods

(1) A person shall measure excavated soils for volatile organic compounds to determine contamination by:

(A) Using an organic vapor analyzer calibrated with hexane, complying with 40 CFR Part 60 Appendix A, EPA Reference Method 21 Section 3 or any equivalent method with prior approval in writing by the Executive Officer. If other calibrating gases are used, then the measured readings shall be correlated to and expressed as hexane.

(B) Placing the probe inlet at a distance of no more than three inches from the surface of the excavated soil and while slowly moving the probe across the soil surface, observe the instrument readout. If an increased meter reading is observed, continue to sample the excavated soil until the maximum meter reading is obtained. Leave the probe inlet at this maximum reading location for approximately double the instrument response time. If the maximum observed meter reading is greater than the 50 ppm standard in the regulation, record and report the results.

(2) The presence of VOC in stored or spillage materials shall be determined by SCAQMD Method 313 [Determination of Presence of Volatile Organic Compounds (VOC) in Headspace] and/or Method 304 (Determination of Volatile Organic Compounds in Various Materials) contained in the SCAQMD "Laboratory Methods of Analysis for Enforcement Samples" manual.

(f) Enforcement

(1) Violation of any provision of this rule or the violation of the approved mitigation plan shall be grounds for the Executive Officer to amend or revoke the mitigation plan, in addition to penalties provided by the Health & Safety Code.

(2) If the owner or operator is served with a Notice of Violation for creating a public nuisance, the owner or operator shall suspend operation until the public nuisance is mitigated to the satisfaction of the Executive Officer.

ATTACHMENT A
GENERAL MITIGATION PLANS REQUIREMENTS

VOC Contaminated Soil Mitigation Plans shall be written to minimize VOC emissions to the atmosphere during excavation, grading, handling and treatment of VOC contaminated soil. VOC Contaminated Soil Mitigation Plans shall consist of three types: Various Locations, Site Specific and Facility Treatment.

(1) General Requirements

(A) A plan is not transferable.

(B) A person responsible for the excavation, grading or handling of VOC contaminated soil must be completely familiar with the plan and must adhere to the plan requirement. The Executive Officer may require that the plan be signed by the owner and/or operator.

(C) A plan may be amended upon renewal.

(D) Permission to excavate, grade or handle VOC contaminated soil may be withdrawn by the District upon a finding by the Executive Officer that the excavation, grading or handling of the VOC contaminated soil is causing a public nuisance or violating other AQMD rules or regulations.

(2) Various Location Plans:

(A) Shall be limited to the excavation of 2000 cubic yards or less of VOC contaminated soil in any consecutive 12 month period at the same site.

(B) Shall not be used in conjunction with any other various location plan at the same site within a consecutive 12-month period.

(C) Shall expire after one year from issuance unless renewed.

(D) Shall not be issued for nor used for operations that involve grading, soil treatment or remediation, or landfills.

(3) Site Specific Plans:

(A) Shall be for excavation of greater than 2000 cubic yards of VOC contaminated soil.

(B) Shall be issued for specific excavation or grading locations for a period not to exceed two years.

(C) Shall not be renewable.

(4) Facility Treatment Plans:

(A) Shall be issued for a treatment facility at a permanent location.

(B) Shall expire after one year from issuance unless renewed.

(5) Applications for Site Specific Plans shall contain as a minimum:

(A) Reasons for excavation or grading.

(B) Cause of VOC soil contamination and history of the site.

(C) Description of tanks or piping associated with the soil contamination.

(D) An estimate of the amount of contaminated soil.

(E) The operating schedule for excavation and removal.

(F) Description of how the excavation or grading will be conducted.

(G) Description of mitigation measures for dust, odors and VOC.

(H) Details of disposal of VOC contaminated soil, including the ultimate receptor.

(I) Description of monitoring equipment and techniques.

(J) A map showing the facility layout, property line, and surrounding area up to 2500 feet away, and including any schools, residential areas or other sensitive receptors such as hospitals or locations where children or elderly people live or work.

(K) Designation of a person who can conduct a site inspection with the Executive Officer prior to issuance of the plan.

(6) Applications for Facility Treatment Plans shall at a minimum:

(A) Include a list of all AQMD permits to construct or operate which have been issued for that treatment and control equipment.

(B) Provide for the implementation of VOC-contaminated soil decontamination measures, as approved by the Executive Officer in writing, which result in Best Available Control Technology during all operations.

(C) Provide a map showing the facility layout including the location of all proposed VOC and non-VOC contaminated soil stockpiles.

(D) Specify the total amount of VOC contaminated soil proposed to be stockpiled on site.

(E) Provide for VOC contaminated soil stockpiles to be kept moist with water or suppressant and be covered to prevent fugitive emissions.

(F) Provide for VOC contaminated soil stockpiles to be segregated from non-VOC contaminated soil stockpiles.

(G) Provide for maintenance of records for stockpiles according to the source name, address and dates of reception.

(H) Provide for records of the generator, transporter and storage/treatment facilities and indicate their identification and business addresses. Such records shall be signed by each party at the time custody is transferred.

(I) Provide a map showing the facility layout, property line, and surrounding area up to 2500 feet away, and including any schools, residential area or other sensitive receptors such as hospitals, or locations where children or elderly people live or work.

(J) Designation of a person who can conduct a site inspection with the Executive Officer prior to issuance of the plan.

(K) Specify the operating schedule and maximum amount of VOC-contaminated soil proposed to be remediated on a daily basis.

(7) In approving a plan, the Executive Officer require reasonable conditions deemed necessary to ensure the operations comply with the plan and AQMD rules. The conditions may include, but shall not be limited to, procedures for ensuring responsibility for the implementation of the plan, accessibility to the site for AQMD staff, notification of actions required by the plan, identification of emission receptors, monitoring and testing, suppression and covering of stockpiles, prevention of public nuisance from VOC or dust emissions, prevention of fugitive emissions of VOC contaminated soil, loading of truck trailers, and disposal and treatment.

(8) In approving a plan, the Executive Officer may require any records deemed necessary to be maintained by the operator to demonstrate compliance with the plan. Such records shall be retained for at least 2 years and be made available to the Executive officer upon request.

APPENDIX D

This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.

Designation: D6009 – 19

Standard Guide for Sampling Waste Piles[1]

This standard is issued under the fixed designation D6009; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. Scope

1.1 This guide provides guidance for obtaining representative samples from waste piles. Guidance is provided for site evaluation, sampling design, selection of equipment, and data interpretation.

1.2 Waste piles include areas used primarily for waste storage or disposal, including above-grade dry land disposal units. This guide can be applied to sampling municipal waste piles.

1.3 This guide addresses how the choice of sampling design and sampling methods depends on specific features of the pile.

1.4 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.4.1 *Exception*—The inch-pound units in parentheses are included for information only and are not considered standard.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.6 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D1452/D1452M Practice for Soil Exploration and Sampling by Auger Borings

D1586/D1586M Test Method for Standard Penetration Test (SPT) and Split-Barrel Sampling of Soils

D1587/D1587M Practice for Thin-Walled Tube Sampling of Fine-Grained Soils for Geotechnical Purposes

D4547 Guide for Sampling Waste and Soils for Volatile Organic Compounds

D4687 Guide for General Planning of Waste Sampling

D4700 Guide for Soil Sampling from the Vadose Zone

D4823 Guide for Core Sampling Submerged, Unconsolidated Sediments

D5088 Practice for Decontamination of Field Equipment Used at Waste Sites

D5451 Practice for Sampling Using a Trier Sampler

D5681 Terminology for Waste and Waste Management

D5730 Guide for Site Characterization for Environmental Purposes With Emphasis on Soil, Rock, the Vadose Zone and Groundwater (Withdrawn 2013)[3]

D7758 Practice for Passive Soil Gas Sampling in the Vadose Zone for Source Identification, Spatial Variability Assessment, Monitoring, and Vapor Intrusion Evaluations

3. Terminology

3.1 *Definitions*—For definitions of terms used in this guide, refer to Terminology D5681.

3.2 *Definitions of Terms Specific to This Standard:*

3.2.1 *hot spots*—strata that contain high concentrations of the characteristic of interest and are relatively small in size when compared with the total size of the materials being sampled.

3.2.2 *waste pile*—unconfined storage of solid materials in an area of distinct boundaries, above grade and usually uncovered.

4. Significance and Use

4.1 This guide is intended to provide guidance for sampling waste piles. It can be used to obtain samples for waste characterization related to use, treatment, or disposal; to monitor an active pile; to prepare for closure of the waste pile; or to investigate the contents of an abandoned pile.

4.2 Techniques used to sample include both in-place evaluations of the pile and physically removing a sample. In-place

[1] This guide is under the jurisdiction of ASTM Committee D34 on Waste Management and is the direct responsibility of Subcommittee D34.01.01 on Planning for Sampling.

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[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

[3] The last approved version of this historical standard is referenced on www.astm.org.

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evaluations include techniques such as remote sensing, on-site gas analysis, and permeability.

4.3 Sampling strategy for waste piles is dependent on the following:

4.3.1 Project objectives, including acceptable levels of error when making decisions;

4.3.2 Physical characteristics of the pile, such as its size and configuration, access to all parts of it, and the stability of the pile;

4.3.3 Process that generated the waste and the waste characteristics, such as hazardous chemical or physical properties, whether the waste consists of sludges, dry powders, granules or larger grained materials, and the heterogeneity of the wastes;

4.3.4 History of the pile, including dates of generation, methods of handling and transport, and current management methods;

4.3.5 Regulatory considerations, such as regulatory classification and characterization data; and

4.3.6 Limits and bias of sampling methods, including bias that may be introduced by waste heterogeneity, sampling design, and sampling equipment.

4.4 It is recommended that this guide be used in conjunction with Guide D4687, which addresses sampling design, quality assurance, general sampling considerations, preservation and containerization, cleaning equipment, packaging, and chain of custody.

4.5 A case history of the investigation of a waste pile is included in Appendix X1.

5. Site Evaluation

5.1 Site evaluations are performed to assist in designing the most appropriate sampling strategy. An evaluation may consist of on-site surveys and inspections, as well as a review of historical data. Nonintrusive geophysical and remote sensing methods are particularly useful at this stage of the investigation. Table 1 summarizes the effects that various factors associated with the waste pile, such as the history of how the pile was generated, have upon the strategy and design of the sampling plan. The strategic and design considerations are discussed as well.

TABLE 1 Strategy Factors

Waste Pile Factors	Strategic Considerations	Design Considerations
Generation history	Date of generation	Analysis required
	Types of processes	Location of samples
	Characteristics by process	
	Delivery method	
	Current management	
	Regulatory considerations	
Physical characteristics of pile:	Physical variability of pile	Number of samples
–size	Access	Location of samples
–shape	Safety	Equipment selection
–stability		
Waste characteristics	Constituents present	Number of samples
	Constituent distribution	Analysis required
	Heterogeneity	Location of samples
	–physical variability	Representative samples
	–chemical variability	Equipment selection

5.2 *Generation History*—The waste pile may have been created over an extended time period. A remote sensing method that is very useful in establishing historical management practices for waste piles is aerial imagery. Aerial photographs and satellite imagery are widely available and may be used to determine the history of a waste pile, sources of waste, and the presence and distribution of different strata.

5.2.1 The date of generation could be important with respect to the types of processes that generated the waste, the characteristics of the waste, the distribution of the constituents, and regulatory concerns.

5.2.2 The type of process that generated the waste will determine the types of constituents that may be present in the waste pile. Chemical variability will influence the number of samples that are required to characterize the waste pile unless a directed (biased) sampling approach is acceptable.

5.2.3 The delivery method of the material to the waste pile could influence the concentrations of the constituents, affect the overall shape of the pile, or create physical dissimilarity within the waste pile through sorting by particle size or density.

5.2.4 If the pile is under current management and use, the variability in constituent types and concentrations may be affected. Current management activities also may influence the regulatory status of the waste pile, and therefore, the potential sampling protocols.

5.2.5 Regulatory considerations will typically focus on waste identification questions; in other words, “Is the material a solid waste that should be regulated and managed as a hazardous waste?” **(1)**.[4] This may involve a limited, directed sampling approach, particularly if a regulatory agency is conducting the investigation. A more comprehensive sampling design may be required to determine if the waste classifies as hazardous. Remediation efforts and questions regarding permits may focus on characterizing the entire pile, possibly as the removal of material is occurring. It should be noted that concentrations of contaminants near regulatory levels may increase the number of samples required to meet the objectives of the investigation. These regulatory levels could be those established to determine if a waste is hazardous, or “cleanup” levels set for a removal or remediation.

5.3 *Physical Characteristics of Pile*—Several physical characteristics of the waste pile must be considered during the site evaluation. Variability in size, shape, and stability of the pile affects access to it to obtain samples, as well as safety considerations. Physical variability will influence the number of samples that are required to characterize the waste pile unless a directed (biased) sampling approach is considered to be acceptable. Techniques that might be used include resistivity and seismic refraction (for determining the depth of very large piles).

5.3.1 The size of the waste pile will influence the sampling strategy in that increasing size is often accompanied by increased variability in the physical characteristics of the waste pile. The number of samples, however, that are needed to

[4] The boldface numbers in parentheses refer to the list of references at the end of this standard.

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characterize a waste pile adequately will typically be a function of the study objectives as well as the inherent variability of the pile.

5.3.2 The shape of the waste pile can influence the sampling strategy by limiting access to certain locations within the pile, and if it is topologically complex it is difficult to lay out a sampling grid. Also, a waste pile may extend vertically both above and below grade, making decisions regarding the depth of sample collection difficult.

5.3.3 The stability of the waste pile also can limit access to both the face and the interior of the pile. The use of certain types of heavier sampling equipment also could be limited by the ability of the pile to bear the weight of the equipment.

5.4 *Waste Characteristics:*

5.4.1 The constituents could include inorganics, volatile organic compounds (VOCs), and semivolatile organic compounds (including pesticides and polychlorinated biphenyls (PCBs)) (see Guide D4547). Specialty analyses may be warranted, such as leaching tests or analyses for dioxin/furans or explosive compounds. Soil gas sampling is a minimally intrusive technique that may detect the presence and distribution of volatile organic compounds in soils and in porous, unconsolidated materials. Appropriate applications for soil gas monitoring are identified in Practice D7758.

5.4.2 The distribution of constituents in the waste pile could be influenced by changes in the manufacturing process which resulted in changes in the composition of the waste; the length of time the material has remained in the pile (particularly for VOCs); the mode of delivery of the waste materials to the pile; and management practices, such as mixing together wastes from more than one process.

5.4.3 Physical and chemical variabilities would include variability in the chemical characteristics of the material within the pile, as well as variability in particle size, density, hardness, whether brittle or flexible, moisture content, consolidated, or unconsolidated. The variability may be random or found as strata of materials having different properties or containing different types or concentrations of constituents.

5.4.3.1 Geophysical survey methods may be used on piles to estimate physical homogeneity, which may or may not be related to chemical homogeneity, and to detect buried objects, both of which may need to be considered during the development of the sampling design and the safety plan for the investigation. The most suitable technique for detecting nonmetallic objects is electromagnetics. Ground-penetrating radar, a more sophisticated and complex technique, also may be considered. Electromagnetic techniques are suited particularly to large piles that contain leachate plumes (for example, mine tailings) or for the detection of large discontinuities in a pile (for example, different types of wastes or the transition from a disposal area to background soils). For metallic objects, metal detectors and magnetometers are useful and relatively easy to use in the field.

5.5 *Potential Investigation Errors:*

5.5.1 Equipment selection can bias sampling results even if the equipment is used properly. Bias can result from the incompatibility of the materials that the sampling equipment is made of with the materials being sampled. For example, the equipment could alter the characteristics of the sample. Some equipment will bias against the collection of certain particle sizes, and some equipment cannot penetrate the waste pile adequately.

5.5.2 Equipment, use, and operation can introduce error (bias) into the characterization of a waste pile. Sampling errors typically are caused when certain particle sizes are excluded, when a segment of the waste pile is not sampled, or when a location outside the pile is inadvertently sampled.

5.5.3 When stratification, layering, or solid phasing occurs it may be necessary to obtain and analyze samples of each of the distinct phases separately to minimize sampling bias. Care should be taken when sampling stratified layers to minimize cross contamination. Proper decontamination procedures should be used for all sampling equipment (see Practice D5088).

5.5.4 Statistical bias includes situations where the data are not normally distributed or when the sampling strategy does not allow the potential for every portion of the pile to be sampled.

6. Sampling Strategy

6.1 Developing a strategy for sampling a waste pile requires a thorough examination of the site evaluation factors listed in Section 5. The location and frequency of sampling (number of samples) should be outlined clearly in the sampling plan, as well as provisions for the use of special sampling equipment, access of heavy equipment to all areas of the pile, if necessary, and so forth.

6.1.1 *Representative Sampling*—The collection of a representative set of samples from a waste pile typically will be complicated by the presence of a number of the site evaluation factors **(2, 3)**.

6.1.2 *Heterogeneous Wastes*—Waste piles may be homogeneous, for applied purposes, or may be quite heterogeneous in particle size and contaminant distribution. If the particle sizes of the material in the waste pile and the distribution of contaminants are known, or can be estimated, then less sampling may be necessary to define the properties of interest in the waste pile. An estimate of the variability in contaminant distribution may be based on process knowledge or determined by preliminary sampling **(4)**. The more heterogeneous the waste pile is, the greater the planning and sampling requirements.

6.1.3 *Strata and Hot Spots*—A waste pile also could contain strata that have less internal variation in physical properties or concentrations of chemical constituents than the remainder of the waste pile **(2, 5)**. For example, strata may be present in a waste pile due to changes in the process that generated the waste, or if different processes at a facility contribute waste to different parts of the waste pile. A stratified sampling strategy would consider this situation by conducting independent sampling of each stratum, which could reduce the number of samples required. These strata could be in specific areas of the waste pile **(4)**. Also, hot spots may be present in the waste pile that are unique in composition **(2, 5)**.

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6.2 *Specific Sampling Strategies:*

6.2.1 Although the most appropriate method for evaluating material in waste piles is to sample at or immediately following the point of generation (for example, conveyor belt), most sampling problems involve existing or in-place waste piles. Therefore, the following discussion will focus on in-place waste piles. Sampling strategies available for waste piles include directed or judgmental sampling, simple random sampling, stratified random sampling, systematic grid sampling, and systematic sampling over time **(2, 6)**. General concerns about the collection of a representative sample, the existence of potential heterogeneity in the waste pile, the presence of strata within the waste pile, and the existence of distinct hot spots within the waste pile may also influence the selection of an appropriate sampling strategy and development of the sampling plan **(5)**. The following paragraphs provide an introduction to determining the appropriate number of samples to collect and the sampling strategies available for determining sample locations.

6.2.2 *Determining the Frequency or Number of Samples*—The frequency of sampling or the number of samples to collect typically will be based on several factors, including the study objectives, properties of wastes in the pile, degree of confidence required, access to sampling points, and budgetary constraints. Practical guidance for determining the number of samples is included in Guide D4687 and Refs **(2, 3)**.

6.2.3 *Directed Sampling*—Directed sampling (Fig. 1) is based on the judgment of the investigator and will not necessarily result in a sample that reflects the characteristics of the entire waste pile. Directed sampling also is called judgmental sampling, authoritative sampling, or nonprobability sampling. The experience of the investigator is often the basis for sample collection and, depending on the study objectives, bias should be recognized as a potential problem. For preliminary screening investigations of a waste pile and for certain regulatory investigations, however, directed sampling may be appropriate. A directed sampling strategy could call for the collection of a composite sample from the surface area or the collection of discrete grabs at the surface of the pile (see Fig. 1). Directed sampling would typically focus on worst-case conditions in a waste pile, for example, the most visually contaminated area or most recently generated waste.

6.2.4 *Simple Random Sampling*—Simple random sampling (Fig. 2) ensures that each element in the waste pile has an equal chance of being included in the sample **(2)**. This may be the method of choice when, for purposes of the investigation, the waste pile is randomly heterogeneous **(5)**. If the waste pile contains trends or patterns of contamination, a stratified random sampling or systematic grid sampling strategy would be more appropriate **(2)** (see 6.2.5 and 6.2.6).

6.2.4.1 A simple random approach could use a grid with random grids selected for sample collection (see Fig. 2). Note that the grid size could be selected based on the number of samples that are required (some guidance suggests having at least ten times the number of grids as samples required). Once the grid is overlaid and the sampling locations are selected, the decision must be made to collect either a discrete grab sample (surface), a composite of surface samples taken from predesignated locations within the grid cell (based on compass points), a vertical composite to a specified depth, or discrete grab samples at specified depths. If discrete grab samples are desired at specified depths, they typically would be collected at the same location as the bore hole is advanced into the pile. Fig. 2 illustrates the collection of vertical composites at each of the randomly selected locations.

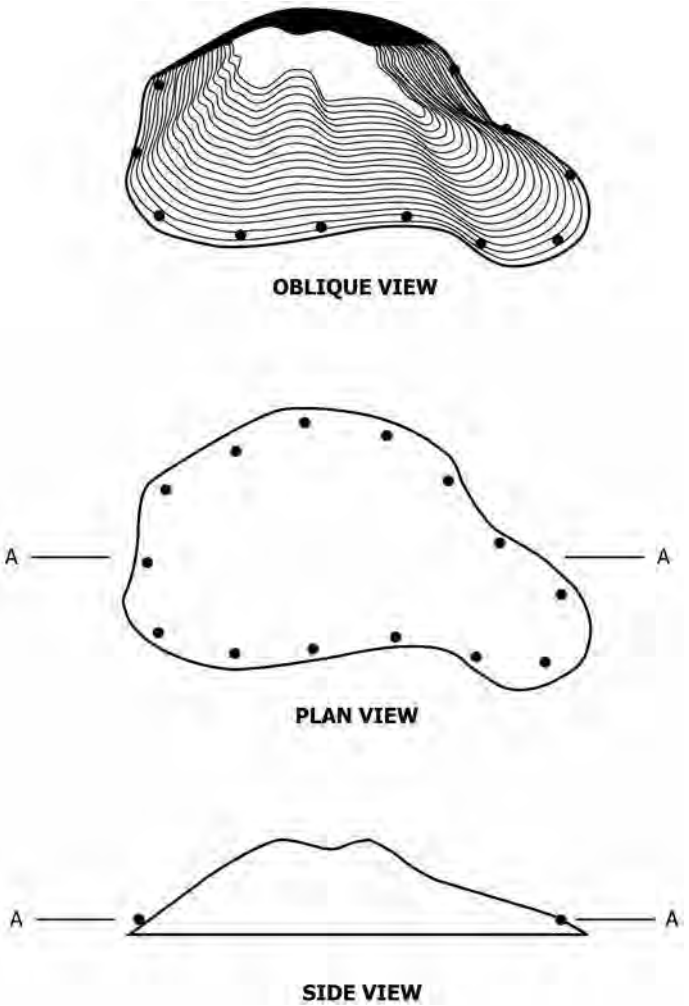


FIG. 1 Waste Pile Sampling Strategy – Directed Sampling

6.2.5 *Stratified Random Sampling*—Stratified random sampling (see Fig. 3) may be useful when distinct strata or homogeneous subgroups are identified within the waste pile **(2)**. The strata may be located in different areas of the pile or may be comprised of different layers (see Fig. 3). This approach is useful when the individual strata may be considered internally homogeneous or at least have less internal variation in what would otherwise be considered a heterogeneous waste pile **(2)**. Information on the waste pile usually is required to establish the location of individual strata unless process knowledge or changes in the composition of the material is obvious, such as with discoloration or with the type of waste. The grid may be utilized for sampling several horizontal layers if the strata are oriented horizontally **(4)**. A simple random sampling approach is then used within each stratum. The use of a stratified random sampling strategy may

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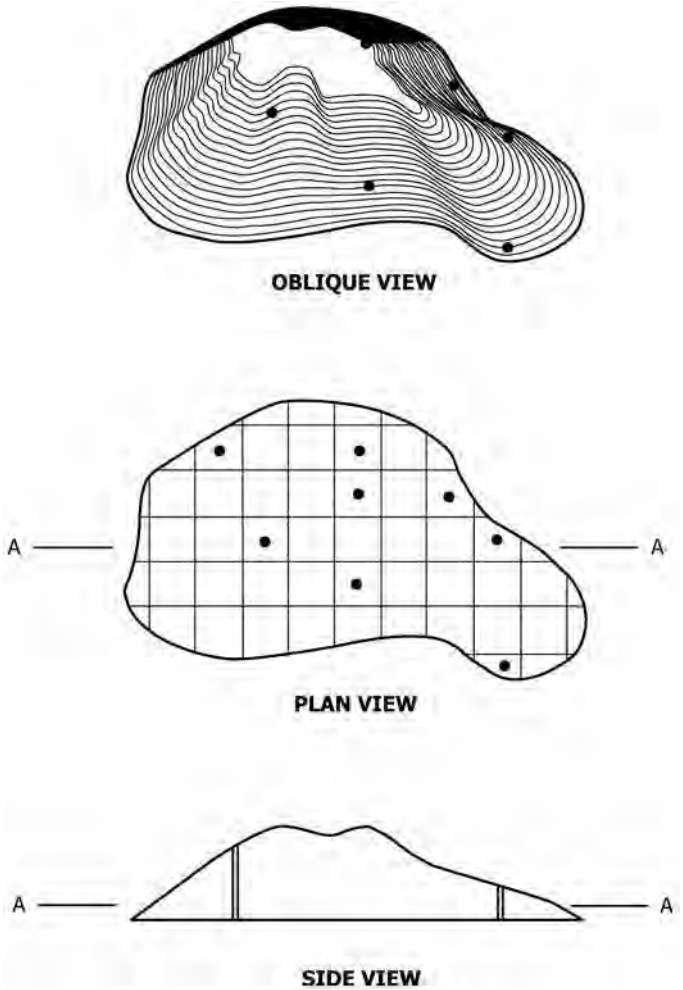


FIG. 2 Waste Pile Sampling Strategy – Simple Random Sampling

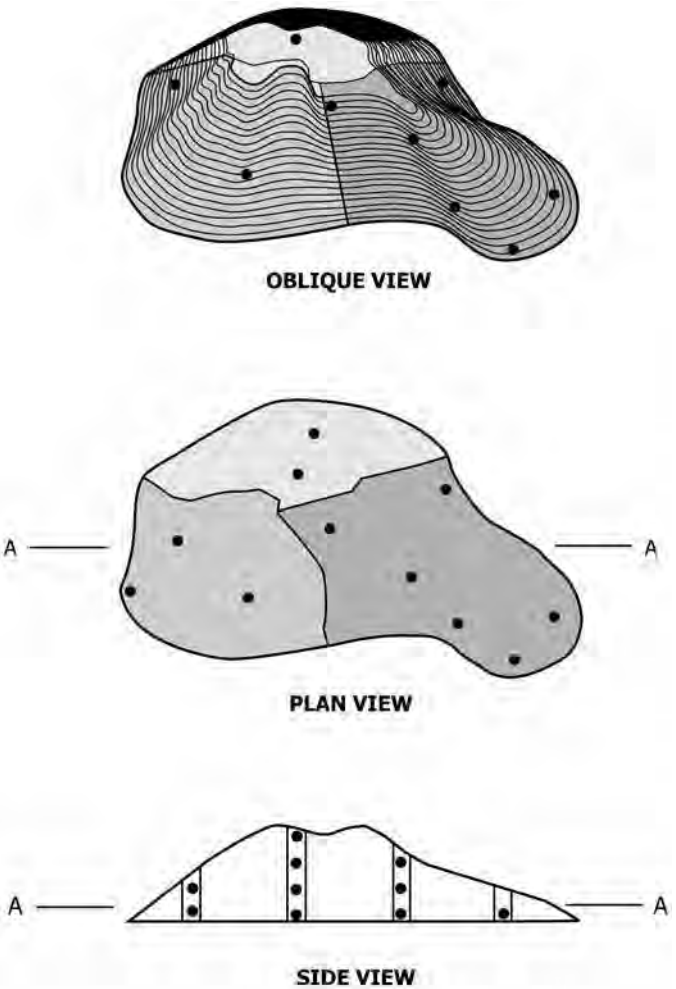


FIG. 3 Waste Pile Sampling Strategy – Stratified Random Sampling

result in the collection of fewer samples. Fig. 3 illustrates a scenario where the number of samples collected in each stratum varies (plan view), and discrete grabs are collected in each boring at predesignated depths (side view).

6.2.6 *Systemic Grid Sampling*—Systematic grid sampling (see Fig. 4) involves the collection of samples at fixed intervals and is useful when the contamination is assumed to be distributed randomly **(2)**. This method is also commonly used with waste piles when estimating trends or patterns of contamination or when the objective is to locate hot spots. This approach may not be acceptable if the entire waste pile is not accessible or if the sampling grid locations become phased with variations in the distribution of contaminants within the waste pile **(6)**. It also may be useful for identifying the presence of strata within the pile. The grid and starting points should be laid out randomly over the waste pile, yet the method allows for rather easy location of exact sample locations by means of the grid (see Fig. 4). The same considerations discussed in 6.2.4 concerning the depth of each sample (surface, vertical composite, discrete grabs at depth) also should be considered. Fig. 4 illustrates the collection of vertical composites at each grid, which could be difficult and costly. Also note that the grid size typically would be adjusted according to the number of samples that are required.

6.2.7 *Systematic Sampling Over Time*—Systematic sampling over time at the point of generation is useful if the material is being sampled from a conveyor belt or being delivered by means of truck or pipeline to the waste pile. The sampling interval can be determined on a time basis, for example, every hour from a conveyor belt or pipeline discharge, or from every third truck load. The time between intervals is influenced by the factors addressed in 6.2.2.

NOTE 1—This approach is the preferred sampling method to determine waste characteristics of process wastes since it provides for an unaffected and accurate representation of the wastes. This approach often is not possible, though, and practitioners then are required to sample the accumulated waste pile.

6.2.8 *Alternative Approach*—In many cases, an objective of waste pile characterization is to determine the impact of the pile on the environment. At times this may be accomplished more easily by sampling the routes by which contaminants are dispersed from the pile than through direct sampling of the pile, especially for piles that are difficult to characterize. For example, ground water up-and-down gradient from the pile could be sampled to check for ground water contamination. The vadose zone below the pile also might be sampled to detect leachate (and potential ground water contamination) through

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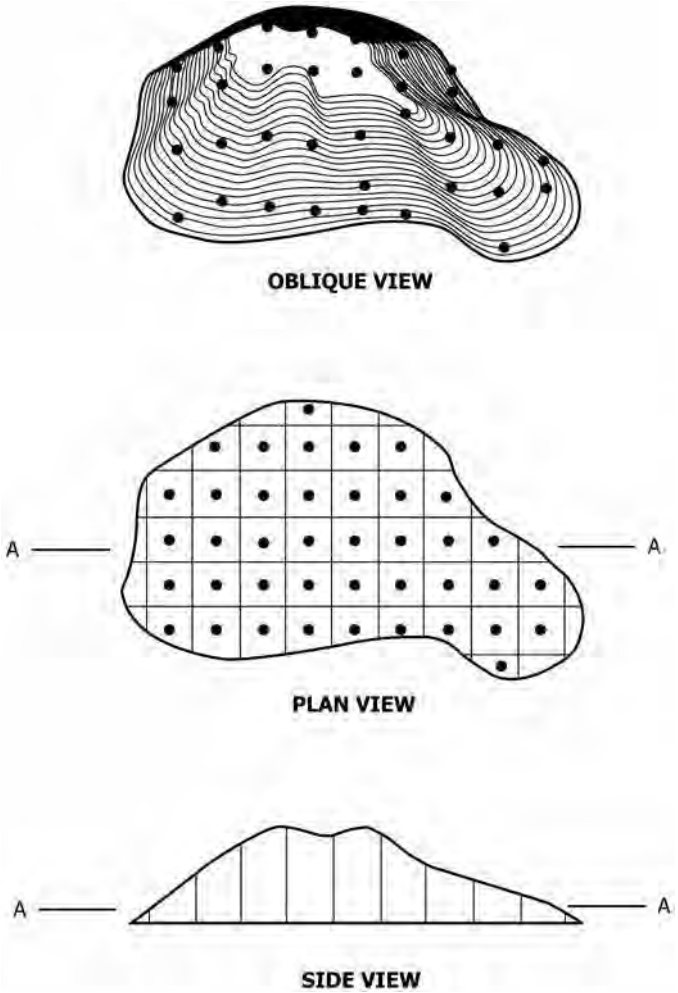


FIG. 4 Waste Pile Sampling Strategy – Systematic Grid Sampling

soil sampling, vacuum lysimeters, or soil gas. Surface water and sediment in drainage channels down gradient from the pile also might be sampled. Surface soils, air samples, and contaminants deposited on vegetation can be used as indicators of atmospheric transport of contaminants from the pile, including both particulate and volatile materials. Such approaches will seldom replace pile sampling completely, but they may reduce the number of pile samples needed to make remedial action decisions (see Guide D5730, also Refs **(7-9)**).

7. Selection of Sampling Equipment

7.1 Wastes in piles are often complex, multiphase mixtures of solids and semisolids. The wastes can range from powders to granules to large, heterogeneous solid fragments and can cover many acres in area. No single type of sampler can be used to collect representative samples of all types of waste from piles. Large, thick piles may require drill rigs to obtain samples from depth. The sampling of gases from within the pile requires other types of equipment. Table 2 lists typical waste types and the corresponding recommended samplers to use.

7.2 Sampling at depth from inside the pile may require heavy equipment designed for excavation or removal of soil or rock. Table 3 lists such equipment and its applications for sampling waste piles **(10)**.

7.3 Sampling equipment should be constructed of materials that are compatible with the waste to be sampled. Compatibility refers to the physical durability, lack of chemical reactivity with the waste, and lack of potential for contamination of the waste with analytes of concern. Typical materials of construction include stainless steel, plastic, and glass.

8. Data Use

8.1 The decisions that will be made based upon the data must be identified early in the planning process since these affect the approach to the problem and how the data will be

TABLE 2 Sampling Devices Suitable for Waste Piles[A]

Location and Waste Type	Sampling Devices	ASTM Standard	Limitations
Subsurface			
Powdered, granular, or soil-like solids; sludges	Split-barrel push coring device	D1586/D1586M D1587/D1587M D4700 D4823	Limited application for sampling moist and sticky solids, or particles with diameter 0.6 cm (0.25 in.) or more. Depth limitation of about 1 m.
	Trier	D5451	May not retain core sample of very dry granular materials. Not applicable to sampling solid wastes with particle diameter >½ the diameter of the sampling tube.
	Auger	D1452/D1452M D4700	Does not collect undisturbed sample.
	Thin-walled tube sampler	D4823 D4700	Collects relatively undisturbed core. Difficult to use on gravelly or rocky soils.
	Drill rigs		Used for geoenvironmental exploration. To minimize sample contamination, avoid those using a water-based drilling fluid.
	Soil gas samplers	D7758	Used for volatile organic compounds.
Surface			
Powdered, granular, or soil-like solids; sludges	Trowel or scoop	D4700	Difficult to obtain reproducible mass of sample. May exclude certain particle sizes, especially large aggregates.
Slag	Hammer/chisel Impact device		Changes particle size.

[A] This table is not all inclusive; other equipment may be used.

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TABLE 3 Excavation and Removal Equipment for Waste Piles

Excavation and Removal Equipment	General Excavation	Ability to Excavate Hard and Compacted Material	Soil Hauling	Mixing of Solids, Soil	Spreading Cover	Site Maneuverability
Wheel or crawler Mounted backhoe	A[A]	A	B[B] /O[C]	A	A	A/B
Wheel or crawler Mounted front-end loader	A	A	A/B	A	A	A/B
Skid steer loader	A	B	B	A	B	A
Bulldozer	A	A	O	O	A	B

[A] A = Good choice. Equipment is fully capable of performing function listed.
[B] B = Secondary choice. Equipment is marginally capable of performing function listed.
[C] O = Not applicable or poor choice.

evaluated. Decisions affecting waste classification, closure, and post-closure issues are examples of the uses of the data. Methods to determine the volume of contaminated material in a pile or pile strata may be needed. Standard mathematical formulas for calculating the volume of a cone, cylinder, various prisms, and so forth, may be used.

8.2 *Statistical Considerations:*

8.2.1 Data quality assessment (DQA) methods are used to evaluate the data for any anomalies and to evaluate the assumptions for statistical evaluation. The statistician makes use of both subjective judgment (graphical analysis for identification of trends and anomalies) and statistical models and inference (for example, outlier detection, autocorrelation estimation) in the investigation of data for validity of the assumptions needed to make a statistical test. Classical statistical models assume that the samples collected from the population of interest are independent and have an identical probability distribution (that is, normal distribution with constant mean and variance). Random sampling is a method to ensure independence. The probability distributional assumptions are part of DQA that will determine if the classical statistical model is appropriate for the collected data. For directed sampling, the sampling is subjective and the sample results are typically judged on a qualitative basis.

8.2.2 Simple random sampling will provide an unbiased estimate of the average waste concentration, that is, an estimate of the mean. This unbiased estimate is independent of the geometry of the pile and of the distribution of the concentration of the contaminants, but it may not have the smallest variance. Other sampling designs, such as systematic grid sampling or stratified random sampling, may provide an average that has a smaller variance. If the waste pile has uneven topography, the calculation of the mean concentration of the pile should be a volume-weighted average, using core volume as the weighting factor to reduce the variance of the estimated mean.

8.2.2.1 For simple random sampling and systematic grid sampling designs, histogram and normal probability plots of the sample data can be used to judge if the data conform to normal distribution. If not, there are several alternatives. First, the classical statistical model may still be considered robust for the decision-making process. Second, a transformation of the data may approximate a normal distribution of the data. For example, logarithmic transformation will normalize data that are lognormal originally. If the data are lognormal, the question of whether to use the arithmetic mean or the geometric mean for decision-making purposes must be decided. Third, an alternative statistical model based on nonparametric methods, but which uses weaker assumptions, may be proposed to analyze the decision-making process. It may be advisable to consult a statistician.

8.2.2.2 For the stratified random sampling design, the test of normality is not straightforward. Generally, it requires a mathematical model to take out the strata effects first, then test for normality using the residuals. A statistician should be consulted.

8.2.2.3 In any of these cases, alternative consequences of the level of uncertainty can be calculated prior to collecting the data. These alternatives can be used by decision makers to select the best strategy to minimize the environmental risks.

9. Keywords

9.1 piles; sampling; waste

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APPENDIX

(Nonmandatory Information)

X1. WASTE PILE – A CASE HISTORY

X1.1 *Background*—The waste pile was generated by a facility that produces brass alloys from scrap metal. The byproduct from this operation was slag, which was generated in the recovery furnace. The slag was ground subsequently in a ball mill prior to being reintroduced into the recovery furnace. A large amount of the ground slag was disposed of in a waste pile which covered about one acre. No active management was occurring with the waste pile. No buried containers or extremely heterogeneous material (unground slag) was suspected of being present in the waste pile based on facility records and interviews of personnel.

X1.1.1 Lead and cadmium were the constituents of concern based on process knowledge, and the possibility for the waste being hazardous was the regulatory consideration. The potential for off-site migration of contaminants was also an immediate concern, and this was considered in the development of the Phase 1 study design. Fig. X1.1 shows a site map of the facility and the slag pile. Fig. X1.2 shows a computer enhancement of the slag pile, and Fig. X1.3 shows a topographic view of the pile.

X1.2 Phase 1

X1.2.1 *Objective*—The primary objective of the initial investigation was to determine if the slag in the waste pile classified as hazardous based on the concentration of lead and cadmium in a leach test. A secondary objective was to provide preliminary information on the potential migration and transport of contaminants from the waste pile off-site. The sampling plan for this initial investigation utilized a directed sampling strategy to provide a preliminary estimate of the lead concentration in the waste, the variability of contaminant concentrations in the pile, and the potential for leaching using the applicable leaching procedure mandated in regulations. Four composite samples were collected from the surface (0 to 15 cm or 0 to 6 in.) of the waste pile at locations within the four quadrants. The following environmental samples were also collected:

X1.2.1.1 Several soil samples in the vicinity of the waste pile,

X1.2.1.2 Sediment upstream and downstream in a stream which borders the facility,

X1.2.1.3 Sediment in a ditch which contained runoff from the pile, and

X1.2.1.4 Two background soil samples.

X1.2.2 Fig. X1.4 shows the Phase 1 sampling locations within the slag pile, and Fig. X1.5 shows the same sampling locations on the topographic map of the pile.

X1.2.3 *Results*—Zinc, copper, cadmium, and lead were all elevated (compared to background) in the samples collected from the waste pile, and the concentrations did not appear to vary significantly between the samples. Since lead and cadmium are regulated constituents, a leach test was completed, and the lead results exceeded the regulatory level of 5 mg/L. Cadmium was just under the regulatory level of 1.0 mg/L. Lead and cadmium concentrations in the soil were two to three times above background, and the drainage ditch and downstream sediment sample also had elevated lead and cadmium levels.

X1.2.4 *Conclusion*—The waste pile contained slag that is hazardous for lead. The waste pile required further characterization to determine the variability in the pile. The presence of lead and cadmium in soils and the stream sediment downstream of the facility was confirmed and should be investigated further to determine the extent of contaminant transport.

X1.3 Phase 2

X1.3.1 *Objective*—The objective is to characterize the waste pile further using a systematic grid sampling design. This design will delineate horizontal and vertical variability in lead and cadmium concentrations. The Phase 1 investigation also provided a good estimate of the anticipated variability in the waste pile. The number of samples required to characterize the waste pile adequately was calculated based on the average concentration, the anticipated variability, the regulatory level of concern, and the specified confidence interval. The grid size then was adjusted to accommodate the projection on the required number of samples. Composite samples were collected within each grid cell based on one center point and eight points on the compass (45° intervals) equidistant from the center point. Ten percent of the grids were designated for vertical as well as surface (0 to 15 cm or 0 to 6 in.) sample collection. Additionally, 10 % of the grids were designated randomly for duplicate sampling (using a different aliquot pattern) to check the preliminary estimate on the variability. Additional environmental sampling was conducted but will not be covered in this discussion.

X1.3.2 *Results*—The results supported the initial Phase 1 investigation with lead consistently exceeding the regulatory level. Cadmium consistently was below the regulatory level.

X1.3.3 *Conclusion*—The waste pile was characteristic for lead and classified as hazardous according to the applicable regulations. There was no significant variability with depth, although several gradients were noticed across the grid based on lead concentration (scan) results.

X1.4 Phase 3

X1.4.1 *Objective*—The objective is to determine the volume of the waste pile in order to estimate both the disposal cost and the total amount of the civil penalty to be charged to the owner of the pile. The waste pile was surveyed using standard surveying techniques.

X1.4.2 *Results*—The results were used to calculate the volume using geometric principles. Also, a computer program

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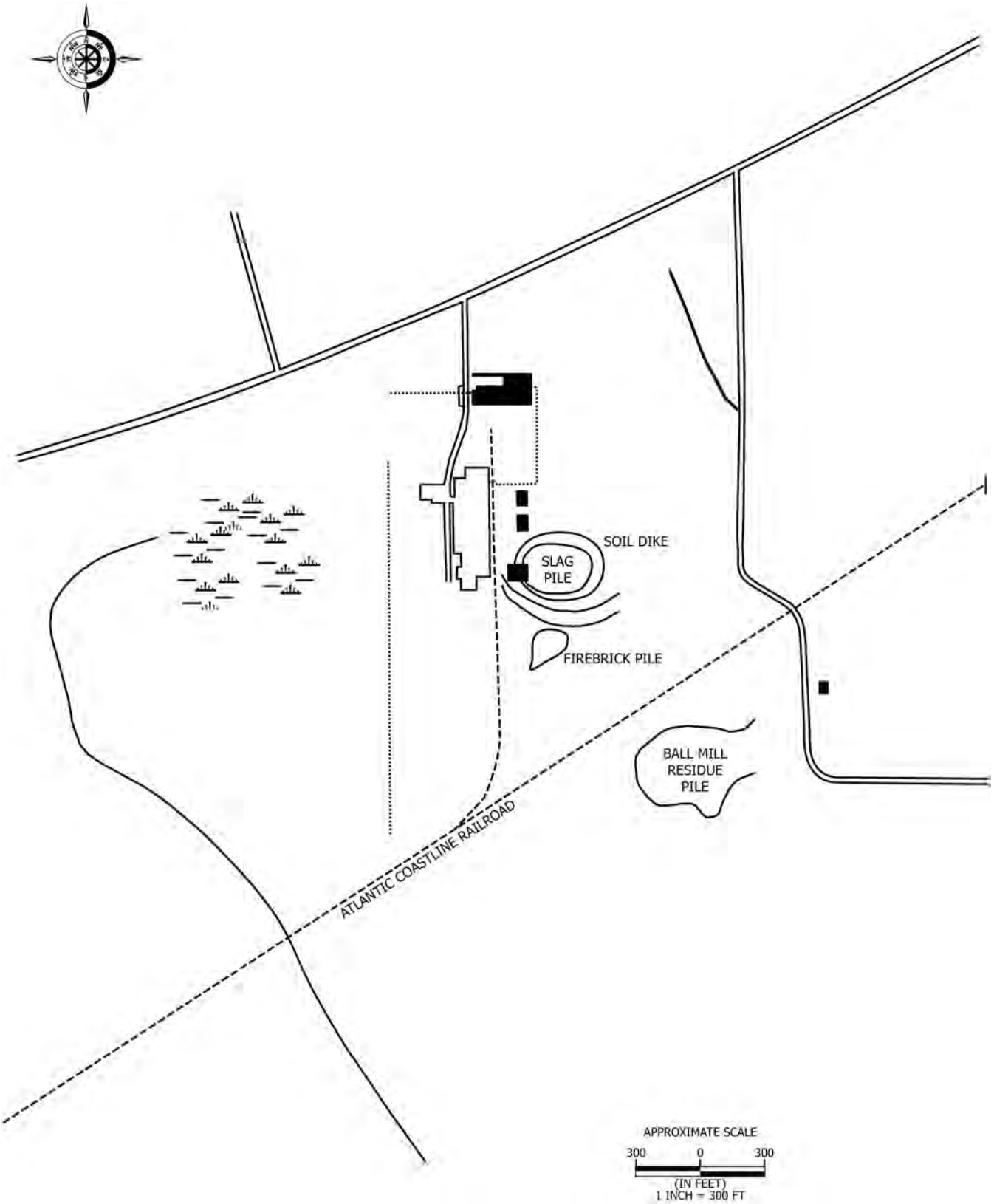


FIG. X1.1 Site Map

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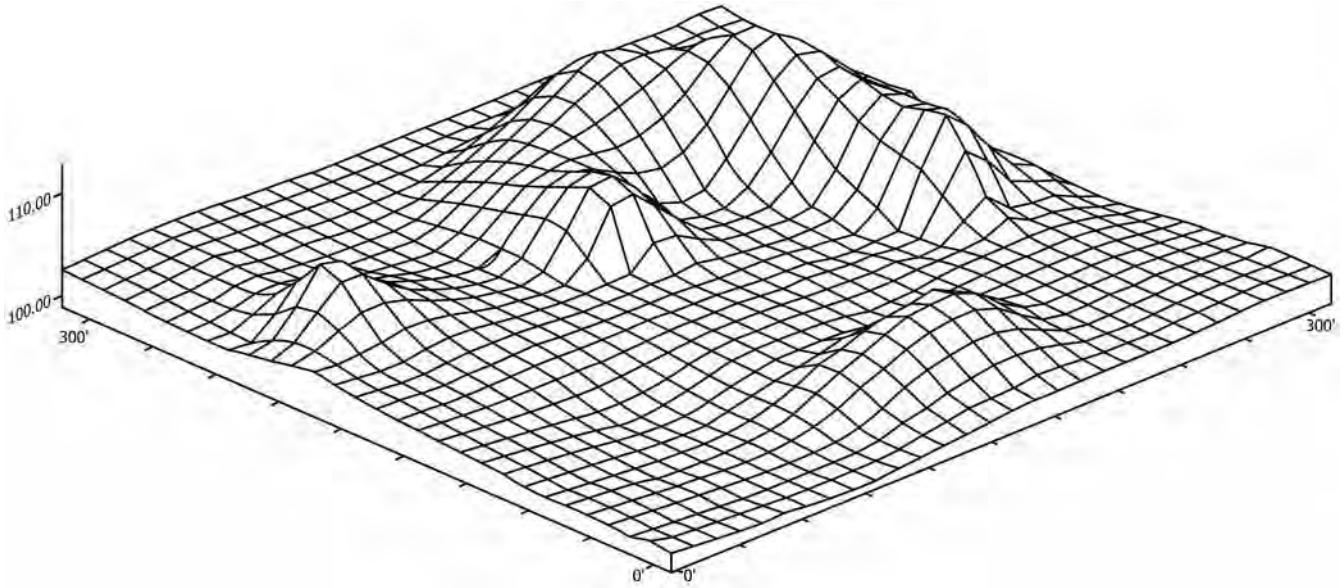


FIG. X1.2 Computer Enhancement of the Slag Pile (Front View) Scale 1:1:2

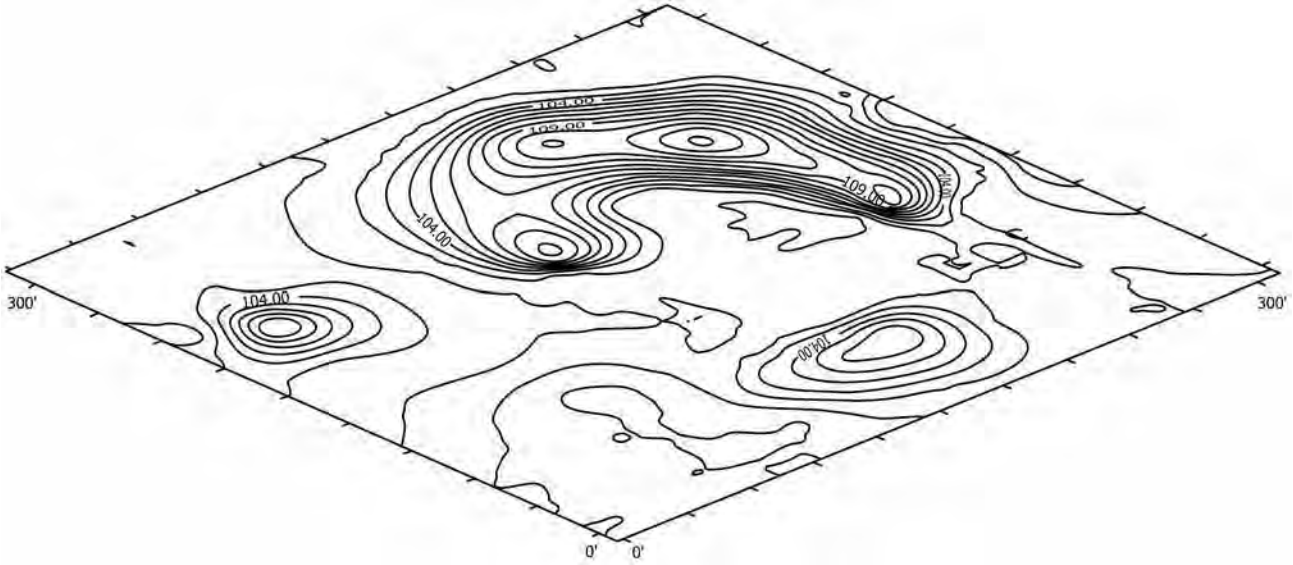


FIG. X1.3 Topographic View of the Slag Pile

was utilized which constructs contours based on the surveying information. The computer program was used as a check of the manual method, which produced a result that was 10 % higher in volume than the computer program.

X1.4.3 *Conclusion*—For penalty calculation purposes, the smaller estimate was utilized; however, the actual treatment and disposal costs could reflect the larger estimate.

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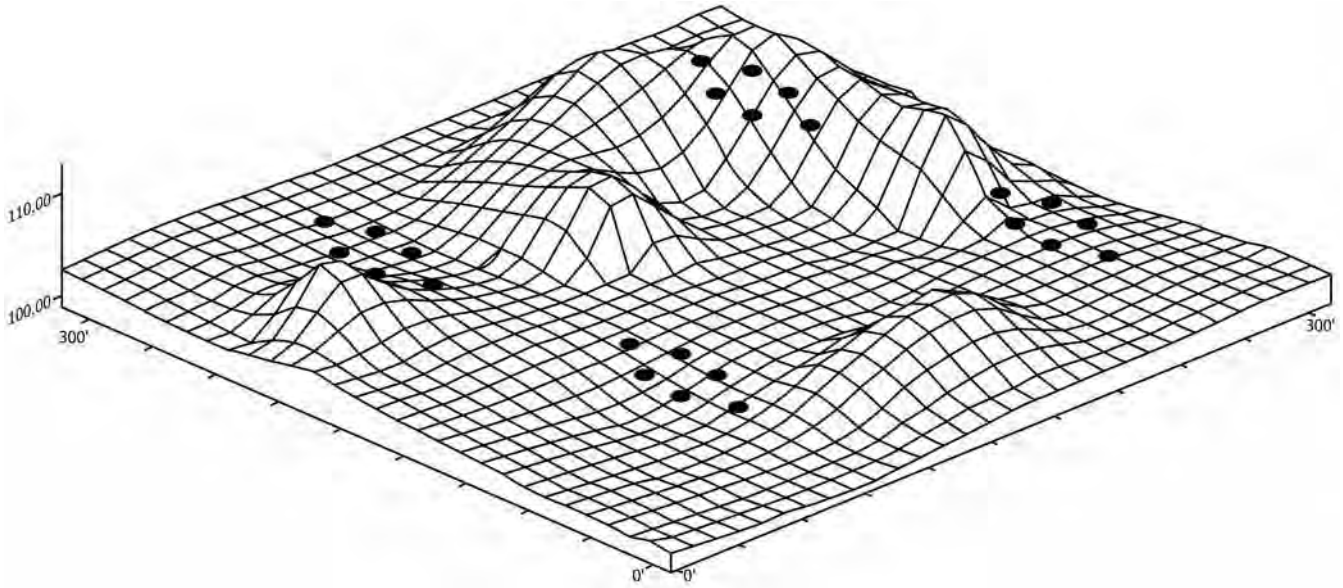


FIG. X1.4 Front View of the Slag Pile Showing Sampling Locations Scale 1:1:2

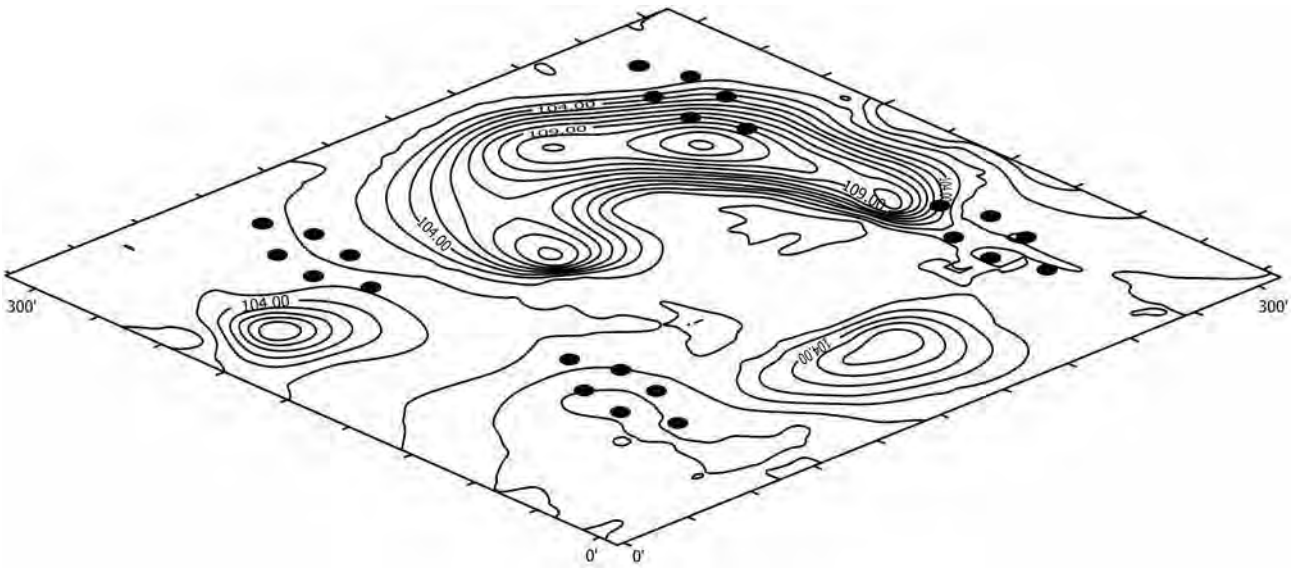


FIG. X1.5 Topographic View of the Slag Pile Showing Sampling Locations

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APPENDIX E

Information Advisory
Clean Imported Fill Material

October 2001

DEPARTMENT OF TOXIC SUBSTANCES CONTROL

It is DTSC's mission to restore, protect and enhance the environment, to ensure public health, environmental quality and economic vitality, by regulating hazardous waste, conducting and overseeing cleanups, and developing and promoting pollution prevention.

State of California

California Environmental Protection Agency

Executive Summary

This fact sheet has been prepared to ensure that inappropriate fill material is not introduced onto sensitive land use properties under the oversight of the DTSC or applicable regulatory authorities. Sensitive land use properties include those that contain facilities such as hospitals, homes, day care centers, and schools. This document only focuses on human health concerns and ecological issues are not addressed. It identifies those types of land use activities that may be appropriate when determining whether a site may be used as a fill material source area. It also provides guidelines for the appropriate types of analyses that should be performed relative to the former land use, and for the number of samples that should be collected and analyzed based on the estimated volume of fill material that will need to be used. The information provided in this fact sheet is not regulatory in nature, rather is to be used as a guide, and in most situations the final decision as to the acceptability of fill material for a sensitive land use property is made on a case-by-case basis by the appropriate regulatory agency.

Introduction

The use of imported fill material has recently come under scrutiny because of the instances where contaminated soil has been brought onto an otherwise clean site. However, there are currently no established standards in the statutes or regulations that address environmental requirements for imported fill material. Therefore, the California Environmental Protection Agency, Department of Toxic Substances Control (DTSC) has prepared this fact sheet to identify procedures that can be used to minimize the possibility of introducing contaminated soil onto a site that requires imported fill material. Such sites include those that are undergoing site remediation, corrective action, and closure activities overseen by DTSC or the appropriate regulatory agency. These procedures may also apply to construction projects that will result in sensitive land uses. The intent of this fact sheet is to protect people who live on or otherwise use a sensitive land use property. By using this fact sheet as a guide, the reader will minimize the chance of introducing fill material that may result in potential risk to human health or the environment at some future time.

Overview

Both natural and manmade fill materials are used for a variety of purposes. Fill material properties are commonly controlled to meet the necessary site specific engineering specifications. Because most sites requiring fill material are located in or near urban areas, the fill materials are often obtained from construction projects that generate an excess of soil, and from demolition debris (asphalt, broken concrete, etc.). However, materials from those types of sites may or may not be appropriate, depending on the proposed use of the fill, and the quality of the assessment and/or mitigation measures, if necessary. Therefore, unless material from construction projects can be demonstrated to be free of contamination and/or appropriate for the proposed use, the use of that material as fill should be avoided.

Selecting Fill Material

In general, the fill source area should be located in nonindustrial areas, and not from sites undergoing an environmental cleanup. Nonindustrial sites include those that were previously undeveloped, or used solely for residential or agricultural purposes. If the source is from an agricultural area, care should be taken to insure that the fill does not include former agricultural waste process byproducts such as manure or other decomposed organic material. Undesirable sources of fill material include industrial and/or commercial sites where hazardous ma-

Potential Contaminants Based on the Fill Source Area

Fill Source:	Target Compounds
Land near to an existing freeway	Lead (EPA methods 6010B or 7471A), PAHs (EPA method 8310)
Land near a mining area or rock quarry	Heavy Metals (EPA methods 6010B and 7471A), asbestos (polarized light microscopy), pH
Agricultural land	Pesticides (Organochlorine Pesticides: EPA method 8081A or 8080A; Organophosphorus Pesticides: EPA method 8141A; Chlorinated Herbicides: EPA method 8151A), heavy metals (EPA methods 6010B and 7471A)
Residential/acceptable commercial land	VOCs (EPA method 8021 or 8260B, as appropriate and combined with collection by EPA Method 5035), semi-VOCs (EPA method 8270C), TPH (modified EPA method 8015), PCBs (EPA method 8082 or 8080A), heavy metals including lead (EPA methods 6010B and 7471A), asbestos (OSHA Method ID-191)

**The recommended analyses should be performed in accordance with USEPA SW-846 methods (1996). Other possible analyses include Hexavalent Chromium: EPA method 7199*

Recommended Fill Material Sampling Schedule

Area of Individual Borrow Area	Sampling Requirements
2 acres or less	Minimum of 4 samples
2 to 4 acres	Minimum of 1 sample every 1/2 acre
4 to 10 acres	Minimum of 8 samples
Greater than 10 acres	Minimum of 8 locations with 4 subsamples per location
Volume of Borrow Area Stockpile	**Samples per Volume**
Up to 1,000 cubic yards	1 sample per 250 cubic yards
1,000 to 5,000 cubic yards	4 samples for first 1000 cubic yards +1 sample per each additional 500 cubic yards
Greater than 5,000 cubic yards	12 samples for first 5,000 cubic yards + 1 sample per each additional 1,000 cubic yards

terials were used, handled or stored as part of the business operations, or unpaved parking areas where petroleum hydrocarbons could have been spilled or leaked into the soil. Undesirable commercial sites include former gasoline service stations, retail strip malls that contained dry cleaners or photographic processing facilities, paint stores, auto repair and/or painting facilities. Undesirable industrial facilities include metal processing shops, manufacturing facilities, aerospace facilities, oil refineries, waste treatment plants, etc. Alternatives to using fill from construction sites include the use of fill material obtained from a commercial supplier of fill material or from soil pits in rural or suburban areas. However, care should be taken to ensure that those materials are also uncontaminated.

Documentation and Analysis

In order to minimize the potential of introducing contaminated fill material onto a site, it is necessary to verify through documentation that the fill source is appropriate and/or to have the fill material analyzed for potential contaminants based on the location and history of the source area. Fill documentation should include detailed information on the previous use of the land from where the fill is taken, whether an environmental site assessment was performed and its findings, and the results of any testing performed. It is recommended that any such documentation should be signed by an appropriately licensed (CA-registered) individual. If such documentation is not available or is inadequate, samples of the fill material should be chemically analyzed. Analysis of the fill material should be based on the source of the fill and knowledge of the prior land use.

Detectable amounts of compounds of concern within the fill material should be evaluated for risk in accordance with the DTSC Preliminary Endangerment Assessment (PEA) Guidance Manual. If

metal analyses are performed, only those metals (CAM 17 / Title 22) to which risk levels have been assigned need to be evaluated. At present, the DTSC is working to establish California Screening Levels (CSL) to determine whether some compounds of concern pose a risk. Until such time as these CSL values are established, DTSC recommends that the DTSC PEA Guidance Manual or an equivalent process be referenced. This guidance may include the Regional Water Quality Control Board's (RWQCB) guidelines for reuse of non-hazardous petroleum hydrocarbon contaminated soil as applied to Total Petroleum Hydrocarbons (TPH) only. The RWQCB guidelines should not be used for volatile organic compounds (VOCs) or semi-volatile organic compounds (SVOCS). In addition, a standard laboratory data package, including a summary of the QA/QC (Quality Assurance/Quality Control) sample results should also accompany all analytical reports.

When possible, representative samples should be collected at the borrow area while the potential fill material is still in place, and analyzed prior to removal from the borrow area. In addition to performing the appropriate analyses of the fill material, an appropriate number of samples should also be determined based on the approximate volume or area of soil to be used as fill material. The table above can be used as a guide to determine the number of samples needed to adequately characterize the fill material when sampled at the borrow site.

Alternative Sampling

A Phase I or PEA may be conducted prior to sampling to determine whether the borrow area may have been impacted by previous activities on the property. After the property has been evaluated, any sampling that may be required can be determined during a meeting with DTSC or appropriate regulatory agency. However, if it is not possible to analyze the fill material at the borrow area or determine that it is appropriate for use via a Phase I or PEA, it is recommended that one (1) sample per truckload be collected and analyzed for all compounds of concern to ensure that the imported soil is uncontaminated and acceptable. (See chart on Potential Contaminants Based on the Fill Source Area for appropriate analyses). This sampling frequency may be modified upon consultation with the DTSC or appropriate regulatory agency if all of the fill material is derived from a common borrow area. However, fill material that is not characterized at the borrow area will need to be stockpiled either on or off-site until the analyses have been completed. In addition, should contaminants exceeding acceptance criteria be identified in the stockpiled fill material, that material will be deemed unacceptable and new fill material will need to be obtained, sampled and analyzed. Therefore, the DTSC recommends that all sampling and analyses should be completed prior to delivery to the site to ensure the soil is free of contamination, and to eliminate unnecessary transportation charges for unacceptable fill material.

Composite sampling for fill material characterization may or may not be appropriate, depending on quality and homogeneity of source/borrow area, and compounds of concern. Compositing samples for volatile and semivolatile constituents is not acceptable. Composite sampling for heavy metals, pesticides, herbicides or PAH's from unanalyzed stockpiled soil is also unacceptable, unless it is stockpiled at the borrow area and originates from the same source area. In addition, if samples are composited, they should be from the same soil layer, and not from different soil layers.

When very large volumes of fill material are anticipated, or when larger areas are being considered as borrow areas, the DTSC recommends that a Phase I or PEA be conducted on the area to ensure that the borrow area has not been impacted by previous activities on the property. After the property has been evaluated, any sampling that may be required can be determined during a meeting with the DTSC.

For further information, call Shahir Haddad, P.E. at (714) 484-5368.

STORMWATER POLLUTION PREVENTION PLAN

for

GIC Vernon

Project Location:



WDID: 572006
RISK LEVEL: 2

Legally Responsible Person (LRP):
GIC Vernon LLC
3333 Michelson Drive, Suite 1050
Irvine, CA 92612
Vincent Martino, Construction Project Manager
805-598-2938

Project Address:
3049 East Vernon Avenue
Vernon, CA 90058
Site Operating Hours:
7:00 AM – 7:00 PM

Estimated Project Dates:
Start of Construction: July 2023
Completion of Construction: July 2026

SWPPP Prepared by:
Langan CA, Inc.
515 S Flower Street, Suite 1060
Los Angeles, CA 90071
SWPPP Preparation Date:
April 2024

QSD Name and Signature:

K. Kliphuis

Katherine Kliphuis

Contact Information

Role	Name	Phone Number	License or Certification Number, if Applicable
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Qualified SWPPP Practitioner (QSP)	Tianyu Crocker	415-955-5270	27352
Qualified SWPPP Practitioner (QSP)			
QSP Delegate			
QSP Delegate			
QSP Delegate			
QSP Delegate			

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Qualified SWPPP Developer

Approval and Certification of the Stormwater Pollution Prevention Plan

Project Name:	GIC Vernon
Project Number/ID:	572006

"This Stormwater Pollution Prevention Plan and its appendices were prepared under my direction to meet the requirements of the California Construction Stormwater General Permit (*Order No. 2022-0057-DWQ*). I certify that I am a Qualified SWPPP Developer in good standing as of the date signed below and will maintain up to date credentials for the duration of the project."



QSD Signature	*Date*
Katherine Kliphuis	C94386
QSD Name	*QSD Certificate Number*
Senior Project Manager	(213) 314-8125
Title and Affiliation	*Telephone Number*
kfraser@langan.com	
Email	

Amendment Log

Project Name: GIC Vernon

Project Number/ID: 572006

Amendment No.	Date	Brief Description of Amendment (include section and page number)	Prepared and Approved By
			Name: QSD#
			Name: QSD#
			Name: QSD#

The SWPPP will be revised when:

- There is a 2022 CGP violation (2022 CGP Section VI.Q.1);
- There is a reduction or increase in total disturbed acreage (2022 CGP Section III.F.2. and F.4);
- BMPs are not effective and are not resulting in a reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges (2022 CGP Section VI.Q.1 and Attachment E Section III.C.5);
- There is a change in the project duration that changes the project Risk Type (2022 CGP Section III.F.1);
- Dischargers with projects where all construction activities (including passive treatment, active treatment systems, and/or active equipment) will be suspended for 30 days or more (2022 CGP Section III.G);
- There is a change in construction or operations that may affect the discharge of pollutants to surface waters, groundwater(s), or a municipal separate storm sewer system (MS4) (2022 CGP Sections IV.O. and VI.Q.1); or

When deemed necessary by the QSD. The QSD has determined that the changes listed in Table 1-1 can be field determined by the QSP. All other changes will be made by the QSD as formal amendments to the SWPPP. Note that the 2022 CGP requires that the QSD "revise the SWPPP to address potential problems identified by visual inspections, sampling data, comments from a QSP, or their own site observations (2022 CGP Section V.C.2.).

SWPPP Amendment QSD Certifications are located in Appendix C.

Section 1 SWPPP Requirements

1.1 INTRODUCTION

This Stormwater Pollution Prevention Plan (SWPPP) is designed to comply with California's *General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities (2022 CGP),* State Water Resources Control Board (State Water Board) *Order No. 2022-0057-DWQ (NPDES No. CAS000002)* (Appendix S). This SWPPP has been prepared following the 2022 CGP SWPPP Template for Traditional Projects provided in the California Stormwater Quality Association (CASQA) Stormwater *Best Management Practice (BMP) Handbook: Construction* (CASQA 2023).

This project is considered a traditional construction project.

In accordance with the 2022 CGP, Section IV.O, this SWPPP is designed to address the following:

- Identification of all pollutants, their sources, and control mechanisms, including sources of sediment associated with all construction activities (e.g., sediment, paint, cement, stucco, cleaners, site erosion);
- Pollutant source assessments, including a list of potential pollutant sources and identification of site areas where additional BMPs are necessary to reduce or prevent pollutants in stormwater and authorized non-stormwater discharges, per the minimum requirements when developing the pollutant source assessment;
- Description of site-specific BMPs implemented to reduce or eliminate stormwater pollution;
- Where not otherwise required to be under a Regional Water Quality Control Board (Regional Water Board) permit, all non-stormwater discharges are identified and either eliminated, controlled, or treated;
- Site BMPs are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges from construction activity to the Best Available Technology/Best Control Technology (BAT/BCT) standard; and;
- Stabilization BMPs are installed to reduce or eliminate pollutants after construction is completed are effective and maintained; and
- Calculations and design details, as well as BMP controls, are complete and correct.

The GIC Vernon project comprises approximately 27.7 acres, all of which will be disturbed. The Project is located at 3049 E Vernon Avenue in Vernon, California. The property is owned and is being developed by GIC Vernon LLC. The project's location is shown on the Site Maps in Appendix A.

The project area is currently covered under 2009 CGP WDID 4 19C401525 for construction period 7/31/2023-7/31/2026. The project is adding cold storage building and offsite street area into the total disturbed area so that the project is applying for 2022 CGP SWPPP approval. A NOT will be filed for the 2009 CGP once this SWPPP is approved.

1.2 PERMIT REGISTRATION DOCUMENTS

Required Permit Registration Documents (PRDs) shall be submitted to the State Water Board via the Stormwater Multi Application and Report Tracking System (SMARTS) by the LRP or DAR. The project-specific PRDs include (2022 CGP Section III.A):

1. Notice of Intent (NOI);
2. Risk Level Determination (Construction Site Sediment and Receiving Water Risk Determination);
3. Site Drawings and Map;
4. SWPPP;
5. Applicable plans, calculations, and other supporting documentation for compliance with the Phase I or Phase II municipal separate storm sewer system (MS4) post construction requirements or the post-construction standards of the 2022 CGP:
    - Attachment or web-source containing the applicable Phase I or Phase II MS4 post construction requirements;
    - The post construction plans and calculations submitted to or approved by the applicable Phase I or Phase II MS4; and/or
    - Post-construction water balance calculation;
6. Annual Fee per the current 23 California Code of Regulations Chapter 9 fee schedule for National Pollutant Discharge Elimination System (NPDES) stormwater permits; and
7. Signed Certification Statement (LRP Certification is provided electronically with SMARTS PRD submittal).

Site Maps can be found in Appendix A. A copy of the submitted PRDs shall also be kept in Appendix B along with the Waste Discharge Identification (WDID) confirmation.

1.3 SWPPP AVAILABILITY AND IMPLEMENTATION

The SWPPP will be available at the construction site during working hours list on the title sheet and Section 7.5, while construction is occurring and shall be made available upon request by a federal, state, or municipal inspector. A current copy of the site-specific SWPPP and any site inspection reports required by the 2022 CGP may be kept in electronic format at the site so long as the information requested by a federal, state, or municipal inspector can be made available during an inspection. Legible maps in hard copy must be available at the site (2022 CGP Section IV.O.1.).

The SWPPP must be implemented at the appropriate level to protect water quality at all times throughout the life of the project. The SWPPP must remain on the site during construction activities, commencing with the initial mobilization and ending with the termination of coverage under the 2022 CGP.

1.4 SWPPP AMENDMENTS

SWPPP changes or amendments will be uploaded through SMARTS within 30 calendar days. The SWPPP will be revised when:

- If there is a 2022 CGP violation (2022 CGP Section VI.Q.1);
- There is a reduction or increase in total disturbed acreage (2022 CGP Section III.F.2 and F.4.);

- BMPs are not effective and are not resulting in a reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges (2022 CGP Section VI.Q.1 and Attachment D Section III.C.5);
- There is a change in the project duration that changes the project's risk level (2022 CGP Section III.F.1); or
- Dischargers with projects where all construction activities (including passive treatment, active treatment systems, and/or active equipment) will be suspended for 30 days or more (2022 CGP Section III.G.).

Additionally, the SWPPP will be amended when:

- There is a change in construction or operations that may affect the discharge of pollutants to surface waters, groundwater(s), or a municipal separate storm sewer system (MS4) (2022 CGP Sections IV.O. and VI.Q.1); or

When deemed necessary by the QSD. The QSD has determined that the changes listed in Table 1-1 can be field determined by the QSP. All other changes will be made by the QSD as formal amendments to the SWPPP. Note that the 2022 CGP requires that the QSD revise the SWPPP to address potential problems identified by visual inspections, sampling data, comments from a QSP, or their own site observations (2022 CGP Section V.C.2.).

The following items shall be included in each amendment:

- Who requested the amendment;
- The location of proposed change;
- The reason for change;
- The original BMP(s) proposed, if any;
- The new BMP(s) proposed; and
- QSD certification.

SWPPP amendments will be logged at the front of the SWPPP and SWPPP Amendment QSD certifications will be located in Appendix C. The SWPPP text will be revised, replaced and/or hand annotated as necessary to properly convey the amendment. SWPPP amendments must be made by a QSD. The following changes have been designated by the QSD as "to be field determined" and constitute minor changes that the QSP may implement based on field conditions.

Table 1-1 List of Changes to be Field Determined

Candidate changes for field location or determination by QSP (1)	Check changes that can be field located or field determined by QSP
Increase quantity of an Erosion or Sediment Control Measure	*X*
Relocate/add stockpiles or stored materials	*X*
Relocate or add toilets	*X*
Relocate vehicle storage and/or fueling locations	*X*

Table 1-1 List of Changes to be Field Determined

Candidate changes for field location or determination by QSP (1)	Check changes that can be field located or field determined by QSP
Relocate areas for waste storage	*X*
Relocate water storage and/or water transfer location	*X*
Changes to access points (entrance/exits)	*X*
Change type or location of Erosion or Sediment Control Measure	*X*
Minor changes to schedule or phases	*X*
Changes in construction materials	*X*
(1) Any field changes not identified for field location or field determination by the QSP must be made as an amendment by the QSD.	

1.5 RETENTION OF RECORDS

Paper or electronic records of documents required by this SWPPP will be retained for a minimum of three years from the date generated or date submitted, whichever is later, for the following items:

- SWPPP;
- Visual monitoring reports;
- Sampling equipment calibration records;
- pH and turbidity sampling field sheets;
- Analytical laboratory reports; and

These records will be available at the Site until construction is complete. Records assisting in the determination of compliance with the 2022 CGP will be made available within a reasonable time to the Regional Water Board, State Water Board, or U.S. Environmental Protection Agency (EPA) upon request. Requests by the Regional Water Board for retention of records for a period longer than three years will be adhered to.

1.6 REPORTING

Completed inspection checklists are not required to be submitted to the Regional Water Board. However, completed inspection checklists will be kept with the SWPPP on-site or electronically. The 2022 CGP requires that permittees prepare, certify, and electronically submit an Annual Report no later than September 1 of each year. Reporting requirements are identified in 2022 CGP Section VI.P. Annual reports will be filed in SMARTS and in accordance with information required by the online forms.

Planned changes in site construction activities that may result in non-compliance with the 2022 CGP are required to be provided in writing to the Regional Water Board and local stormwater agency in advance of the changes.

If a 2022 CGP discharge violation occurs, the QSP will immediately notify the LRP. The LRP will include information on the violation with the Annual Report. Corrective measures will be

implemented immediately following identification of the discharge or written notice of non-compliance from the Regional Board. Discharges and corrective actions must be documented and include the following items:

- The date, time, location, nature of operation, and type of unauthorized discharge;
- The cause or nature of the notice or order;
- The BMPs deployed before the discharge event, or prior to receiving notice or order; and
- The date of deployment and type of BMPs deployed after the discharge event, or after receiving the notice or order, including additional measures installed or planned to reduce or prevent re-occurrence.

Results of (pH and turbidity, etc.) monitoring will be electronically submitted through SMARTS for all field sampling results within 30 days of the completion of the precipitation event or within 10 days if the field sampling results demonstrate the exceedance of the pH and/or turbidity NALs. See Section 7.7.2.7 for additional discussion of the reporting requirements.

1.7 CHANGES TO PERMIT COVERAGE

The 2022 CGP allows for the reduction or increase of the total acreage covered under the 2022 CGP when: a portion of the project is complete and/or conditions for termination of coverage have been met; when ownership of a portion of the project is purchased by a different entity; or when new acreage is added to the project.

Modified PRDs will be filed electronically through a Change of Information (COI) within 30 days of a reduction or increase in total disturbed area if a change in permit-covered acreage is to be sought. The SWPPP will be modified appropriately and will be logged at the front of the SWPPP. SWPPP Amendments QSD Certifications will be located in Appendix C. COIs submitted electronically via SMARTS can be found in Appendix D.

1.8 NOTICE OF TERMINATION

A Notice of Termination (NOT) must be submitted electronically by the LRP or DAR via SMARTS to terminate coverage under the 2022 CGP.

According to the requirements of 2022 CGP Section III.H.4., the following final stabilization method will be used to satisfy final stabilization condition requirements:

70 percent final cover method supported by pre- and post-project photographs demonstrating stabilization.

The Regional Water Board will consider a construction site complete when the conditions of the 2022 CGP Section III.H., have been met.

The discharger is required to submit the following in SMARTS:

- NOT SMARTS Form;
- QSP-prepared final NOT inspection which includes the QSP name and valid QSP certificate number;
- Final site map with photo orientation references;
- Photos demonstrating final stabilization and the applicable post-construction BMPs and/or low impact development; and

- A long-term maintenance plan for the post-construction stormwater runoff BMPs and/or low impact development features being implemented.

According to the 2022 CGP, the NOT will be automatically approved within 30 calendar days after the date the NOT was submitted, unless, within the 30 calendar days the Regional Water Board notifies the discharger through SMARTS that the Notice of Termination has been denied, returned, or accepted for review (2022 CGP Section III.H.7).

Note: If an Annual Report has not been filed in the current reporting year, an Annual Report will need to be submitted prior to the NOT.

Section 2 Project Information

2.1 PROJECT AND SITE DESCRIPTION

2.1.1 Site Description

The GIC Vernon project site is Risk Level 2 that comprises approximately 27.7 acres and is located at 3049 E Vernon Avenue in Vernon, California. The project site is located adjacent to Los Angeles River and is approximately 8,000 feet south of Interstate 5 and Interstate 10. The project is located at 34.00584, -118.21849 and is identified on the Site Map in Appendix A.

2.1.2 Existing Conditions

As of the initial date of this SWPPP, the project site is currently occupied by structures used by Smithfield, spanning north of East Vernon Avenue. Operations on the subject property ceased in February 2023. The northern portion is developed with eight buildings and an engine room. Railroad spurs extend onto the eastern side of the property that have been abandoned in place. Subject property operations formerly included pork processing and distribution, the storage and use of ammonia in refrigeration systems, and the use of electrical and hydraulic equipment to transport ammonia and animal byproducts throughout the site. The entire site is covered with impervious surface, including pavement, building, structure, railroad, and etc.

Historically, the subject property north of East Vernon Avenue was occupied by meat packing facilities (1920 to present), fiberboard manufacturer (1928 to 1956), and auto repair shops (1920 to present). South of East Vernon Avenue, the subject property was occupied with a gas station (1948 to 1952) and a paving company (1933 to 1967). Langan completed a Phase I Environmental Site Assessment (ESA), dated May 4, 2023, for the subject property. The Phase I ESA identified three Recognized Environmental Conditions (RECs):

REC-1 Historical Industrial Activity: There has been approximately 100-years of industrial activity on the subject property with associated infrastructure including rail spurs, electrical substations, vehicle maintenance and repair areas, hydraulic lifts, and hazardous materials storage. Potential constituents of concern associated with this REC included chlorinated solvents, polychlorinated biphenyls (PCBs), creosote, metals, and asbestos in the soil.

REC-2 Petroleum Underground Storage Tanks (USTs): The EDR database report includes listings for 24 USTs of single-wall steel construction potentially installed on the subject property between 1929 and 1981. Langan reviewed supporting information for six USTs, but the statuses of the other 18 are unknown. The unknown statuses of the USTs, and age of the USTs indicated by available records indicate a potential for soil and soil vapor impacts at the subject property.

REC-3 Industrial Activity in the Surrounding Area: There has been approximately 100 years of industrial activity on the adjacent properties and in the surrounding area of the subject property. Operations included a battery smelting and recycling facility, oil and gas production, meat packing and auto repair facilities. The current and historical operations in the vicinity of the subject property and the potential offsite sources of hazardous substances may have impacted the media on the subject property.

Soil sampling and analysis is required when soil contamination is found or suspected. The results of this analysis are in Appendix Q.

2.1.3 Existing Drainage

The project site is relatively flat, sloping slightly to the southeast corner at the meat packing facility and slightly to the northeast corner within the parking lot. The elevation from 194 to 200 feet and the parking lot ranges from 194 to 198 feet (NAVD 88). Existing site topography, drainage patterns, and stormwater conveyance systems are shown in Appendix A.

The project discharges to Los Angeles River Reach 2 (Carson to Figueroa Street). The water quality impairments (303 (d) list and TMDLs identified in the 2022 CGP Table H-1 for the receiving waters are identified in the Table 2-1.

Table 2-1 Applicable 303(d) List Impairments and TMDLs

Receiving Water	Water Quality Impairment	
	303(d) list	TMDL (2022 CGP Table H-1)
Los Angeles River Reach 2	Ammonia, Coliform Bacteria, Copper, Lead, Nutrients (algae), Oil, Trash.	Los Angeles River Bacteria TMDL, Los Angeles River Metals TMDL, Los Angeles River Nutrients TMDL

2.1.4 Geology and Groundwater

The site is underlain by pavement, aggregate base, brown to tan sandy silt, silty sand, sandy clay, and clay with varying amounts of gravel. Information regarding subject property-specific groundwater flow direction is unavailable. Based on topographic gradient and proximity to the Los Angeles River, it is expected that groundwater generally flows to the east-northeast. A review of the Los Angeles Department of Public Works (DPW) identified a groundwater well approximately 0.4-miles east of the subject property. In 2019, groundwater was measured at 242 feet below grade surface (bgs). A review of the State Water Resources Control Board's GeoTracker website identified a Leaking Underground Storage Tank (LUST) site approximately 0.5-miles west of the subject property. In 2012, groundwater was measured at approximately 237-feet bgs and the groundwater flow was determined to be approximately north.

2.1.5 Project Description

Project grading will occur on approximately 27.7 acres of the project, which comprises approximately 100 percent of the total area. The limits of grading are shown in Appendix A. Grading will include both cut and fill activities, exact quantities to be determined in later phases. Fill material will be imported during grading activities, exact quantities are to be determined. Graded materials are expected to be balanced onsite. Soil will be stockpiled as shown in Appendix A. Construction activities will not be phased.

2.1.6 Developed Condition

Post demolition surface drainage will mimic the existing drainage pattern. Stormwater runoff will be directed as surface flow through stormwater conveyance systems and will discharge to city storm drain system along East Vernon Avenue and Los Angeles River.

Post construction drainage patterns and conveyance systems will be presented on in Appendix A in later phases of the project.

Table 2-2 Construction Site Estimates

Construction site area	27.7	acres
Total area of disturbance	27.7	acres
Percent impervious before construction	100	%
Runoff coefficient before construction	0.9	
Percent impervious after construction	TBD	%
Runoff coefficient after construction	TBD	

2.2 PERMITS AND GOVERNING DOCUMENTS

In addition to the 2022 CGP, the following documents have been taken into account while preparing this SWPPP:

- Regional Water Board requirements
- Basin Plan requirements
- Contract Documents
- Air Quality regulations and permits
- Federal Endangered Species Act
- National Historic Preservation Act/Requirements of the State Historic Preservation Office
- State of California Endangered Species Act
- Clean Water Act Section 401 Water Quality Certifications and 404 Permits
- CA Department of Fish and Game 1600 Streambed Alteration Agreement
- California Ocean Plan
- State Water Board GeoTracker database (GeoTracker)

2.3 STORMWATER RUN-ON FROM OFFSITE AREAS

There is no anticipated offsite run-on to this construction site because the site is bordered by local streets, developed industrial site and Los Angeles River which all slopes away from the site. Existing stormwater conveyance system also prevents on-site flow.

2.4 FINDINGS OF THE CONSTRUCTION SITE SEDIMENT AND RECEIVING WATER RISK DETERMINATION

A construction site risk assessment has been performed for the project and the resultant risk level is Risk Level 2.

The risk level was determined through the use of the R-value determined from EPA's *Rainfall Erosivity Factor Calculator for Small Construction S*ites at: https://lew.epa.gov/ in accordance with the State Water Board Guidance for multi-year projects at: https://www.waterboards.ca.gov/water_issues/programs/stormwater/smarts/construction/docs/rfactor_guide.pdf, and K and LS provided in SMARTS, a site-specific analysis, etc.) The risk level is based on project duration, location, proximity to impaired receiving waters, and soil conditions. A copy of the Risk Level determination submitted on SMARTS with the PRDs is included in Appendix B.

Table 2-3 and Table 2-4 summarize the sediment and receiving water risk factors and document the sources of information used to derive the factors.

Table 2-3 Summary of Sediment Risk

RUSLE Factor	Value	Method for Establishing Value
R	134.82	U.S. EPA Rainfall Erosivity Factor Calculator
K	0.32	Sediment Risk GIS Map Method
LS	0.41	Sediment Risk GIS Map Method
Total Predicted Sediment Loss (tons/acre)		17.69
Overall Sediment Risk Low Sediment Risk < 15 tons/ acre Medium Sediment Risk >= 15 and < 75 tons/acre High Sediment Risk >= 75 tons/acre		☐ Low ☒ Medium ☐ High

Runoff from the project site discharges into [description (e.g., moderately defined channels that are intercepted by irrigation canals)] that discharge into [water body, and eventually into the water body].

Table 2-4 Summary of Receiving Water Risk

Receiving Water Name	303(d) Listed for Sediment Related Pollutant (1)	TMDL for Sediment Related Pollutant (1)	Beneficial Uses of COLD, SPAWN, and MIGRATORY (1)
Los Angeles River Reach 2 (Carson to Figueroa Street)	☐ Yes ☒ No	☐ Yes ☒ No	☐ Yes ☒ No
Overall Receiving Water Risk			☒ Low ☐ High
(1) If yes is selected for any option the Receiving Water Risk is High			

Risk Level 2 sites are subject to both the narrative effluent limitations and numeric action limitations (NALs). The narrative effluent limitations require stormwater discharges associated with construction activity to minimize or prevent pollutants in stormwater and authorized non-stormwater through the use of controls, structures and best management practices (BMPs). Discharges from Risk Level 2 site are subject to NALs for pH and turbidity shown in Table 2-5. This SWPPP has been prepared to address Risk Level 2 requirements (2022 CGP Attachment D).

Table 2-5 Numeric Action Levels and Numeric Effluent Limits

Parameter	Unit	Numeric Action Level	Numeric Effluent Limit
pH	pH units	Lower NAL < 6.5 Upper NAL > 8.5	Not Applicable
Turbidity	NTU	> 250 NTU	Not Applicable

Projects that discharge to a water body and or watershed listed in Table H-2 are subject to both the narrative and numeric effluent limitations imposed by the TMDL requirements in Attachment H. No pollutant is expected to be present in the construction site stormwater discharge. Narrative effluent limitations are not applicable to this project.

2.5 CONSTRUCTION SCHEDULE

The site sediment risk was determined based on construction taking place between July 2023 and July 2026. Modification or extension of the schedule (start and end dates) may affect risk determination and permit requirements. The LRP shall contact the QSD if the schedule changes during construction to address potential impact to the SWPPP. The estimated schedule for planned work can be found in Appendix E.

07/2023 to 5/2024 Demolition Phase
05/2024 to 7/2026 Other Phases to be provided in the future

2.6 POTENTIAL CONSTRUCTION ACTIVITY AND POLLUTANT SOURCES

Appendix F includes a list of construction activities and associated materials that are anticipated to be used onsite as well as the pollutant source assessment form that was completed for the project. These activities and associated materials will or could potentially contribute pollutants, other than sediment, to stormwater runoff.

The anticipated activities and associated pollutants were used in Section 3 to select the BMPs for the project. Locations of anticipated pollutants and associated BMPs are shown on the Site Map in Appendix A.

Additionally, proper measures will be taken to ensure that trench spoils or any other soils disturbed during construction activities that are contaminated are not discharged with stormwater or non-stormwater discharges into storm drains or water bodies (except pursuant to a separate NPDES Permit). If contaminated soils are found on site, and the responsible party cannot be identified or fails to take action, soils will be sampled to determine proper handling and protect public safety. The appropriate local, State, and federal agencies along with the appropriate Regional Water Board will be notified when contaminated soils are observed.

For sampling requirements for non-visible pollutants associated with construction activity, please refer to Section 7.7.1. For a full and complete list of onsite pollutants, refer to the Safety Data Sheets (SDS), which are retained onsite at the construction trailer or are available electronically at the site.

2.7 TMDL REQUIREMENTS

Based on the project's receiving water and the pollutant source assessment, the following TMDLs are applicable to the project (See 2022 CGP Attachment H).

Table 2-8 Project TMDLs

TMDL	Applicable Water Body/ Watershed	Pollutants	Additional TMDL-Related NAL or NEL	Compliance Actions
Los Angeles River Nutrients TMDL	Los Angeles River (below LA-Glendale WRP)	Ammonia, Total (as N)	Sep 1, 2023	Los Angeles River Nutrients TMDL
Los Angeles River Bacteria TMDL	Los Angeles River Watershed	E.coli	Sep 1, 2023	Los Angeles River Bacteria TMDL
Los Angeles River Metals TMDL	Los Angeles River Watershed	Cadmium, Total	Sep 1, 2023	Los Angeles River Metals TMDL
Los Angeles River Metals TMDL	Los Angeles River Watershed	Copper, Total	Sep 1, 2023	Los Angeles River Metals TMDL
Los Angeles River Metals TMDL	Los Angeles River Watershed	Lead, Total	Sep 1, 2023	Los Angeles River Metals TMDL

Table 2-8 Project TMDLs

TMDL	Applicable Water Body/ Watershed	Pollutants	Additional TMDL-Related NAL or NEL	Compliance Actions
Los Angeles River Metals TMDL	Los Angeles River Watershed	Zinc, Total	Sep 1, 2023	Los Angeles River Metals TMDL
Los Angeles River Nutrients TMDL	Los Angeles River Watershed	Ammonia, Total (as N)	Sep 1, 2023	Los Angeles River Nutrients TMDL
Los Angeles River Nutrients TMDL	Los Angeles River Watershed	Nitrate, Total (as NO3)	Sep 1, 2023	Los Angeles River Nutrients TMDL
Los Angeles River Nutrients TMDL	Los Angeles River Watershed	Nitrite, Total (as NO2)	Sep 1, 2023	Los Angeles River Nutrients TMDL
Los Angeles River Nutrients TMDL	Los Angeles River Watershed	Nitrite Plus Nitrate (as N)	Sep 1, 2023	Los Angeles River Nutrients TMDL

These TMDLs are also identified in Section 2.1.3. The applicable NALs and NELs are also identified in Section 2.4. BMP requirements related to TMDLs are discussed in Section 3.4. Monitoring requirements related to TMDLs are discussed further in Section 7.7.

2.8 IDENTIFICATION OF NON-STORMWATER DISCHARGES

Non-stormwater discharges into storm drainage systems or waterways, which are not authorized under the 2022 CGP and listed in the SWPPP, or authorized under a separate NPDES permit, are prohibited.

Non-stormwater discharges that are authorized from this project site include the following:

- Firefighting activity.
- Fire hydrant system flushing
- Irrigation of vegetative erosion control measures
- Uncontaminated water line flushing.
- Pipe flushing and testing.
- Air conditioning and compressor condensate.
- Water to control dust.

These authorized non-stormwater discharges will be managed with the stormwater and non-stormwater BMPs described in Section 3 of this SWPPP and will be minimized under the

direction of the QSP. Additionally, the non-stormwater discharges not applicable to this project are still allowable granted they do not contact potential pollutant sources.

Activities at this site that may result in unauthorized non-stormwater discharges include:

- Fire hydrant flushing.
- Irrigation of vegetative erosion control measures.
- Pipe flushing and testing.
- Water to control dust.
- Uncontaminated groundwater dewatering.
- Other discharged not subject to the separate regional NPDES permit adopted or local jurisdiction requirements.

Steps will be taken, including the implementation of appropriate BMPs, to ensure that unauthorized discharges are eliminated, controlled, disposed, or treated on-site.

Discharges of construction materials and wastes, such as fuel or paint, resulting from dumping, spills, or direct contact with rainwater or stormwater runoff, are also prohibited.

2.9 REQUIRED SITE MAP INFORMATION

The construction project's Site Map(s) showing the project location, surface water boundaries, geographic features, construction site perimeter and general topography, locations of storm drain inlets that receive runoff from the project, and other requirements identified in 2022 CGP Sections IV.O.2. k. and l are located in Appendix A. Table 2-9 identifies Maps or Sheet Nos. where required elements are illustrated.

Table 2-9 Required Map Information

Included on Map/Plan Sheet No. (1)	Required Element
Pre-Earthwork Drawings	
Vicinity Map	Site and project boundaries
N/A	Areas disturbed during geotechnical or other preconstruction investigation work
Pre-Development Drainage Map	Existing roads and trails
Pre-Development Drainage Map	Drainage areas
Pre-Development Drainage Map	Discharge locations

Table 2-9 Required Map Information

Included on Map/Plan Sheet No. (1)	Required Element
Pre-Development Drainage Map	Existing storm drain system if applicable
SWPPP Exhibit	Proposed locations of storage areas for waste
SWPPP Exhibit	Proposed locations of construction materials
SWPPP Exhibit	Proposed locations of project staging areas
SWPPP Exhibit	Proposed locations of stockpiles
SWPPP Exhibit	Proposed locations of vehicles, equipment staging and vehicle maintenance
SWPPP Exhibit	Proposed locations of loading/unloading materials
Grading Plan	Proposed locations of site access (entrance/exits)
N/A	Proposed locations of fueling, water storage, water transfer for dust control
Demolition Plan	Proposed locations of demolition
N/A	Proposed locations of other construction support activities
Construction and Earthwork Drawing(s)	
Grading Plan	Site layout (grading plans) including roads
Grading Plan	Site and project boundaries
Post-development Drainage Map	Drainage areas
Storm Drain Plan	Discharge locations
SWPPP Exhibit	Sampling locations
Grading Plan	Areas of soil disturbance (temporary or permanent)
Grading Plan	Proposed active areas of soil disturbance (cut or fill)
SWPPP Exhibit	Proposed locations of erosion control BMPs
SWPPPExhibit	Proposed locations of sediment control BMPs
SWPPP Exhibit	Proposed locations of run-off BMPs
N/A	Temporary and/or permanent run-on conveyance (if applicable)
N/A	Proposed locations of active treatment systems(s) (if applicable)
SWPPP Exhibit	Proposed locations of storage areas for waste
SWPPP Exhibit	Proposed locations of construction materials

Table 2-9 Required Map Information

Included on Map/Plan Sheet No. (1)	Required Element
SWPPP Exhibit	Proposed locations of project staging areas
SWPPP Exhibit	Proposed locations of stockpiles
SWPPP Exhibit	Proposed locations of vehicles, equipment and vehicle maintenance
SWPPP Exhibit	Proposed locations of loading/unloading materials
SWPPP Exhibit	Proposed locations of site access (entrance/exits)
N/A	Proposed locations of fueling, water storage, water transfer for dust control
Demolition Plan	Proposed locations of demolition
N/A	Proposed locations of other construction support activities
	Site-specific procedures to implement final stabilization BMPs as soon as reasonably practicable

Notes: (1) Indicate maps or drawings that information is included on (e.g., Vicinity Map, Site Map, Drainage Plans, Grading Plans, Progress Maps.)

Section 3 Best Management Practices

3.1 SCHEDULE FOR BMP IMPLEMENTATION

BMPs will be implemented as per the schedule indicated in Table 3-1.

Table 3-1 BMP Implementation Schedule

	BMP	Location	Implementation	Duration
Erosion Control BMPs	EC-1, Scheduling		Prior to Construction	Entirety of Project
	EC-2, Preservation of Existing Vegetation		Start of Construction	Entirety of Project
	EC-3, Hydraulic Mulch		During Construction	As required until permanent soil stabilization activities commence
Sediment Control BMPs	SE-1, Silt Fence		Start of Construction	Entirety of project
	SE-5, Fiber Rolls		Start of Construction	Entirety of project
	SE-6, Gravel Bag Berm		Start of Construction	Entirety of project
	SE-7 Street Sweeping		Start of Construction	Entirety of project
	SE-10, Storm Drain Inlet Protection		Start of Construction	Entirety of project
	SE-13, Compost Sock and Berm		Start of Construction	Entirety of project
Wind Erosion Control BMPs	WE-1, Wind Erosion Control		Start of Construction	Entirety of project
Tracking Control BMPs	TC-1, Stabilized Construction Entrance and Exit		Start of Construction	Entirety of project
Non-Stormwater Control BMPs	NS-1 Water Conservation Practices		Start of Construction	Entirety of project
	NS-2 Dewatering Operations		N/A	N/A
	NS-3 Paving and Grinding Operation		Start of Construction	Entirety of project

Table 3-1 BMP Implementation Schedule

	BMP	Location	Implementation	Duration
	NS-6 Illicit Connection/Discharge		Start of Construction	Entirety of project
	NS-7 Potable Water/ Irrigation		During Construction	As required after landscaping is established
	NS-8 Vehicle and Equipment Cleaning		Start of Construction	Entirety of project
	NS-9 Vehicle and Equipment Fueling		Start of Construction	Entirety of project
	NS-10 Vehicle and Equipment Maintenance		Start of Construction	Entirety of project
	NS-12 Concrete Curing		Start of Construction	Entirety of project
	NS-13 Concrete Finishing		Start of Construction	Entirety of project
Waste Management Control BMPs	WM-1 Material Delivery and Storage		Start of Construction	Entirety of project
	WM-2 Material Use		Start of Construction	Entirety of project
	WM-3 Stockpile Management		Start of Construction	Entirety of project
	WM-4 Spill Prevention and Control		Start of Construction	Entirety of project
	WM-5 Solid Waste Management		Start of Construction	Entirety of project
	WM-6 Hazardous Waste Management		Start of Construction	Entirety of project
	WM-7 Contaminated Soil Management		Start of Construction	Entirety of project
	WM-8 Concrete Waste Management		Start of Construction	Entirety of project
	WM-9 Sanitary Septic Waste Management		Start of Construction	Entirety of project
	WM-10 Liquid Waste Management		Start of Construction	Entirety of project

3.2 EROSION AND SEDIMENT CONTROL

Erosion and sediment controls are required by the 2022 CGP to provide effective reduction or elimination of sediment related pollutants in stormwater discharges and authorized non-stormwater discharges from the Site. Applicable BMPs are identified in this section for erosion control, sediment control, tracking control, and wind erosion control.

3.2.1 Erosion Control

Erosion control, also referred to as soil stabilization, consists of source control measures that are designed to prevent soil particles from detaching and becoming transported in stormwater runoff. Erosion control BMPs protect the soil surface by covering and/or binding soil particles.

This construction project will implement the following practices to provide effective temporary and final erosion control during construction:

1. Preserve existing vegetation where required and when feasible.
2. The area of soil disturbing operations shall be controlled such that the Contractor is able to implement erosion control BMPs quickly and effectively.
3. Stabilize non-active areas within 14 days of cessation of construction activities or sooner if stipulated by local requirements.
4. Control erosion in concentrated flow paths by applying erosion control blankets, check dams, erosion control seeding, or alternate methods.
5. Prior to the completion of construction, apply permanent erosion control to remaining disturbed soil areas.

Sufficient erosion control materials shall be maintained onsite to allow implementation in conformance with this SWPPP.

The following erosion control BMP selection table, Table 3-2 indicates the BMPs that will be implemented to control erosion on the construction site. Fact Sheets for temporary erosion control BMPs are provided in Appendix G.

These temporary erosion control BMPs shall be implemented in conformance with the following guidelines and as outlined in the BMP Factsheets provided in Appendix G. If there is a conflict between documents, the Site Map will prevail over narrative in the body of the SWPPP or guidance in the BMP Fact Sheets. Site specific details in the Site Map prevail over standard details included in the Site Map. The narrative in the body of the SWPPP prevails over guidance in the BMP Fact Sheets.

Table 3-2 Erosion Control BMPs

CASQA Fact Sheet	BMP Name	Considered for the Project[1]	BMP Used		If not used, state reason and alternate BMP, if applicable
			YES	NO	
EC-1	Scheduling	✓	✓		
EC-2	Preservation of Existing Vegetation	✓		✓	No vegetation on site, existing tree to be removed
EC-3	Hydraulic Mulch	✓[2]		✓	Not applicable
EC-4	Hydroseed	✓[2]		✓	Not applicable
EC-5	Soil Binders	✓[2]		✓	Not applicable
EC-6	Straw Mulch	✓[2]		✓	Not applicable
EC-7	Geotextiles and Mats	✓[2]		✓	Not applicable
EC-8	Wood Mulching	✓[2]		✓	Not applicable
EC-9	Earth Dike and Drainage Swales	✓[3]		✓	Not applicable
EC-10	Velocity Dissipation Devices	✓[3]		✓	Not applicable
EC-11	Slope Drains	✓[3]		✓	Not applicable
EC-12	Stream Bank Stabilization			✓	Not applicable
EC-14	Compost Blankets	✓[2]		✓	Not applicable
EC-15	Soil Preparation-Roughening	✓		✓	Not applicable
EC-16	Non-Vegetated Stabilization	✓[2]		✓	Not applicable
WE-1	Wind Erosion Control	✓	✓		

[1] The 2022 CGP Fact Sheet Section I.R.1.d.through I.R.1.i.describes various BMPs that should be considered for use on the construction site.
[2] The QSD shall ensure implementation of one of the minimum measures listed or a combination thereof to achieve and maintain the Risk Level requirements.
[3] All run-on and runoff from the construction site shall be managed for Risk Level 2 and 3 and Risk Level 1 if the evaluation of quantity and quality of run-on and runoff deems them necessary or visual inspections show that the site requires these controls. Run-on from offsite shall be directed away from all disturbed areas, diversion of offsite flows may require design/analysis by a licensed civil engineer and/or additional environmental permitting.

Scheduling

Scheduling shall be implemented to sequence construction activities such that BMPs such as erosion control and sediment control are implemented while taking into consideration local climate (rainfall, wind, etc.). The purposed is to reduce the amount and duration of soil exposed. to erosion by wind, rain, runoff, and vehicle track, and to perform the construction activities and control practices in accordance with the planned schedule.

Wind Erosion Control

Water shall be applied as necessary to prevent or alleviate dust nuisance generated by construction activities in conjunction with covering small stockpiles or areas.

3.2.2 Sediment Controls

Sediment controls are temporary or permanent structural measures that are intended to complement the selected erosion control measures and reduce sediment discharges from active construction areas. Sediment controls are designed to intercept and settle out soil particles that have been detached and transported by the force of water.

The following sediment control BMP selection table indicates the BMPs that will be implemented to control sediment on the construction site. Fact Sheets for temporary sediment control BMPs are provided in Appendix G.

These temporary sediment control BMPs will be implemented in conformance with the following guidelines and in accordance with the BMP Fact Sheets provided in Appendix G. If there is a conflict between documents, the Site Map will prevail over narrative in the body of the SWPPP or guidance in the BMP Fact Sheets. Site specific details in the Site Map prevail over standard details included in the Site Map. The narrative in the body of the SWPPP prevails over guidance in the BMP Fact Sheets.

Table 3-3 Temporary Sediment Control BMPs

CASQA Fact Sheet	BMP Name	Considered for the Project [1]	BMP used		If not used, state reason and alternate BMP, if applicable
			YES	NO	
SE-1	Silt Fence	✓(2) (3)	✓		
SE-2	Sediment Basin			✓	Not applicable
SE-3	Sediment Trap			✓	Not applicable
SE-4	Check Dams			✓	Not applicable
SE-5	Fiber Rolls	✓(2)(3)	✓		
SE-6	Gravel Bag Berm	✓(3)	✓		
SE-7	Street Sweeping	✓	✓		
SE-8	Sandbag Barrier		✓		
SE-9	Straw Bale Barrier			✓	Sandbag Barrier used in lieu
SE-10	Storm Drain Inlet Protection	✓ RL2&3	✓		
SE-11	ATS			✓	Not applicable
SE-12	Manufactured Linear Sediment Controls			✓	Not applicable
SE-13	Compost Sock and Berm	✓(3)		✓	Not applicable
SE-14	Biofilter Bags	✓(3)		✓	Not applicable
NA	Passive Treatment System			✓	Not applicable
TC-1	Stabilized Construction Entrance and Exit	✓	✓		
TC-2	Stabilized Construction Roadway			✓	Stabilized Construction Entrance and Exit used in lieu
TC-3	Entrance Outlet Tire Wash			✓	Stabilized Construction Entrance and Exit used in lieu

[1] The 2022 CGPs Fact Sheet Section I.R.1.d through I.R.1.i describes various BMPs that should be considered for use on the construction site.
[2] The QSD shall ensure implementation of one of the minimum measures listed or a combination thereof to achieve and maintain the Risk Level requirements.
[3] All run-on and runoff from the construction site shall be managed. Risk Level 2 and 3 shall provide linear sediment control along toe of slope, face of slope, and at the grade breaks of exposed slope.

Silt Fence

Silt fence to be installed along the perimeter of the site in combination with fiber rolls.

Fiber Rolls

Fiber rolls to be installed along the perimeter of the site, along the toe, top, face, and at grade breaks of exposed erodible slopes, down-slope of exposed soil areas, at operational storm drains as a form of inlet protection, and around temporary stockpiles. Fiber rolls shall be inspected in accordance with the General Permit requirements and at a minimum shall be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.

Gravel Bag Berm

Gravel bag berms shall be installed around temporary stockpiles and spoil areas and at operation storm drains as a form of inlet protection. Gravel bags shall be inspected in accordance with the General Permit requirements and at a minimum shall be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events. Gravel bags exposed to sunlight will need to be replaced every two to three months due to degrading of the bags. Sediment that accumulates should be periodically removed in order to maintain effectiveness or when sediment reaches one-third of the barrier height.

Street Sweeping

Street sweeping to be done daily anywhere sediment is tracked from the project site onto public or private paved streets and roads.

Sandbag Barrier

Sandbag barriers to be installed along a level contour to intercept sheet flow allowing sediment to settle out.

Storm Drain Inlet Protection

Storm drain inlet protection to be installed to temporarily pond runoff before it enters the storm drain, allowing sediment to settle. Every storm drain inlet receiving runoff from unstabilized or 26 otherwise active work areas should be protected. Storm drain inlet protection must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that a minimum, it be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.

Stabilized Construction Entrance and Exit

Stabilized construction access to be installed as entrances and exit in conjunction with street sweeping on the adjacent public right of way. Entrances and exits will require periodic top dressing with additional stones and sediment shall be disposed of if the construction entrance/exit is clogged with sediment.

3.3 NON-STORMWATER CONTROLS AND WASTE AND MATERIALS MANAGEMENT

3.3.1 Non-Stormwater Controls

Non-stormwater discharges into storm drainage systems or waterways which are not authorized under the 2022 CGP are prohibited. Non-stormwater discharges for which a separate NPDES permit is required by the local Regional Water Board are prohibited unless coverage under the separate NPDES permit has been obtained for the discharge. The selection of non-stormwater BMPs is based on the list of construction activities with a potential for non-stormwater discharges identified in Section 2.7 of this SWPPP.

The following non-stormwater control BMP selection table indicates the BMPs that will be implemented to control sediment on the construction site. Fact Sheets for temporary non-stormwater control BMPs are provided in Appendix G.

Non-stormwater BMPs will be implemented in conformance with the following guidelines and in accordance with the BMP Fact Sheets provided in Appendix G. If there is a conflict between documents, the Site Map will prevail over narrative in the body of the SWPPP or guidance in the BMP Fact Sheets. Site specific details in the Site Map prevail over standard details included in the Site Map. The narrative in the body of the SWPPP prevails over guidance in the BMP Fact Sheets.

Table 3-4 Temporary Non-Stormwater BMPs

CASQA Fact Sheet	BMP Name	Considered for the Project (1)	BMP used		If not used, state reason and alternate BMP, if applicable
			YES	NO	
NS-1	Water Conservation Practices	✓	✓		
NS-2	Dewatering Operation	✓	✓		For future phases
NS-3	Paving and Grinding Operation		✓		For future phases
NS-4	Temporary Stream Crossing			✓	Not applicable
NS-5	Clear Water Diversion			✓	Not applicable
NS-6	Illicit Connection/Discharge	✓	✓		
NS-7	Potable Water/Irrigation	✓	✓		
NS-8	Vehicle and Equipment Cleaning	✓	✓		
NS-9	Vehicle and Equipment Fueling	✓	✓		
NS-10	Vehicle and Equipment Maintenance	✓	✓		
NS-11	Pile Driving Operation			✓	Not applicable
NS-12	Concrete Curing		✓		For future phases
NS-13	Concrete Finishing		✓		For future phases
NS-14	Material and Equipment Use Over Water			✓	Not applicable
NS-15	Demolition Removal Adjacent to Water			✓	Not applicable
NS-16	Temporary Batch Plants			✓	Not applicable
(1) The 2022 CGP Fact Sheet Section I.R.1.d through I.R.1.i describes various BMPs that should be considered for use on the construction site.					

Water Conservation Practices

Water equipment shall be kept in good working condition, water truck filling area shall be stabilized, water leaks shall be repaired promptly, surfaces to be cleaned with water shall be swept and vacuumed first to remove dirt, and construction water runoff shall be directed to areas where it can soak into the ground or be collected and reused.

Dewatering Operation

Dewatering operations will require and should comply with applicable local and project specific permits and regulations. The destination of discharge from dewatering activities will determine the type of permit required for the discharge. Contractor shall apply for and receive all necessary permit as necessary to discharge water from dewatering activities and maintain all dewatering records in accordance with all local and project-specific permits and regulations.

Paving and Grinding Operation

In order to manager construction materials associated with paving and grinding operations including mortar, concrete, and cement, paving should be limited during the wet season when feasible, paving and grinding activities should be rescheduled if rain if forecasted when feasible, employees and sub-contractors shall be trained in pollution prevention and reduction, materials shall be stored away from drainage courses, stockpiled construction material shall be stored consistent with WM-3, Stockpile Management and removed away from roadways away from drain inlets, drainage ditches, and watercourses. Saw cutting, grinding, pavement removal, asphaltic concrete paving, Portland cement concrete paving, sealing operations, thermoplastic striping, and raised/recessed pavement marker application and removal and these operations associated equipment shall be installed or maintained as outlines in NS-3, Paving and Grinding Operations.

Illicit Connection/Discharge

Contractor shall inspect the site before beginning the job for evidence of illicit connections, illegal dumping or discharges and document any pre-existing conditions and notify the owner. The QSP/Contractor shall inspect the site regularly during project execution for evidence of illicit connections, illegal dumping or discharges and observe the site perimeter for evidence for potential of illicitly discharged or illegally dumped material, which may enter the job site. The QSP/Contractor shall notify the owner of any illicit connections and illegal dumping or discharge incidents at the time of discovery. If illicit connections or discharges are discovered to the storm drain system, the local stormwater management agency shall be notified. For illegal dumping, the local law enforcement agency shall be notified.

Potable Water/Irrigation

Water from offsite sources shall be directed around or through the construction site, where feasible, in a way that minimizes contact with the construction site. Discharges from water line flushing should be reused for landscaping purposed where feasible. Water source shall be shut off as soon as possible to broken lines, sprinklers, or valves to prevent excess water flow.

Vehicle and Equipment Cleaning

Vehicle and equipment cleaning procedures and practices shall be in accordance with NS-8, Vehicle and Equipment Cleaning.

Vehicle and Equipment Fueling

Onsite vehicle and equipment fueling should only be used where it is impractical to send vehicles and equipment offsite for fueling. If vehicle and equipment fueling needs to take place on site, fuel tanks should not bed "topped-off", absorbent spill cleanup materials and spill kits should be available in fueling areas and on fueling trucks, and should be disposed of properly after use, drip pans or absorbent pads should be used during fueling, unless the fueling is performed over an impermeable surface in a dedicated fueling area, employees and subcontractors shall be trained in proper fueling and cleanup procedures, the fueling area should be designated away from drainage courses to be used, dedicated fueling areas should be protected from stormwater run on and runoff, and should be located at least 50 ft away from downstream drainage facilities and watercourses, fueling areas shall be protected with berms and dikes to prevent run on, runoff, and to contain spills, nozzles used in fueling should be equipped with an automatic shutoff to control drips, vapor recovery nozzles shall be used to help control drips as well as air pollution where required by Air Quality Management Districts (AQMD), and all federal, state, and local requirements should be observed for any stationary above ground storage tanks.

Vehicle and Equipment Maintenance

Contamination shall be prevented or reduced by running a "dry and clean site" by performing all maintenance activities at an offsite facility when feasible. If this option is not available then work should be performed in designated areas only, while provided cover for materials stored outside, checking for leak and spills, and containing and cleaning up spills immediately. Employees and subcontractors must be trained in proper procedures.

Concrete Curing

Employees and subcontractors shall be educated on proper concrete curing techniques to prevent contact with discharge by storing and handling concrete curing compounds appropriately protecting drain inlets prior to the application of curing compounds and directing cure water away from inlets and watercourses to collection areas for evaporation or other means of removal in accordance with all applicable permits. QSP or appropriately trained contractor's superintendent or representative shall be present to oversee and enforce concrete curing procedures.

Concrete Finishing

Employees and subcontractors shall be educated on proper concrete finishing techniques to

prevent contact with discharge by protecting drain inlets prior to concrete finishing and directing water away from inlets and watercourses to collection areas for evaporation or other means of removal in accordance with all applicable permits. QSP or appropriately trained contractor's superintendent or representative shall be present to oversee and enforce concrete finishing procedures.

3.3.2 Materials Management and Waste Management

Materials management control practices consist of implementing procedural and structural BMPs for handling, storing, and using construction materials to prevent the release of those materials into stormwater discharges. The amount and type of construction materials to be utilized at the Site will depend upon the type of construction and the length of the construction period. The materials may be used continuously, such as fuel for vehicles and equipment, or the materials may be used for a discrete period, such as soil binders for temporary stabilization.

Waste management consist of implementing procedural and structural BMPs for handling, storing, and ensuring proper disposal of wastes to prevent the release of those wastes into stormwater discharges.

Materials and waste management pollution control BMPs will be implemented to minimize stormwater contact with construction materials, wastes, and service areas; and to prevent materials and wastes from being discharged off-site. The primary mechanisms for stormwater contact that shall be addressed include:

- Direct contact with precipitation;
- Contact with stormwater run-on and runoff;
- Wind dispersion of loose materials;
- Direct discharge to the storm drain system through spills or dumping;
- Extended contact with some materials and wastes, such as asphalt cold mix and treated wood products, which can leach pollutants into stormwater.

A list of construction activities is provided in Section 2.6. The following Materials and Waste Management BMP selection table, Table 3-5, indicates the BMPs that shall be implemented to handle materials and control construction site wastes associated with these construction activities. Fact Sheets for Materials and Waste Management BMPs are provided in Appendix G.

Material management BMPs will be implemented in conformance with the following guidelines and in accordance with the BMP Fact Sheets provided in Appendix G. If there is a conflict between documents, the Site Map will prevail over narrative in the body of the SWPPP or guidance in the BMP Fact Sheets. Site specific details in the Site Map prevail over standard details included in the Site Map. The narrative in the body of the SWPPP prevails over guidance in the BMP Fact Sheets.

Table 3-5 Temporary Materials Management BMPs

CASQA Fact Sheet	BMP Name	Considered for Project [1]	BMP used		If not used, state reason and alternate BMP, if applicable
			YES	NO	
WM-01	Material Delivery and Storage	✓	✓		
WM-02	Material Use	✓	✓		
WM-03	Stockpile Management	✓	✓		
WM-04	Spill Prevention and Control	✓	✓		
WM-05	Solid Waste Management	✓	✓		
WM-06	Hazardous Waste Management	✓	✓		
WM-07	Contaminated Soil Management		✓		
WM-08	Concrete Waste Management	✓	✓		
WM-09	Sanitary-Septic Waste Management	✓	✓		
WM-10	Liquid Waste Management	✓	✓		

[1] The 2022 CGP Fact Sheet Section I.R.1.d through I.R.1.i describes various BMPs that should be considered for use on the construction site.

Material Delivery and Storage

The discharge of pollutants from material delivery and storage shall be prevented, reduced, or eliminated by minimizing the storage of hazardous materials onsite, storing materials in watertight containers and/or a completed enclosed designated area, installing secondary containment, conducting regular inspections, and training employees and subcontractors.

Material Use

The discharge of pollutants to the storm drain system shall be prevented or reduced by using alternative products, minimizing hazardous materials use onsite, and training employees and subcontractors.

Stockpile Management

Active stockpiles shall be covered and protected with a temporary linear sediment barrier at the end of the business day or prior to anticipated rain. Non-active stockpiles, described as a stockpile either not used for 14 days or if it's scheduled not to be used for 14 days or more, shall be covered and protected with a temporary linear sediment barrier.

Spill Prevention and Control

The discharge of pollutants to the storm drain shall be prevented or reduced by reducing the chance for spills, stopping the source of spills, containing and cleaning up spills, properly disposing of spill materials, and training employees.

To the extent that the work can be accomplished safely, spills of oil, petroleum products, substances listed under 40 CFR parts 110,117, and 302, and sanitary and septic wastes should be contained and cleaned up immediately, hazardous materials and wastes shall be placed in covered containers and protected from vandalism, a stockpile of spill cleanup materials shall be located where it will be readily accessible, employees shall be trained in spill prevention and cleanup, spills should be covered and protected from stormwater run on during rainfall to the extent, used clean up materials, contaminated materials, and recovered spill shall be disposed of properly, and waste storage areas shall be kept clean, well-organized, and equipped with ample cleanup supplies as appropriate for the materials being stored.

Solid Waste Management

Solid waste management procedures shall be used to prevent or reduce the discharge of pollutants to stormwater from solid or construction waste by providing designated waste collection areas and containers, arranging for regular disposal, and training employees and subcontractors.

The following steps will help keep a clean site and reduce stormwater pollution: Select designated waste collection areas onsite. trash-hauling contractors shall be informed that only watertight dumpsters are acceptable for onsite use, dumpsters shall be inspected for leaks and any dumpster that is not watertight shall be repaired, containers shall be located in a covered area or in a secondary containment, an adequate number of containers shall be provided with lids or covers that can be placed over the container to keep rain out or to prevent loss of wastes when it is windy, waste containers shall be covered at the end of each work day and when it is raining, additional containers shall be planned for during the demolition phase and more frequent pickup, site trash shall be collected daily, especially during rainy and windy conditions, solid waste shall be removed promptly since erosion and sediment control devices tend to collect litter, toxic liquid wastes (used oils, solvents, and paints) and chemicals (acids, pesticides, additives, curing compounds) shall not disposed of in dumpsters designated for construction debris, dumpsters shall not be hosed out on the construction site and dumpster cleaning shall be left to the trash hauling contractor, regular waste collection shall be arranged before containers

overflow, if a container does spill it shall be cleaned up immediately, and construction waste shall be collected, removed, and disposed of only at authorized disposal areas.

Hazardous Waste Management

The discharge of pollutants to the storm drain from hazardous waste shall be prevented or reduced through proper material use, waste disposal, and training of employees and subcontractors. Wastes should be stored in sealed containers constructed of a suitable material and should be labeled as required by Title 22 CCR, Division 4.5 and 49 CFR Parts 172, 173, 178, and 179. All hazardous waste should be stored, transported, and disposed as required in Title 22 CCR, Division 4.5 and 49 CFR 261-263.

Waste containers should be stored in temporary containment facilities that should comply with the following requirements: Temporary containment facility should provide for a spill containment volume equal to 1.5 times the volume of all containers able to contain precipitation from a 25-year storm event, plus the greater of 10% of the aggregate volume of all containers or 100% of the capacity of the largest tank within its boundary, whichever is greater. Temporary containment facility should be impervious to the materials stored there for a minimum contact time of 72 hours. Temporary containment facilities should be maintained free of accumulated rainwater and spills. In the event of spills or leaks, accumulated rainwater and spills should be placed into drums after each rainfall. These liquids should be handled as a hazardous waste unless testing determines them to be non-hazardous. Non-hazardous liquids should be sent to an approved disposal site. Sufficient separation should be provided between stored containers to allow for spill cleanup and emergency response access. Incompatible materials, such as chlorine and ammonia, should not be stored in the same temporary containment facility. Throughout the rainy season, temporary containment facilities should be covered during non-working days, and prior to rain events. Covered facilities may include use of plastic tarps for small facilities or constructed roofs with overhangs.

Drums should not be overfilled, and wastes should not be mixed. Unless watertight, containers of dry waste should be stored on pallets. Herbicides and pesticides shall not be over applied, and the recommended usage instructions shall be followed. Surface dressings shall be applied in several smaller applications, as opposed to one large application and time shall be allowed for infiltration and avoid excess material being carried offsite by runoff. These chemicals shall not be applied just before it rains and people applying pesticides must be certified in accordance with federal and state regulations.

Paint brushes and equipment for water and oil-based paints shall be cleaned within a contained area and should not be allowed to contaminate site soils, watercourses, or drainage systems. Waste paints, thinners, solvents, residues, and sludges that cannot be recycled or reused shall be disposed of as hazardous waste. When thoroughly dry, latex paint and paint cans, used brushes, rags, absorbent materials, and drop cloths shall be disposed of as solid waste. Brushes shall not be cleaned out or paint containers shall not be rinsed into the dirt, street, gutter, storm drain, or stream and excess oil-based paints and sludge shall be disposed of as hazardous waste.

Contaminated Soil Management

The discharge of pollutants to the storm drain from contaminated soil and highly acidic or alkaline soils shall be prevented or reduced by conducting pre-construction surveys, inspecting excavations regularly, and remediating contaminated soil promptly.

Concrete Waste Management

The discharge of pollutants to the storm drain from concrete waste shall be prevented or reduced by conducting washout onsite or offsite in a designated area, and by employee and subcontractor training.

The following steps will help reduce stormwater pollution from concrete wastes: requirements for concrete waste management shall be incorporated into material supplier and subcontractor agreements, dry and wet materials shall be stored under cover, away from drainage areas. Mixing excess amounts of concrete shall be avoided. Washout of concrete trucks shall be performed in designated areas only, where washout will not reach stormwater. Concrete trucks shall not be washed out into storm drains, open ditches, streets, streams or onto the ground. Trucks shall always be washed out into designated facilities. Excess concrete shall not be dumped onsite, except in designated areas. If onsite washout is necessary, washout areas shall be located at least 50 feet from storm drains, open ditches, or water bodies and runoff from this area shall not be allowed by constructing a temporary pit or bermed area large enough for liquid and solid waste. Washouts shall be implemented in a manner that prevents leaching to underlying soils. Washout containers shall be watertight and washouts on or in the ground shall be lined with a suitable impervious liner, typically a plastic type material.

Sanitary-Septic Waste Management

The discharge of pollutants to the storm drain from concrete waste shall be prevented or reduced by providing convenient, well-maintained facilities, and arranging for regular service and disposal.

Sanitary or septic wastes should be treated or disposed of in accordance with state and local requirements. Temporary sanitary facilities should be located away from drainage facilities, watercourses, and from traffic circulation. If site conditions allow, portable facilities shall be placed a minimum of 50 feet from drainage conveyances and traffic areas. When subjected to high winds or risk of high winds, temporary sanitary facilities should be secured to prevent overturning. Temporary sanitary facilities must be equipped with containment to prevent discharge of pollutants to the stormwater drainage system of the receiving water. Sanitary and septic facilities should be maintained in good working order by a licensed service. Regular waste collection by a licensed hauler should be arranged before facilities overflow. If a spill does occur from a temporary sanitary facility, federal, state, and local regulations for containment and clean-up should be followed.

Liquid Waste Management

The discharge of pollutants to the storm drain as a result of the creation, collection, and disposal of non-hazardous liquid wastes shall be prevented or reduced by following proper procedures and practices and educating employees and subcontractors that it is unacceptable for any liquid waste to enter any storm drainage device, waterway, or receiving water and how to store, capture, and dispose of liquid waste appropriately.

3.4 TMDL-RELATED BMPS

This project is not subject to TMDLs. TMDL Related BMPs are non-applicable for this site.

3.5 POST CONSTRUCTION STORMWATER MANAGEMENT MEASURES

Post construction BMPs are permanent measures installed during construction, designed to reduce or eliminate pollutant discharges from the site after construction is completed.

This site is subject to the post-construction requirements of an existing NPDES Phase I or Phase II MS4. ☒ Yes ☐ No

The post construction runoff reduction requirements have been satisfied through the MS4 program, this project is exempt from 2022 CGP Provision IV.N.3. The MS4's post construction requirements and the post-construction plans and calculations [submitted to or approved by]

the MS4 were uploaded as part of the PRDs as required by 2022 CGP Provision IV.N.2. The approved Long-Term Maintenance Plan will be uploaded with the NOT.

Section 4 BMP Inspection and Maintenance

4.1 BMP INSPECTION AND MAINTENANCE

The 2022 CGP requires routine weekly inspections of BMPs, along with inspections before, during, and after qualifying precipitation events. A BMP inspection checklist must be filled out for inspections and maintained on-site with the SWPPP. The inspection checklist must include the necessary information covered in Section 7.6. A blank BMP Inspection Form can be found in Appendix H. Completed forms will be kept in Appendix N.

Maintenance, repair, or design and implementation of new BMPs alternatives will be begin withing 72 hours of the identification of failures or other shortcomings. Corrections will be completed as soon as possible, prior to the next forecasted precipitation event (2022 CGP Appendix D Section II.J).

The QSP will verify that all BMP maintenance and repairs were appropriately implemented during the next visual inspection following completion.

The QSP may delegate BMP maintenance and repair verification to an appropriately trained QSP Delegate.

Specific details for maintenance, inspection, and repair of Construction Site BMPs can be found in the BMP Factsheets in Appendix G.

Section 5 Training

Appendix J identifies the QSPs and QSP Delegates for the project. To promote stormwater management awareness specific for this project, periodic training of job-site personnel will be included as part of routine project meetings (e.g., daily/weekly tailgate safety meetings), or task specific training as needed. Refresher training will be provided as necessary.

The QSP will be responsible for providing this information at the meetings, and subsequently completing the Training Reporting Form shown in Appendix I, which identify the site-specific stormwater topics covered as well as the names of site personnel who attended the meeting.

The QSP may delegate specific tasks to trained QSP Delegates who have received the following training based on the guidelines developed by the Construction General Permit Training Team.

1. Foundational training for all QSP Delegate(s) regarding stormwater compliance roles and responsibilities, forecast information, and documentation and reporting procedures; and
2. Site-specific training regarding visual inspections, sampling procedures, and/or SWPPP and BMP implementation activities relevant to the responsibilities assigned to the QSP Delegate(s).

The delegate cannot perform the QSD and QSP inspections required in Section V.C.4 or Section V.D.2, respectively.

Documentation of training activities will be retained in Appendix I.

Section 6 Responsible Parties and Operators

6.1 RESPONSIBLE PARTIES

DARs who are responsible for SWPPP implementation and have authority to sign permit-related documents is listed below. The DAR assigned to this project is:

Name	Title	Phone Number
TBD		

QSD(s) identified for the project are identified in Appendix J. The QSD will have primary responsibility for assessing how construction activities will affect sediment transport, erosion, and other discharges of pollutants in stormwater runoff throughout the project. The QSD is required to revise the SWPPP to address potential problems identified by visual inspections, sampling data, comments from a QSP, or their own site observations. The QSD is required to perform the following on-site visual inspections:

- Within 30 days of construction activities commencing on site;
- Within 30 days when a new QSD is assigned to the project;
- Twice annually, once August through October and once January through March;
- Within 14 calendar days after a numeric action level exceedance; and
- Within the time period requested in writing from Regional Water Board staff.

QSPs and QSP Delegates identified for the project are identified in Appendix J. The QSP will have primary responsibility and significant authority for the implementation, maintenance, and inspection/monitoring of SWPPP requirements. The QSP will be available at all times throughout the duration of the project.

Duties of the QSP include but are not limited to:

- Implementing all elements of the 2022 CGP and SWPPP, including, but not limited to:
    - Performing the following on-site visual inspections:
        - One inspection per calendar month; other weekly inspections in the month can be delegated to a trained QSP Delegate under the specific direction of the QSP.
        - Within 72 hours prior to a forecasted qualifying precipitation event, to inspect any areas of concern and to verify the status of any deficient BMPs, or other identified issues at the site. If extended forecast precipitation data (greater than 72 hours) is available from the *National Weather Service*, then the Pre-Precipitation Event inspection may be done up to 120 hours in advance.
        - Within 14 days after a NAL exceedance, the QSP shall visually inspect the drainage area for exceedance and document any areas of concern.
        - Prior to the submittal for the NOT or COI (for acreage changes) for all or part of the site.
    - Ensuring that all BMPs are implemented, inspected, and properly maintained;

    - Ensure that the SMARTS generated WDID Number Notification form is posted on-site, in a location viewable by the public or readily available upon request, and the dates are correct and match the dates listed in SMARTS.
- Implementing non-stormwater management, and materials and waste management activities such as: monitoring discharges; general Site clean-up; vehicle and equipment cleaning, fueling and maintenance; spill control; ensuring that no materials other than stormwater are discharged in quantities which will have an adverse effect on receiving waters or storm drain systems, etc.;
- Ensuring elimination of unauthorized discharges.
- The QSPs shall be assigned authority by the LRP to mobilize crews in order to make immediate repairs to the control measures.
- Coordinate with the Contractor(s) to assure the necessary corrections/repairs are made immediately and that the project complies with the SWPPP, the 2022 CGP, and approved plans at all times.
- Notifying the LRP or Duly Authorized Representative immediately of off-site discharges or other non-compliance events.
- Providing foundation and site-specific training to QSP Delegates and overseeing QSP Delegate work. Tasks that may be delegated to appropriately trained QSP-delegates include:
    - Performing non-stormwater and stormwater visual observations and inspections;
    - Performing stormwater sampling and analysis, as required; and
    - Performing routine inspections and observations.

Table 6-1. QSP and QSP Delegate Authorized Inspections

	Weekly BMP and NSW	Pre-QPE	Daily-QPE Visual Inspections	Post-QPE Visual Inspections	Post NAL Exceedances	Monthly BMP and NSW	NOT
QSP	X	X	X	X	X	X	X
QSP Delegate	X		X	X			

6.2 CONTRACTOR LIST

Contractor Name:	Glenn Bell
Title:	Project Manager
Contractor Company:	American Wrecking Inc.
Address	2459 Lee Avenue #1, South El Monte CA 91733
Phone Number:	(626) 350-8303
Phone Number (24/7)	(626) 350-8303

Section 7 Construction Site Monitoring Program

7.1 Purpose

This Construction Site Monitoring Program was developed to address the following objectives:

1. To demonstrate that the site is in compliance with the Discharge Prohibitions and Numeric Action Levels (NALs);
2. To demonstrate that the site is in compliance with TMDL NALs and Numeric Effluent Limitations (NELs);
3. To determine whether non-visible pollutants discharged from the construction site and are causing or contributing to exceedances of water quality objectives;
4. To determine whether immediate corrective actions, additional BMP implementation, or SWPPP revisions are necessary to reduce pollutants in stormwater discharges and authorized non-stormwater discharges;
5. To determine whether BMPs included in the SWPPP are effective in preventing or reducing pollutants in stormwater discharges and authorized non-stormwater discharges.

7.2 Applicability of Permit Requirements

This project has been determined to be a Risk Level 2 project. The 2022 CGP identifies the following types of monitoring as being applicable for a Risk Level 2 project.

- Visual inspections of BMPs;
- Visual monitoring of the site related to qualifying precipitation events;
- Visual monitoring of the site for non-stormwater discharges;
- Sampling and analysis of construction site runoff for pH and turbidity;
- Sampling and analysis of construction site runoff for non-visible pollutants [including TMDL pollutants] identified during the pollutant source assessments when applicable; and
- Sampling and analysis of construction site runoff as required by the Regional Water Board when applicable.

7.3. Weather and Precipitation Event Tracking

Visual monitoring and inspections requirements of the 2022 CGP are triggered by a Qualifying Precipitation Event. The 2022 CGP defines a Qualifying Precipitation Event as any weather pattern that is forecast to have a 50 percent or greater Probability of Precipitation (PoP) and a Quantitative Precipitation Forecast (QPF) of 0.5 inches or more within a 24-hour period. The event begins with the 24-hour period when 0.5 inches has been forecast and continues on subsequent 24-hour periods when 0.25 inches of precipitation or more is forecast.

7.3.1 Weather Tracking

The QSP should daily consult the National Oceanographic and Atmospheric Administration (NOAA) for the Forecast Weather Table Interface. These forecasts can be obtained at http://forecast.weather.gov. Weather reports should be printed and maintained with the SWPPP in Appendix M. Record the date and time the forecast was printed.

7.3.2 Rain Gauges

The QSP shall install (1) rain gauge(s) on the project site. Locate the gauge in an open area away from obstructions such as trees or overhangs. Mount the gauge on a post at a height of 3 to 5 feet with the gauge extending several inches beyond the post. Make sure that the top of the gauge is level. Make sure the post is not in an area where rainwater can indirectly splash from sheds, equipment, trailers, etc.

The rain gauge(s) shall be read daily during normal site scheduled hours. The rain gauge should be read at approximately the same time every day and the date and time of each reading recorded. An example rain gauge log sheet is provided in Appendix O. Retain rain gauge readings in Appendix N. Follow the rain gauge instructions to obtain accurate measurements.

Once the rain gauge reading has been recorded, accumulated rain shall be emptied, and the gauge reset.

For comparison with the site rain gauge, the nearest appropriate governmental rain gauge(s) is located at Los Angeles / USC Campus Downtown (KCQT).

(https://forecast.weather.gov/MapClick.php?lon=118.21884512901306&lat=34.00617090876497)

7.4 Monitoring Locations

Monitoring locations are shown on the Site Maps in Appendix A. Monitoring locations are described in the Sections 7.6 and 7.7.

Whenever changes in the construction site might affect the appropriateness of sampling locations, the sampling locations shall be revised accordingly. All such revisions shall be implemented as soon as feasible and the SWPPP amended. Temporary changes that result in a one-time additional sampling location do not require a SWPPP amendment.

7.5 Safety and Monitoring Exemptions

Safety practices for sample collection will be in accordance with the Contractor's Health and Safety Plan for the Project. A summary of the safety requirements that apply to sampling personnel is provided below.

- TBD

This project is not required to collect samples or conduct visual observations (inspections) under the following conditions (see Section III.B of the 2022 CGP):

- During dangerous weather conditions such as electrical storms, flooding, and high winds above 40 miles per hour;
- Outside of scheduled site operating hours; or
- When the site is not accessible to personnel. Scheduled site business hours are: 7:00 AM to 7:00 PM

If monitoring (visual monitoring or sample collection) of the site is unsafe because of the dangerous conditions noted above, then the QSP shall document the conditions for why an exception to performing the monitoring was necessary. The exemption documentation will be filed in Appendix N and must be included in the Annual Report.

7.6 Visual Monitoring

Per Section III.B.2. of Attachment D in the 2022 CGP, "For inactive projects, dischargers may reduce the visual inspection frequency and suspend sampling per Section III.G of the 2022 CGP.

Dischargers shall provide an explanation with supporting information for all missed visual inspections or sampling required by this Attachment, to be included in the Annual Report."

Visual monitoring includes observations and inspections. Inspections of BMPs are required to identify and record BMPs that need maintenance to operate effectively, that have failed, or that could fail to operate as intended. Visual observations of the site are required to observe storm water drainage areas to identify any spills, leaks, or uncontrolled pollutant sources.

Table 7-1 identifies the required frequency of visual observations and inspections. Inspections and observations will be conducted at the locations identified in Section 7.6.3.

Table 7-1 Summary of Visual Monitoring and Inspections

Type of Inspection	Frequency
Routine Inspections[1]	
BMP Inspections	Weekly[2]
BMP Inspections – Tracking Control	Weekly
Construction Entrance	Weekly or as required by rain event triggered inspections.
Storm Inlet Protection	Weekly or as required by rain event triggered inspections.
Non-Stormwater Discharge Observations	Quarterly during daylight hours
Qualifying Precipitation Event Triggered Inspections	
Site Inspections Prior to a Qualifying Precipitation Event	Within 72 hours of a qualifying precipitation event or up to 120 hours prior if supported with forecast [2]
BMP Inspections During an Extended Qualifying Precipitation Event	Once every 24-hour period of a qualifying precipitation event[3]
Site Inspections Following a Qualifying Precipitation Event	Within 96 hours of a qualifying precipitation event[2]

[1] Inspections are required during scheduled site operating hours.

[2] Most BMPs must be inspected weekly; those identified below must be inspected more frequently.

[3] Inspections are required during scheduled site operating hours on days that the forecast predicts at least 0.25 inches of precipitation once the qualifying precipitation event commences.

7.6.1 Routine Observations and Inspections

Routine site inspections and visual monitoring are necessary to confirm that the project is in compliance with the requirements of the 2022 CGP.

7.6.1.1 Routine BMP Inspections

Inspections of BMPs are conducted to identify and record:

- BMPs that are properly installed;
- BMPs that need maintenance to operate effectively;
- BMPs that have failed; or

- BMPs that could fail to operate as intended.

7.6.1.2 Non-Stormwater Discharge Observations

Each drainage area will be inspected for the presence of or indications of prior unauthorized and authorized non-stormwater discharges. Inspections will record:

- Presence or evidence of any non-stormwater discharge (authorized or unauthorized);
- Identification and elimination of unauthorized non-stormwater discharges
- Pollutant characteristics (floating and suspended material, sheen, discoloration, turbidity, odor, etc.); and
- Source of discharge.

7.6.2 Qualifying Precipitation Event Triggered Observations and Inspections

Visual observations of the site and inspections of BMPs are required prior to a qualifying precipitation event; following a qualifying precipitation event, and every 24-hour period during a qualifying precipitation event. Pre-Qualifying Precipitation Event inspections will be conducted after consulting NOAA and determining that a precipitation event with a 50 percent or greater PoP and a QPF of 0.5 inches or more precipitation within a 24-hour period has been predicted by the National Weather Service Forecast Office.

7.6.2.1 Visual Observations Prior to a Forecasted Qualifying Precipitation Event

Within 72 hours prior to a qualifying precipitation event or up to 120 hours prior if extended forecast precipitation data is available, a stormwater visual monitoring site inspection will include observations of the following locations:

- All stormwater drainage areas to identify leaks, spills, or uncontrolled pollutant sources and when necessary, implement appropriate corrective actions.
- All BMPs to identify whether they have been properly implemented per the SWPPP and implement appropriate corrective actions, as necessary.
- All stormwater storage and containment areas to detect leaks and check for available capacity to prevent overflow.

The QSP must conduct the inspection prior to the qualifying precipitation event. Consistent with the requirements for a qualifying precipitation event, pre-rain BMP inspections and visual monitoring will be triggered by a NOAA forecast that indicates a 50 percent or greater probability of 0.5 inches of precipitation or more in a 24-hour period in the project area.

7.6.2.2 BMP Inspections During a Qualifying Precipitation Event

During an extended qualifying precipitation event BMP inspections will be conducted at least once every 24 hours. Qualifying precipitation events are extended for each subsequent 24-hour period forecast to have at least 0.25 inches of precipitation. The BMP inspections are to identify and record:

- If BMPs were adequately designed, implemented and effective.
- BMPs that require repair or replacement due to damage.
- Additional BMPs that need to be implemented and revise the SWPPP accordingly.

If the construction site is not accessible during the rain event, the visual inspections shall be performed at all relevant outfalls, discharge points, downstream locations. The inspections should record any projected maintenance activities.

7.6.2.3 Visual Observations Following a Qualifying Precipitation Event

Within 96 hours following the end of a qualifying precipitation event a stormwater visual monitoring site inspection is required to observe:

- If BMPs were adequately designed, implemented and effective.
- BMPs that require repair or replacement due to damage.
- Additional BMPs that need to be implemented and revise the SWPPP accordingly.

7.6.3 Visual Monitoring Procedures

Visual monitoring shall be conducted by the QSP or QSP Delegates.

The name(s) and contact number(s) of the QSPs or QSP Delegates assigned to conduct visual observations are listed below and their training qualifications are provided in Appendix J.

Assigned QSP: Tianyu Crocker	Contact phone: (415) 955-5270
Assigned QSP Delegate: Gianna Morelli	Contact phone: (213) 314-8131
Assigned QSP Delegate: Louis Lin	Contact phone: (949) 561-9247

Stormwater observations shall be documented on the *Visual Inspection Field Log Sheet* (see Appendix O). BMP inspections shall be documented on the site-specific BMP inspection checklist and include photographs of areas of concern along with the QSP's description of the problem.

The QSP shall within 1 days of the inspection submit copies of the completed inspection report to the LRP.

The completed reports will be kept in Appendix N. Results of visual monitoring must be summarized and reported in the Annual Report.

7.6.4 Visual Monitoring Follow-Up and Reporting

Maintenance, repairs, and correction of deficiencies, including design changes to BMPs, identified by the observations or inspections, including required repairs or maintenance of BMPs, shall be initiated within 72 hours of identification and completed as soon as possible, prior to the next forecasted precipitation event.

When design changes to BMPs are required, the SWPPP shall be amended to reflect the changes.

Deficiencies identified in site inspection reports and correction of deficiencies will be tracked on the *Inspection Field Log Sheet* or *BMP Inspection Report* shall be kept in Appendix N. QSP Delegates shall report issues identified during inspections that require corrective action to the QSP within 24 hours of the observation.

The QSP shall within 1 days of the inspection submit copies of the completed *Inspection Field Log Sheet* or *BMP Inspection Report* with the corrective actions to the LRP.

Results of visual monitoring must be summarized and reported in the Annual Report.

7.6.5 Visual Monitoring Locations

The inspections and observations identified in Sections 7.6.1 and 7.6.2 will be conducted at the locations identified in this section.

BMP locations are shown on the Site Maps in Appendix A.

There are 8 drainage area(s) on the project site and the contractor's yard, staging areas, and storage areas. Drainage area(s) are shown on the Site Maps in Appendix A and Table 7-2 identifies each drainage area by location.

Table 7-2 Site Drainage Areas

Location No.	Location
DMA A1	Far North edge of project site along Bandini Boulevard
DMA A2	North side of project site between South Soto Street and Los Angeles River
DMA A3	West and north side of cold storage building and west portion of the building
DMA B1	Adjacent to the South Soto Street entrance
DMA B2	Southwest side of the Project
DMA B3	East side of the Project
DMA B4	East portion and east side of cold storage building
DMA O1	Offsite Street

There are no stormwater storage or containment area(s) are on the project site from which stormwater will be dewatered.

There are 7 existing discharge location(s) on the project site. Site stormwater discharge location(s) are shown on the Site Maps in Appendix A and Table 7-4 identifies each stormwater discharge location.

Table 7-4 Site Stormwater Discharge Locations

Location No.	Location
1	To Los Angeles River at northeast of the site closest to Bandini Boulevard
2	To Los Angeles River at northeast of the site second closest to Bandini Boulevard
3	To Los Angeles River at north of distribution building
4	Northwest of main building to South Soto Street
5	Southwest corner of the site to East Vernon Avenue
6	Southeast of Truck Garage & Facilities to East Vernon Avenue
7	Southeast of the site to East Vernon Avenue

7.7 Water Quality Sampling and Analysis

7.7.1 Sampling and Analysis Plan for Non-Visible Pollutants in Stormwater Runoff Discharges

This Sampling and Analysis Plan for Non-Visible Pollutants describes the sampling and analysis strategy and schedule for monitoring non-visible pollutants in stormwater runoff discharges from the project site.

Sampling for non-visible pollutants, including those associated with TMDLs will be conducted when (1) a breach, leakage, malfunction, or spill is observed; and (2) the leak or spill has not been cleaned up prior to the rain event; and (3) there is the potential for discharge of non-visible pollutants to surface waters or drainage system.

Table 7-4 summarizes the potential non-visible pollutants identified in the pollutant source assessment Sections 2.6 and 2.7 and the water quality constituent or indicator for that pollutant. Drainage areas where the source is present are shown on the Site Maps in Appendix A.

Table 7-5 Potential Non-Visible Pollutants and Water Quality Indicator Constituents Based on the Pollutant Source Assessment

Pollutant	Water Quality Indicator or Constituent	Source/Reason from Pollutant Source Assessment	TMDL Pollutant	Site Drainage Area
Thinners	COD, VOCs	Painting	No	TBD
Paint strippers	VOCs, SVOCs, metals	Painting	No	TBD
Lacquers, varnishes, enamels	COD, VOCs, SVOCs	Painting	No	TBD
Sealants	COD	Painting	No	TBD
Adhesives	Phenols, SVOCs	Painting	No	TBD
Vegetation stockpiles	BOD	Planting / Vegetation Management	No	TBD
Fertilizers	TKN, NO_3, BOD, COD, DOC, sulfate, NH_3, Phosphate, Potassium	Planting / Vegetation Management	No	TBD
Pesticides/ Herbicides	Product dependent, see label and check with Laboratory	Planting / Vegetation Management	TBD	TBD
Solder, flux, pipe fitting	Cu, Pb, Sn, Zn	Plumbing	Yes	TBD
Removal of existing structures	Zn, VOCs, PCBs (see also other applicable activity	Removal of existing structures	Yes	TBD

Table 7-5 Potential Non-Visible Pollutants and Water Quality Indicator Constituents Based on the Pollutant Source Assessment

Pollutant	Water Quality Indicator or Constituent	Source/Reason from Pollutant Source Assessment	TMDL Pollutant	Site Drainage Area
	categories, e.g., grading, painting)			
Roofing	Cu, Pb, VOCs	Roofing	Yes	TBD
Sanitary Waste Sewer line breaks and Portable Toilets	BOD, Total/Fecal coliform	Sanitary Waste Sewer line breaks and Portable Toilets	No	TBD
Polymer/ Co-polymers	TKN, NO_3, BOD, COD, DOC, Sulfate, Ni	Soil Preparation / Amendments/Dust Control	No	TBD
Lignin sulfate	TDS, alkalinity	Soil Preparation / Amendments/Dust Control	No	TBD
Psyllium	COD, TOC	Soil Preparation / Amendments/Dust Control	No	TBD
Guar/ Plant Gums	COD, TOC, Ni	Soil Preparation / Amendments/Dust Control	No	TBD
Solid Waste (leakage)	BOD	Solid Waste (leakage)	No	TBD
Utility Line Testing and Flushing	Residual chlorine, chloramines	Utility Line Testing and Flushing	No	TBD
Vehicle and Equipment Use		Vehicle and Equipment Use	TBD	TBD
Batteries	Sulfuric acid; Pb, pH	Batteries	Yes	TBD

7.7.1.1 Sampling Schedule

Samples for the potential non-visible pollutant(s) and a sufficiently large unaffected background sample shall be collected during the first eight hours of discharge from rain events that result in a sufficient discharge for sample collection. Samples shall be collected during the site's scheduled hours and shall be collected regardless of the time of year and phase of the construction.

Collection of discharge samples for non-visible pollutant monitoring will be triggered only when any of the following conditions are observed during site inspections conducted prior to or during a rain event.

- Materials or wastes containing potential non-visible pollutants are not stored under watertight conditions. Watertight conditions are defined as (1) storage in a watertight container, (2) storage under a watertight roof or within a building, or (3) protected by temporary cover and containment that prevents stormwater contact and runoff from the storage area.
- Materials or wastes containing potential non-visible pollutants are stored under watertight conditions, but (1) a breach, malfunction, leakage, or spill is observed, (2) the leak or spill is not cleaned up prior to the rain event, and (3) there is the potential for discharge of non-visible pollutants to surface waters or a storm drain system.
- A construction activity, including but not limited to those in Section 2.6, with the potential to contribute non-visible pollutants (1) was occurring during or within 24 hours prior to the rain event, (2) BMPs were observed to be breached, malfunctioning, or improperly implemented, and (3) there is the potential for discharge of non-visible pollutants to surface waters or a storm drain system.
- Soil amendments that have the potential to change the chemical properties, engineering properties, or erosion resistance of the soil have been applied, and there is the potential for discharge of non-visible pollutants to surface waters or a storm drain system.
- Stormwater runoff from an area contaminated by historical usage of the site has been observed to combine with stormwater runoff from the site, and there is the potential for discharge of non-visible pollutants to surface waters or a storm drain system.

7.7.1.2 Sampling Locations

Sampling locations are based on proximity to planned non-visible pollutant storage, occurrence or use, accessibility for sampling, and personnel safety. Planned non-visible pollutant sampling locations are shown on the Site Maps in Appendix A and include the locations identified in Table 7-6.

No sampling location(s) on the project site and the contractor's yard have been identified for the collection of samples of runoff from planned material and waste storage areas and areas where non-visible pollutant producing construction activities are planned.

Three sampling locations have been identified for the collection of samples of runoff from drainage areas where soil amendments will be applied that have the potential to affect water quality.

No sampling locations have been identified for the collection of samples of runoff from drainage areas contaminated by historical usage of the site.

No sampling location(s) has been identified for the collection of an uncontaminated sample of runoff as a background sample for comparison with the samples being analyzed for non-visible pollutants.

No sampling locations have been identified for the collection of samples of run-on to the project site.

Table 7-6 Non-Visible Pollutant Sample Locations

Sample Location Identifier	Sample Location Description	Sample Location Latitude and Longitude (Decimal Degrees)	Runoff or Run-on
SL-2	Northeast corner of the site	34.0086, -118.2182	Runoff
SL-3	Near South Soto Street Entrance	34.0070, -118.2195	Runoff
SL-4	Near East Vernon Avenue Entrance	34.0059, -118.2180	Runoff

If a stormwater visual monitoring site inspection conducted prior to or during a storm event identifies the presence of a material storage, waste storage, operations area with spills, or the potential for the discharge of non-visible pollutants to surface waters or a storm drain system that is at a location not listed above and has not been identified on the Site Maps, sampling locations will be selected by the QSP using the same rationale as that used to identify planned locations. Non-visible pollutant sampling locations shall be documented by the QSP on the pre-rain event inspection form prior to a forecasted qualifying precipitation event and the *Effluent Sampling Field Log Sheet*, which are provided in Appendix O.

7.7.1.3 Monitoring Preparation

Non-visible pollutant samples will be collected by:

QSP ☒ Yes ☐ No

QSP Delegate ☒ Yes ☐ No

An adequate stock of monitoring supplies and equipment for monitoring non-visible pollutants will be available on the project site prior to a sampling event. Monitoring supplies and equipment will be stored in a cool temperature environment that will not come into contact with rain or direct sunlight. The QSP or QSP Delegates responsible for sampling will be available to collect samples in accordance with the sampling schedule. Supplies maintained at the project site will include, but are not limited to, clean powder-free nitrile gloves, sample collection equipment, coolers, appropriate number and volume of sample bottles, identification labels, re-sealable storage bags, paper towels, personal rain gear, ice, and *Effluent Sampling Field Log Sheets* and Chain of Custody (CoC) forms, which are provided in Appendix O.

7.7.1.4 Analytical Constituents

Table 7-7 lists the specific sources and types of potential non-visible pollutants based on the project pollutant source assessment and the water quality indicator constituent(s) for that pollutant. Table 7-7 provides the specific analytical methods and reporting limits for the potential non-visible pollutants. Analytical methods were selected in compliance with U.S. EPA sufficiently sensitive method requirements in 40 Code of Federal Regulations Part 136, as evidenced by the method detection limit and minimum level.

7.7.1.5 Sample Collection

Samples of discharge shall be collected at the designated non-visible pollutant sampling locations identified in Table 7-6 and shown on the Site Maps in Appendix A or in the locations determined by observed breaches, malfunctions, leakages, spills, operational areas, soil amendment application areas, and historical site usage areas that triggered the sampling event.

Grab samples shall be collected and preserved in accordance with the methods identified in the Table 7-7, "Sample Collection, Preservation and Analysis for Monitoring Non-Visible Pollutants" provided in Section 7.7.1.6. Only the QSP, or QSP Delegates trained on sample collection identified in Section 7.7.1.3 shall collect samples.

Sample collection and handling requirements are described in Section 7.7.7.

Table 7-7 Sample Collection, Preservation and Analysis for Monitoring Non-Visible Pollutants

Constituent	Analytical Method	Minimum Sample Volume	Sample Containers	Sample Preservation	Minimum Level	Method Detection Limit	Maximum Holding Time
VOCs – Solvents	EPA Method 601/602	3 x 40 mL	VOA - Glass	Store at 4◦C, HCl to pH<2	TBD	TBD	14 days
SVOCs	EPA Method 625	1 x 1 L	Glass - Amber	Store at 4◦	TBD	TBD	7 days
Pesticides/PCBs	EPA Method 8081A/8082	1 x 1 L	Glass - Amber	Store at 4◦	TBD	TBD	7 days
Herbicides	EPA Method 8151A	1 x 1 L	Glass - Amber	Store at 4◦	TBD	TBD	7 days
BOD	EPA Method 405.1	1 x 500 mL	Polypropylene	Store at 4◦	TBD	TBD	48 hours
COD	EPA Method 410.4	1 x 250 mL	Glass - Amber	Store at 4◦	TBD	TBD	28 days
DO	SM 4500-OG	1 x 250 mL	Glass - Amber	Store at 4◦	TBD	TBD	8 hours
pH	EPA 150.1	1 x 100 mL	Polypropylene	None	TBD	TBD	Immediate
Alkalinity	SM 2320B	1 x 250 mL	Polypropylene	Store at 4◦	TBD	TBD	14 days
Metals (Al, Sb, As, Ba, Be, Cd, Ca, Cr, Co, Fe, Pb, Mg, Mn, Mo, Ni, Se, Na, Th, Va, Zn)	EPA 200.8/1631	1 x 250 mL	Polypropylene	Store at 4◦C, HNO3 to pH<2	TBD	TBD	6 months
Metals (Chromium, IV)	EPA 7196	1 x 250 mL	Polypropylene	Store at 4◦	TBD	TBD	24 hours
Notes: Analytical laboratories may use the term Reporting Level in lieu of Minimum Level							

7.7.1.6 Sample Analysis

Samples shall be analyzed using the analytical methods identified in the Table 7-7.

Samples will be analyzed by:

Laboratory Name: TBD

Street Address:

City, State Zip:

Telephone Number:

Point of Contact:

ELAP Certification Number:

Samples will be delivered to the laboratory by:

Driven by QSP/QSP Delegate/Contractor	☒	Yes	☐	No
Picked up by Laboratory Courier	☒	Yes	☐	No
Shipped	☒	Yes	☐	No

7.7.1.7 Data Evaluation and Reporting

The QSP shall complete an evaluation of the water quality sample analytical results based on a comparison of the results to the unaffected sample [and to the TMDL NALs or NELs].

Runoff/downgradient results shall be compared with the associated upgradient/unaffected results and any associated run-on results. Should the runoff/downgradient sample show an increased level of the tested analyte relative to the unaffected background sample, which cannot be explained by run-on results, the BMPs, site conditions, and surrounding influences shall be assessed to determine the probable cause for the increase.

As determined by the site and data evaluation, appropriate BMPs shall be repaired or modified to mitigate discharges of non-visible pollutant concentrations. Any revisions to the BMPs shall be recorded as an amendment to the SWPPP.

Analytical results of non-visible pollutant monitoring shall be submitted to SMARTS within 30 days of obtaining the analytical results. Results demonstrating an exceedance of an applicable TMDL-related NAL or NEL or Basin Plan parameter shall be submitted to SMARTS within 30 days of obtaining the analytical results.

The 2022 CGP prohibits the storm water discharges that contain hazardous substances equal to or in excess of reportable quantities established in 40 C.F.R. §§ 117.3 and 302.4. The results of any non-stormwater discharge results that indicate the presence of a hazardous substance in excess of established reportable quantities shall be immediately reported to the Regional Water Board and other agencies as required by 40 C.F.R. §§ 117.3 and 302.4.

7.7.2 Sampling and Analysis Plan for pH and Turbidity in Stormwater Runoff Discharges

Sampling and analysis of runoff for pH and turbidity is required for this project. This Sampling and Analysis Plan describes the strategy for monitoring turbidity and pH levels of stormwater runoff discharges from the project site and run-on that may contribute to an exceedance of a Numeric Action Level (NAL).

Samples for pH and turbidity will be collected at all discharge points where stormwater is discharged off-site.

7.7.2.1 Sampling Schedule

Stormwater runoff samples shall be collected for pH and turbidity from each day of a qualifying precipitation event that results in a discharge from the project site. One sample from each discharge location will be collected each 24 hour period of active discharge during a qualifying precipitation event. Samples should be representative of the discharge flow and characteristics.

Run-on samples shall be collected whenever the QSP identifies that run-on has the potential to contribute to an exceedance of a NAL.

7.7.2.2 Sampling Locations

Sampling locations are based on the site runoff discharge locations and locations where run-on enters the site, accessibility for sampling, and personnel safety. Planned pH and turbidity sampling locations are shown on the Site Maps in Appendix A and include the locations 3 sampling location(s) on the project site and the contractor's yard have been identified for the collection of runoff samples.

Table 7-9 Turbidity and pH Runoff Sample Locations

Sample Location Identifier	Sample Location Description	Sample Location Latitude and Longitude (Decimal Degrees)
SL-2	Northeast corner of the site	34.0086, -118.2182
SL-3	Near South Soto Street Entrance	34.0070, -118.2195
SL-4	Near East Vernon Avenue Entrance	34.0059, -118.2180

The project does not receive run-on with the potential to exceed NALs or Receiving Water Monitoring Triggers.

7.7.2.3 Monitoring Preparation

Turbidity and pH samples will be collected and analyzed by:

QSP	Tianyu Crocker	☒	Yes	☐	No
QSD Delegate	Louis Lin	☒	Yes	☐	No

An adequate stock of monitoring supplies and equipment for monitoring turbidity and will be available on the project site prior to a sampling event. Monitoring supplies and equipment will be stored in a cool temperature environment that will not come into contact with rain or direct

sunlight. The QSP or QSP Delegates will be available to collect samples in accordance with the sampling schedule. Supplies maintained at the project site will include, but are not limited to, field meters, extra batteries, clean powder-free nitrile gloves, sample collection equipment, appropriate sample containers, paper towels, personal rain gear, and *Effluent Sampling Field Log Sheets* and CoC forms provided in Appendix O.

The QSP or QSP Delegates will obtain and maintain the field-testing instruments, as identified in Section 7.7.2.6, for analyzing samples in the field. Field meter instructions are provided in Appendix P.

7.7.2.4 Field Parameters

Samples shall be analyzed for the constituents indicated in the Table 7-11.

Table 7-11 Sample Collection and Analysis for Monitoring Turbidity and pH

Parameter	Test Method	Minimum Sample Volume (1)	Sample Collection Container Type	Detection Limit (minimum)
Turbidity	Field meter/probe with calibrated portable instrument	500 mL	Polypropylene or glass (Do not collect in meter sample cells)	1 NTU
pH	Field meter/probe with calibrated portable instrument or calibrated pH test kit	100 mL	Polypropylene	0.2 pH units

Notes: [1] Minimum sample volume recommended. Specific volume requirements will vary by instrument; check instrument manufacturer instructions.

L – Liter
mL – Milliliter
NTU – Nephelometric Turbidity Unit

7.7.2.5 Sample Collection

Samples of discharge shall be collected at the designated runoff and run-on sampling locations listed in Tables 7-9 and 7-10 shown on the Site Maps in Appendix A. Run-on samples shall be collected within close proximity of the point of run-on to the project.

Sample collection and handling requirements are described in Section 7.7.7.

7.7.2.6 Field Measurements

The collection and analysis of samples for field analysis, collection, analysis and the calibration of equipment shall be in accordance with the field instrument manufacturer's specifications.

Immediately following collection, samples for field analysis shall be tested in accordance with the field instrument manufacturer's instructions and results recorded on the *Effluent Sampling Field Log Sheet*.

The field instrument(s) listed in Table 7-12 will be used to analyze the following constituents:

Table 7-12 Field Instruments

Field Instrument (Manufacturer and Model)	Constituent
YSI ProQuatro	pH
Lamotte 2020we Turbidity Meter	Turbidity

The manufacturers' instructions are included in Appendix P. Field sampling staff shall review the instructions prior to each sampling event and follow the instructions in completing measurement of the samples.

- The instrument(s) shall be maintained in accordance with manufacturer's instructions.
- The instrument(s) shall be calibrated before each sampling and analysis event.
- Maintenance and calibration records shall be maintained with the SWPPP.

The QSP may authorize alternate equipment provided that the equipment meets the 2022 CGP's requirements and the manufacturers' instructions for calibration and use are added to Appendix P.

7.7.2.7 Data Evaluation and Reporting

The LRP or DAR shall electronically report all stormwater pH and turbidity results to the State Water Board by the through SMARTS within 30 days of receiving the results. Exceedances of NALs shall be electronically reported to the State Water Board by the LRP or DAR through SMARTS within 10 days of receiving the results.

Numeric Action Levels

Compliance with the NALs for pH and turbidity is based on a single sample evaluation. A NAL exceedance occurs when any sample exceeds the turbidity NAL or is outside of the pH range shown in Table 7-13.

Table 7-13 Numeric Action Levels

Parameter	Unit	NAL
pH	pH units	Lower NAL < 6.5 Upper NAL > 8.5
Turbidity	NTU	>250

The QSP shall within 1 days of the sample collection submit copies of the completed *Effluent Sampling Field Log Sheets* to LRP or Owners Representative.

In the event that the pH or turbidity NAL is exceeded, the QSP shall immediately notify the LRP investigate the cause of the exceedance and identify corrective actions.

Exceedances of NALs shall be electronically reported to the State Water Board by the LRP or DAR through the SMARTS within 10 days of the conclusion of the storm event.

If requested by the Regional Water Board in writing, a NAL Exceedance report will be submitted within 30 days of the request. The NAL Exceedance Report must contain the following information:

- Analytical method(s), method reporting unit(s), and Method Detection Limit(s) of each parameter;
- Date, place, time of sampling, visual observation, and/or measurements, including precipitation; and
- An assessment of the existing BMPs associated with the sample that exceeded the NAL, a description of each corrective action taken including photographs, and date of implementation.

7.7.3 Sampling and Analysis Plan for pH and Turbidity in Receiving Water

This project is not subject to Receiving Water Monitoring.

7.7.4 Sampling and Analysis Plan for Dewatering Discharges

☒ No dewatering activities are planned for this project.

☐ Dewatering activities planned for this project will be conducted and monitored according to the requirements of the following NPDES Permit: N/A

☐ Dewatering activities planned for this project will be conducted and monitored according to the requirements of the 2022 CGP Attachment J.

7.7.5 Sampling and Analysis Plan for Other Pollutants Required by the Regional Water Board

The Regional Water Board has not specified monitoring for additional pollutants.

7.7.6 Training of Sampling Personnel

QSP Delegates assigned to conduct sampling shall be trained by the QSP to collect, maintain, and ship samples in accordance with the 2022 CGP Sample Collection and Handling Instructions and supplemental information as needed. Training records of QSP Delegates assigned to sample are provided in Appendix I.

7.7.7 Sample Collection and Handling

7.7.7.1 Sample Collection

Samples shall be collected at the designated sampling locations shown on the Site Maps and listed in the preceding sections. Samples shall be collected, maintained and shipped in accordance with the 2022 CGP Sample Collection and Handling Instructions.

Grab samples shall be collected and preserved in accordance with the methods identified in preceding sections.

To maintain sample integrity and prevent cross-contamination, sample collection personnel shall follow the protocols below.

- Collect samples (for laboratory analysis) in analytical laboratory-provided or specified sample containers;
  - Use of any other type of containers could cause sample contamination and may result in NAL or NEL exceedances.
- Wear clean, powder-free nitrile gloves when collecting samples;
- Change gloves whenever something not known to be clean has been touched;
- Change gloves between sampling locations;
- Decontaminate all equipment (e.g., bucket, tubing) prior to sample collection;
  - using a trisodium phosphate water wash, distilled water rinse, and final rinse with distilled water..
  - Dispose of wash and rinse water appropriately (i.e., do not discharge to storm drain or receiving water).
  - Do not decontaminate laboratory provided sample containers;
- Do not smoke during sampling events;
- Never sample near a running vehicle;
- Do not park vehicles in the immediate sample collection area (even non-running vehicles);
- Do not eat or drink during sample collection; and
- Do not breathe, sneeze, or cough in the direction of an open sample container.

The most important aspect of grab sampling is to collect a sample that represents the entire runoff stream. Typically, samples are collected by dipping the collection container in the runoff flow paths and streams as noted below.

i. For small streams and flow paths, simply dip the bottle facing upstream until full.

ii. For larger stream that can be safely accessed, collect a sample in the middle of the flow stream by directly dipping the mouth of the bottle. Once again making sure that the opening of the bottle is facing upstream as to avoid any contamination by the sampler.
iii. For larger streams that cannot be safely waded, pole-samplers may be needed to safely access the representative flow.
iv. Avoid collecting samples from ponded, sluggish or stagnant water.
v. Avoid collecting samples directly downstream from a bridge as the samples can be affected by the bridge structure or runoff from the road surface.

Note, that depending upon the specific analytical test, some containers may contain preservatives. These containers should never be dipped into the stream but filled indirectly from the collection container.

7.7.7.2 Sample Handling

Turbidity and pH measurements must be conducted immediately. Do not store turbidity or pH samples for later measurement.

Samples for laboratory analysis must be handled as follows. Immediately following sample collection:

- Cap sample containers;
- Complete sample container labels;
- Place sealed containers in a re-sealable storage bag;
- Place sample containers into an ice-chilled cooler;
- Document sample information on the *Effluent Sampling Field Log Sheet* (Appendix O); and
- Complete the CoC.

All samples for laboratory analysis must be maintained between 0-6 degrees Celsius during delivery to the laboratory. Samples must be kept on ice, or refrigerated, from sample collection through delivery to the laboratory. Place samples to be shipped inside coolers with ice. Make sure the sample bottles are well packaged to prevent breakage and secure cooler lids with packaging tape.

Ship samples that will be laboratory analyzed to the analytical laboratory right away. Hold times are measured from the time the sample is collected to the time the sample is analyzed. The 2022 CGP requires that samples be received by the analytical laboratory within 48 hours of the physical sampling (unless required sooner by the analytical laboratory to meet all hold times).

Laboratory Name: TBD

Address:

City, State Zip:

Telephone Number:

Point of Contact:

7.7.7.3 Sample Documentation Procedures

All original data documented on sample container identification labels, *Effluent Sampling Field Log Sheet* (Appendix O), and CoCs shall be recorded using waterproof ink. These shall be considered accountable documents. If an error is made on an accountable document, the individual shall make corrections by lining through the error and entering the correct

information. The erroneous information shall not be obliterated. All corrections shall be initialed and dated.

Duplicate samples shall be identified consistent with the numbering system for other samples to prevent the laboratory from identifying duplicate samples. Duplicate samples shall be identified in the Effluent Sampling Field Log Sheet.

Sample documentation procedures include the following:

Sample Bottle Identification Labels: Sampling personnel shall attach an identification label to each sample bottle. Sample identification shall uniquely identify each sample location. (These location identifiers should be listed in the tables in the SWPPP.)

Field Log Sheets: Sampling personnel shall complete the *Effluent Sampling Field Log Sheet* and *Receiving Water Sampling Field Log Sheet* (Appendix O) for each sampling event, as appropriate.

Chain of Custody: Sampling personnel shall complete the CoC for each sampling event for which samples are collected for laboratory analysis. The sampler will sign the CoC (Appendix O) when the sample(s) is turned over to the testing laboratory or courier.

7.8 Active Treatment System Monitoring

Will an Active Treatment System (ATS) be deployed on the site?

☐ Yes ☒ No

This project does not require a project specific Sampling and Analysis Plan for an ATS because deployment of an ATS is not planned.

7.9 Passive Treatment Monitoring

Will passive treatment technologies be deployed on the site?

☒ Yes ☐ No

This project does not require a project specific Sampling and Analysis Plan for passive treatment because deployment of passive treatment is not planned.

7.10 Watershed Monitoring Option

This project is not participating in a watershed monitoring option.

7.11 Quality Assurance and Quality Control

An effective Quality Assurance and Quality Control (QA/QC) plan shall be implemented as part of the CSMP to ensure that analytical data can be used with confidence. QA/QC procedures to be initiated include the following:

- Field logs;
- Clean sampling techniques;
- CoCs;
- QA/QC Samples; and
- Data verification.

Each of these procedures is discussed in more detail in the following sections.

7.11.1 Field Logs

The purpose of field logs is to record sampling information and field observations during monitoring that may explain any uncharacteristic analytical results. Sampling information to be included in the field log include the date and time of water quality sample collection, sampling personnel, sample container identification numbers, and types of samples that were collected. Field observations should be noted in the field log for any abnormalities at the sampling location (color, odor, BMPs, etc.). Field measurements for pH and turbidity should also be recorded in the field log. A Visual Inspection Field Log, an Effluent Sampling Field Log Sheet are included in Appendix O.

7.11.2 Clean Sampling Techniques

Clean sampling techniques involve the use of certified clean containers for sample collection and clean powder-free nitrile gloves during sample collection and handling. As discussed in Section 7.7.7, adoption of a clean sampling approach will minimize the chance of field contamination and questionable data results.

7.11.3 Chain of Custody

The sample CoC is an important documentation step that tracks samples from collection through analysis to ensure the validity of the sample. Sample CoC procedures include the following:

- Proper labeling of samples;
- Use of CoC forms for all samples; and
- Prompt sample delivery to the analytical laboratory.

Analytical laboratories usually provide CoC forms to be filled out for sample containers. An example CoC is included in Appendix O.

7.11.4 QA/QC Samples

QA/QC samples provide an indication of the accuracy and precision of the sample collection; sample handling; field measurements; and analytical laboratory methods. The following types of QA/QC will be conducted for this project:

☒ Field Duplicates at a frequency of 5 percent or 1 duplicate minimum per sampling event (Required for all sampling plans with field measurements or laboratory analysis)

☐ Equipment Blanks at a frequency of [Insert frequency required by method]
(Only needed if the equipment used to collect samples could add the pollutants to sample)

☐ Field Blanks at a frequency of [Insert frequency required by method]
(Only required if sampling method calls for field blanks)

☐ Travel Blanks at a frequency of [Insert frequency required by method]
(Required for sampling plans that include VOC laboratory analysis)

7.11.4.1 Field Duplicates

Field duplicates provide verification of laboratory or field analysis and sample collection. Duplicate samples shall be collected, handled, and analyzed using the same protocols as primary samples. The sample location where field duplicates are collected shall be randomly selected from the discharge locations. Duplicate samples shall be collected immediately after the primary sample has been collected. Duplicate samples must be collected in the same manner

and as close in time as possible to the original sample. Duplicate samples shall not influence any evaluations or conclusion.

7.11.4.2 Equipment Blanks

Equipment blanks provide verification that equipment has not introduced a pollutant into the sample. Equipment blanks are typically collected when:

- New equipment is used;
- Equipment that has been cleaned after use at a contaminated site;
- Equipment that is not dedicated for surface water sampling is used; or
- Whenever a new lot of filters is used when sampling metals.

7.11.4.3 Field Blanks

Field blanks assess potential sample contamination levels that occur during field sampling activities. De-ionized water field blanks are taken to the field, transferred to the appropriate container, and treated the same as the corresponding sample type during the course of a sampling event.

7.11.4.4 Travel Blanks

Travel blanks assess the potential for cross-contamination of volatile constituents between sample containers during shipment from the field to the laboratory. De-ionized water blanks are taken along for the trip and held unopened in the same cooler with the VOC samples.

7.11.5 Data Verification

After results are received from the analytical laboratory, the QSP or QSP Delegates shall verify the data to ensure that it is complete, accurate, and the appropriate QA/QC requirements were met. Data must be verified as soon as the data reports are received. Data verification shall include:

- Check the CoC and laboratory reports.
  Make sure all requested analyses were performed and all samples are accounted for in the reports.
- Check laboratory reports to make sure hold times were met and that the reporting levels meet or are lower than the reporting levels agreed to in the contract.
- Check data for outlier values and follow up with the laboratory.
  Occasionally typographical errors, unit reporting errors, or incomplete results are reported and should be easily detected. These errors need to be identified, clarified, and corrected quickly by the laboratory. The QSP or QSP Delegates should especially note data that is an order of magnitude or more different than similar locations or is inconsistent with previous data from the same location.
- Check laboratory QA/QC results.
  EPA establishes QA/QC checks and acceptable criteria for laboratory analyses. These data are typically reported along with the sample results. The QSP or QSP Delegates shall evaluate the reported QA/QC data to check for contamination (method, field, and equipment blanks), precision (laboratory matrix spike duplicates), and accuracy (matrix spikes and laboratory control samples). When QA/QC checks are outside acceptable ranges, the laboratory must flag the data, and usually provides an explanation of the potential impact to the sample results.
- Check the data set for outlier values and, accordingly, confirm results and re-analyze samples where appropriate.

Sample re-analysis should only be undertaken when it appears that some part of the QA/QC resulted in a value out of the accepted range. Sample results may not be discounted unless the analytical laboratory identifies the required QA/QC criteria were not met and confirms this in writing.

Field data including inspections and observations must be verified as soon as the field logs are received, typically at the end of the sampling event. Field data verification shall include:

- Check field logs to make sure all required measurements were completed and appropriately documented;
- Check reported values that appear out of the typical range or inconsistent; Follow-up immediately to identify potential reporting or equipment problems, if appropriate, recalibrate equipment after sampling;
- Verify equipment calibrations;
- Review observations noted on the field logs; and
- Review notations of any errors and actions taken to correct the equipment or recording errors.

7.12 Records Retention

All records of stormwater monitoring information and copies of reports (including Annual Reports) must be retained for a period of at least three years from date of submittal or longer if required by the Regional Water Board.

Results of visual monitoring, field measurements, and laboratory analyses must be kept in the SWPPP along with CoCs, and other documentation related to the monitoring.

Records are to be kept onsite while construction is ongoing. Records to be retained include:

- The date, place, and time of inspections, sampling, visual observations, and/or measurements, including precipitation;
- The individual(s) who performed the inspections, sampling, visual observation, and/or field measurements;
- The date and approximate time of field measurements and laboratory analyses;
- The individual(s) who performed the laboratory analyses;
- A summary of all analytical results, the method detection limits and reporting limits, and the analytical techniques or methods used;
- Rain gauge readings from site inspections;
- QA/QC records and results;
- Calibration records;
- Visual observation and sample collection exception records;
- The records of any corrective actions and follow-up activities that resulted from analytical results, visual observations, or inspections;
- NAL Exceedance Report.

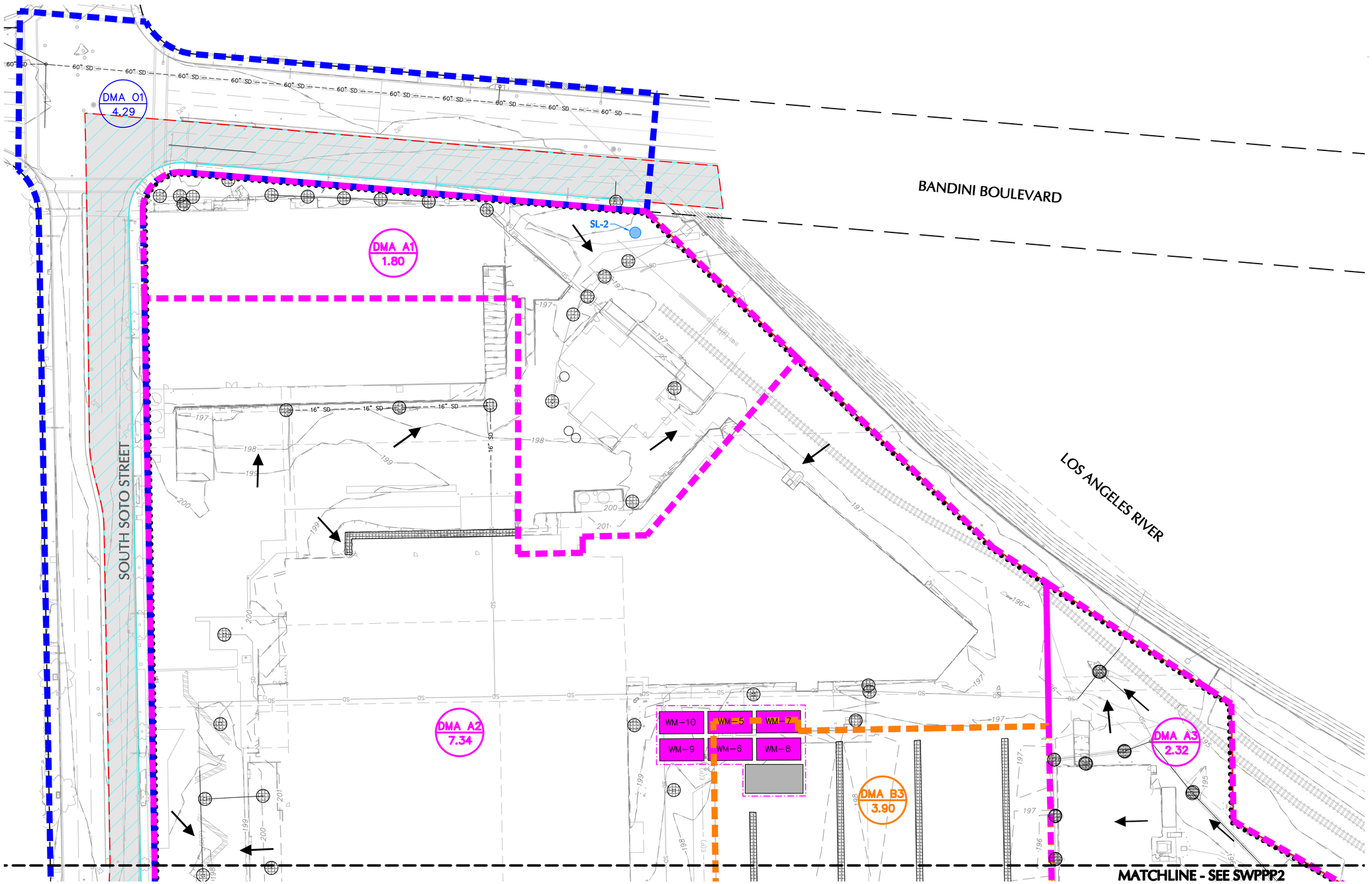
Section 8 References

Project Plans and Specifications, prepared by Langan CA, Inc.

SWRCB (State Water Resources Control Board). (2022). Order 2022-0057-DWQ, NPDES General Permit No. CAS000002: Stormwater Discharges Associated with Construction and Land Disturbing Activities. Available online at: https://www.waterboards.ca.gov/water_issues/programs/stormwater/construction/general_permit_reissuance.html.

CASQA 2023. *Stormwater BMP Handbook: Construction.* Available online at: www.casqa.org

Appendix A: Site Maps and Drawings



LEGEND

- LIMIT OF WORK
- PROPERTY BOUNDARY
- FIBER ROLL. SEE DETAIL C ON CE501
- STAGING AREA*
- TEMPORARY 6-FT HIGH CONSTRUCTION CHAIN LINK FENCE
- TC-1 STABILIZED CONSTRUCTION ENTRANCE/EXIT. SEE DETAIL A ON CE501
- WASTE MANAGEMENT* (SEE PLAN FOR TYPE)
  - WM-5 = SOLID WASTE MANAGEMENT
  - WM-6 = HAZARDOUS WASTE MANAGEMENT
  - WM-7 = CONTAMINATED SOIL MANAGEMENT
  - WM-8 = CONCRETE WASTE MANAGEMENT
  - WM-9 = SANITARY WASTE MANAGEMENT
  - WM-10 = LIQUID WASTE MANAGEMENT
- CONSTRUCTION TRAILER
- SE-7 STREET SWEEPING AND VACUUMING
- FLOW ARROW
- SE-10 INLET PROTECTION. SEE DETAIL D ON CE501
- DRAINAGE BOUNDARY A
- DRAINAGE BOUNDARY B
- SUB-DRAINAGE AREA ID
- SUB-DRAINAGE AREA IDENTIFIER
- SUB-DRAINAGE SURFACE AREA (ACRE)
- SAMPLING LOCATION

*LOCATIONS MAY VARY DUE TO ACTUAL SITE CONDITIONS DURING CONSTRUCTION.

NOTES:

IT IS THE CONRACTOR/SUPERVISOR'S RESPONSIBILITY TO KEEP THIS SWPPP MAP CURRENT. BMP'S SHOULD BE ADDED, MOVED OR REMOVED BASED ON SITE CONDITIONS. HAND-MARKED ALTERATIONS WITH INITIALS AND DATE ARE AN ACCEPTABLE FORM OF ALTERATION. THE CONTRACTOR MAY BE ASKED AT ANY TIME TO PRODUCE THIS SWPPP MAP. FAILURE TO KEEP THIS MAP CURRENT COULD RESULT IN A NOTICE OF VIOLATION AND/OR FINE.

STABILIZED CONSTRUCTION ENTRANCE, MATERIAL DELIVERY AND STORAGE AREA. WASTE COLLECTING AREA, AND EQUIPMENT AREA SHALL BE DESIGNATED BY SITE SUPERVISOR AND INCLUDED ON THE SWPPP / EROSION CONTROL PLAN. AS SITE CONDITIONS CHANGE, THE SWPPP / EROSION CONTROL PLAN SHALL BE UPDATED TO REFLECT CURRENT CONDITIONS.

SAMPLING LOCATIONS:

THE CONTRACTOR/SUPERVISOR OR QUALIFIED SWPPP PRACTITIONER (QSP) SHALL VERIFY SAMPLING LOCATIONS AT ALL DISCHARGE POINTS IN THE FIELD. SAMPLING LOCATIONS SHALL BE REPRESENTATIVE OF CURRENT SITE CONDITIONS, DISTURBED AREAS AND CONSTRUCTION PHASING. ANY UPDATES TO THE SAMPLING LOCATIONS (E.G., AS A RESULT OF CONSTRUCTION PHASING) SHALL BE NOTED ON THIS MAP AND/OR SWPPP EXHIBITS.

40 0 10 25 40
SCALE 1 INCH = 40 FEET

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Project
3049 EAST VERNON AVENUE
VERNON
LOS ANGELES COUNTY CALIFORNIA

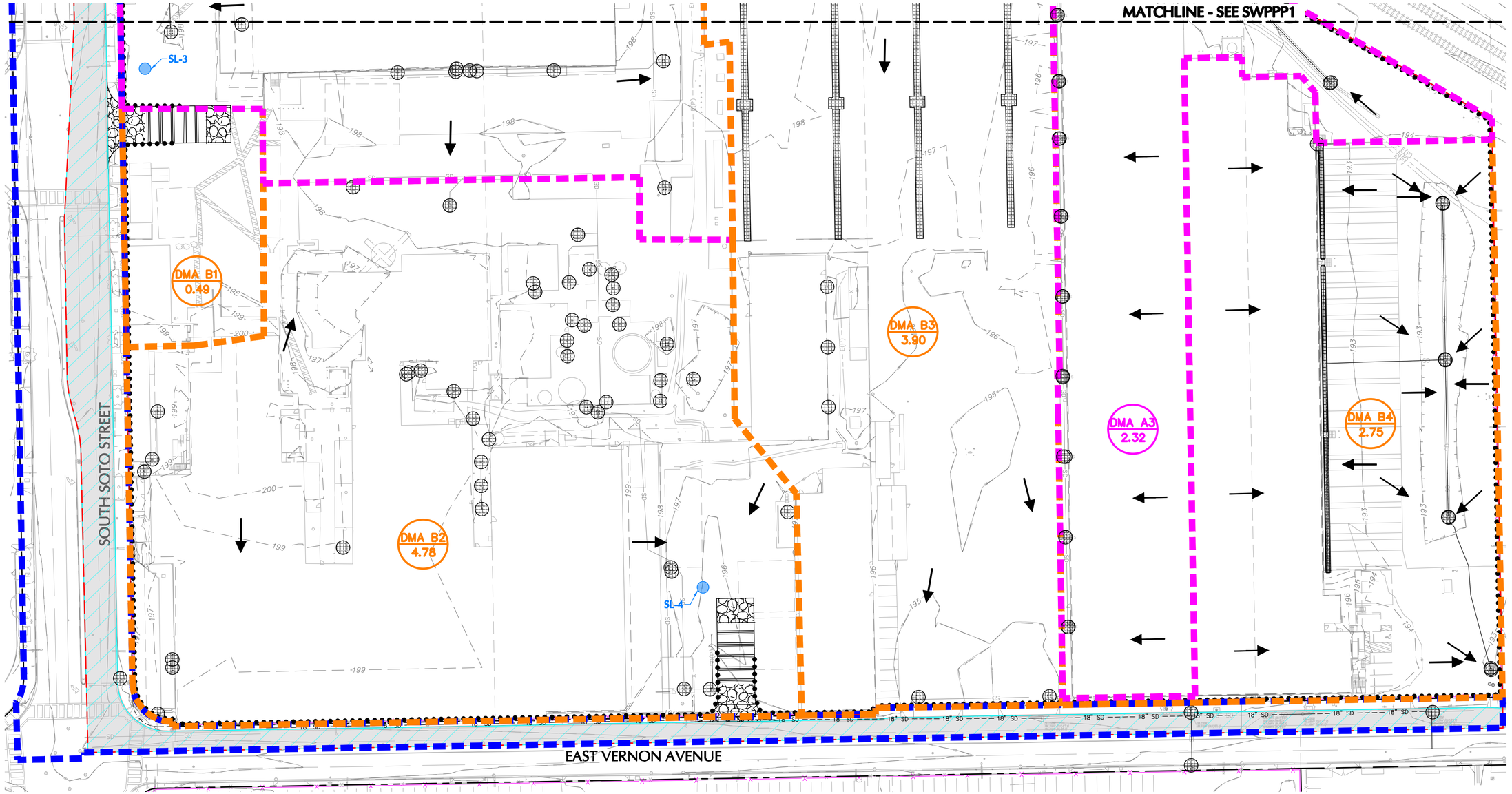
Drawing Title
SWPPP EXHIBIT

Project No.	Drawing No.
721040501	SWPPP1
Date: 03/28/2024	
Drawn By: GM	
Checked By: KK/MRG	

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- LIMIT OF WORK
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- SAMPLING LOCATION

*LOCATIONS MAY VARY DUE TO ACTUAL SITE CONDITIONS DURING CONSTRUCTION.

40 0 10 25 40
SCALE 1 INCH = 40 FEET

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Project	3049 EAST VERNON AVENUE
	VERNON
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LANGAN Project No. 721040501

DEMOLITION AND EROSION AND SEDIMENT CONTROL PLANS

FOR

3049 EAST VERNON AVENUE

VERNON, CALIFORNIA

EROSION CONTROL NOTES:

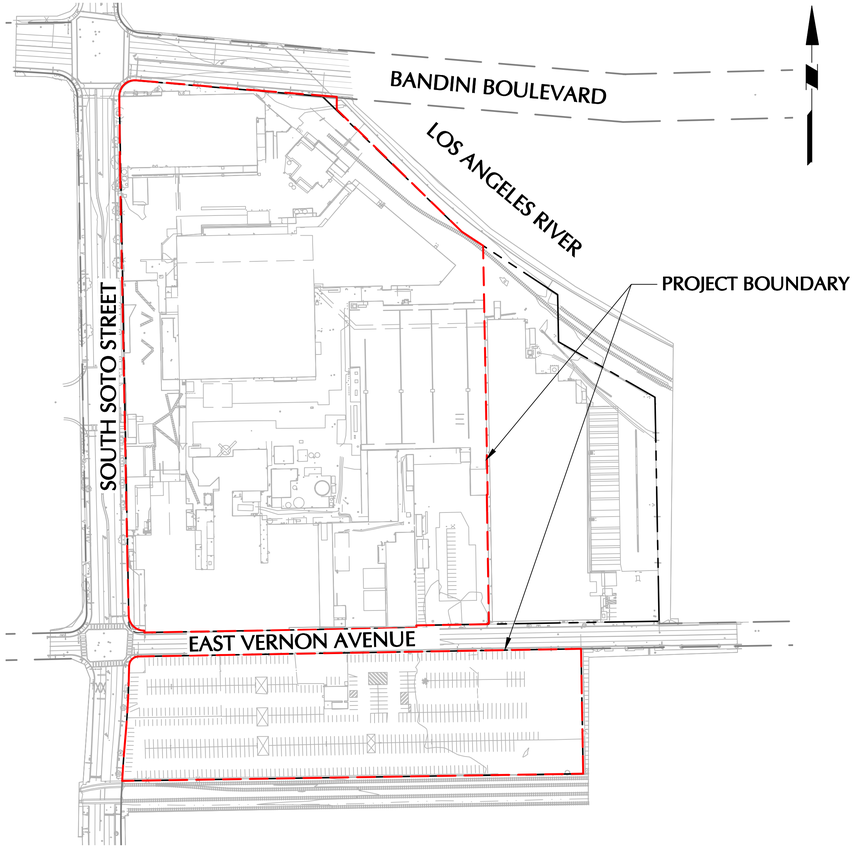
1. IN CASE OF EMERGENCY, CALL (RESPONSIBLE PERSON) AT (24–HOUR TELEPHONE).
2. POLLUTION AND EROSION PREVENTION MEASURES, ALSO KNOWN AS BEST MANAGEMENT PRACTICES (BMPS), MUST BE INSTALLED PRIOR TO GRADING. THESE MEASURES, INCLUDING THE PREVENTION OF SEDIMENTATION OR FLOOD DAMAGE, TO OFFSITE PROPERTY SHALL BE ADEQUATE WHETHER OR NOT AN EROSION CONTROL PERMIT IS REQUIRED.
3. ERODED SEDIMENTS AND OTHER POLLUTANTS MUST BE RETAINED ONSITE AND MAY NOT BE TRANSPORTED FROM THE SITE VIA SHEET FLOW, SWALES, AREA DRAINS, NATURAL DRAINAGE COURSES, OR WIND.
4. EROSION CONTROL DEVICES SHALL BE FUNCTIONING AT ALL TIMES. IN CASE OF FAILURE, RAPID CONSTRUCTION OF EMERGENCY DEVICES SHALL BE IMPLEMENTED.
5. STOCKPILES OF EARTH AND OTHER CONSTRUCTION–RELATED MATERIALS MUST BE PROTECTED FROM BEING TRANSPORTED FROM THE SITE BY THE FORCES OF WIND OR WATER.
6. FUELS, OILS, SOLVENTS, AND OTHER TOXIC MATERIALS MUST BE STORED IN ACCORDANCE WITH THEIR LISTING AND ARE NOT TO CONTAMINATE THE SOILS AND SURFACE WATERS. ALL APPROVED STORAGE CONTAINERS ARE TO BE PROTECTED FROM THE WEATHER. SPILLS MUST BE CLEANED UP IMMEDIATELY AND DISPOSED OF IN A PROPER MANNER. SPILLS MAY NOT BE WASHED INTO THE DRAINAGE SYSTEM.
7. EXCESS OR WASTE CONCRETE MUST BE CONTAINED ONSITE. PROVISIONS SHALL BE MADE TO RETAIN CONCRETE WASTES ONSITE UNTIL THEY CAN BE DISPOSED OF AS SOLID WASTE.
8. DEVELOPERS/CONTRACTORS ARE RESPONSIBLE TO ENSURE ALL EROSION CONTROL DEVICES AND BMPS ARE INSTALLED AND FUNCTIONING PROPERLY PER PLAN. PROPER PRECAUTION SHALL BE CONSIDERED WHEN 50% OR GREATER PROBABILITY OF PREDICTED PRECIPITATION, AND AFTER ACTUAL PRECIPITATION. A CONSTRUCTION SITE INSPECTION CHECKLIST AND INSPECTION LOG SHALL BE MAINTAINED AT THE PROJECT SITE AT ALL TIMES AND AVAILABLE FOR REVIEW BY THE BUILDING OFFICIAL.
9. TRASH AND CONSTRUCTION–RELATED SOLID WASTES MUST BE DEPOSITED INTO A COVERED RECEPTACLE TO PREVENT CONTAMINATION OF RAINWATER AND DISPERSAL BY WIND.
10. SEDIMENTS AND OTHER MATERIALS MAY NOT BE TRACKED FROM THE SITE BY VEHICLE TRAFFIC. THE CONSTRUCTION ENTRANCE ROADWAYS MUST BE STABILIZED SO AS TO INHIBIT SEDIMENTS FROM BEING DEPOSITED INTO THE PUBLIC WAY. ACCIDENTAL DEPOSITIONS MUST BE SWEPT UP IMMEDIATELY AND MAY NOT BE WASHED DOWN BY RAIN OR OTHER MEANS.
11. ANY SLOPES WITH DISTURBED SOILS OR DENUDED OF VEGETATION MUST BE STABILIZED SO AS TO INHIBIT EROSION BY WIND AND WATER.
12. ALL SILT AND DEBRIS SHALL BE REMOVED FROM ALL DEVICES WITHIN 24 HOURS AFTER EACH RAINSTORM AND BE DISPOSED OF PROPERLY.
13. ALL STORM WATER CAPTURE DEVICES SHALL BE PROTECTED AT ALL TIMES.

DEMOLITION NOTES:

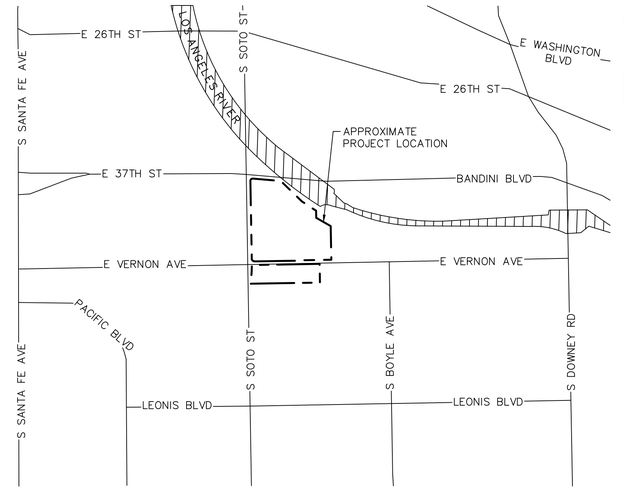
1. NO WORK SHALL PROCEED PRIOR TO THE PRESENCE OF A STORM WATER POLLUTION PREVENTION PLAN (SWPPP) ON SITE.
2. DEMOLITION WORK SHALL ONLY OCCUR WITHIN THE SITE PROPERTY LINE AND WITHIN THE LIMIT OF WORK LINE UNLESS OTHERWISE NOTED.
3. CONTRACTOR TO CLEAR AND GRUB THE SITE WITHIN THE DEMOLITION LIMITS. THE CONTRACTOR SHALL DEMOLISH AND REMOVE FROM THE SITE ALL STRUCTURES, PLANTERS, AND ALL OTHER SITE FEATURES UNLESS OTHERWISE NOTED ON THE PLAN.
4. REMOVAL OF LANDSCAPE SHALL INCLUDE ROOTS AND ORGANIC MATERIAL.
5. THE CONTRACTOR SHALL VERIFY THE LOCATION AND QUANTITY OF EXISTING SURFACE STRUCTURES AND SHALL BE RESPONSIBLE FOR ANY UNIDENTIFIED UTILITIES, IMPROVEMENTS TREES, ETC. TO BE DEMOLISHED AND REMOVED WITHIN THE DEMOLITION LIMITS.
6. ANY DIRT, ROCK OR CONSTRUCTION MATERIAL THAT MAY BE TRACKED OR DROPPED WITHIN THE PUBLIC RIGHT–OF–WAY DURING THE TRANSPORTATION OF SAID MATERIAL OR EQUIPMENT ASSOCIATED WITH THE PROJECT SHALL BE CLEANED OR REMOVED DAILY AND AS DEEMED NECESSARY BY THE INSPECTOR OF RECORD.
7. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND PAYING ALL FEES ASSOCIATED WITH DEMOLITION AND DISPOSAL OF ALL SITE MATERIALS AS REQUIRED BY PRIVATE, LOCAL AND STATE JURISDICTION.
8. CONTRACTOR IS RESPONSIBLE FOR COORDINATING THE CUTTING AND REMOVAL OF PAVEMENT AND/OR EARTHWORK AS REQUIRED FOR EXECUTION OF OTHER TRADE WORK.
9. THE CONTRACTOR SHALL PROVIDE TEMPORARY BARRICADES AND OTHER FORMS OF PROTECTION TO PROTECT GENERAL PUBLIC FROM INJURY DUE TO DEMOLITION WORK.
10. THE CONTRACTOR SHALL PROTECT FROM DAMAGE EXISTING FEATURES AND BUILDINGS THAT ARE TO REMAIN IN PLACE DURING DEMOLITION OPERATIONS.
11. THE CONTRACTOR SHALL MAINTAIN EXISTING UTILITIES UNLESS OTHERWISE NOTED, AND PROTECT THEM AGAINST DAMAGE DURING DEMOLITION OPERATIONS. REMOVE ABANDONED UTILITIES AND DISCONNECTED UTILITY SERVICES AS INDICATED. LOCATE, IDENTIFY, AND CUT AND CAP AT POINT OF UTILITY SERVICE CONNECTION TO SITE.
12. THE CONTRACTOR SHALL PATCH AND REPAIR ALL EXISTING, REMAINING INFRASTRUCTURE INCLUDING UTILITIES WHICH ARE DAMAGED BY DEMOLITION AND EXCAVATION ACTIVITY.
13. WHERE DEMOLITION WORK ABUTS EXISTING PAVEMENTS, CURBS OR WALLS THAT ARE TO REMAIN, THE EXISTING MATERIALS SHALL BE CLEANLY SAWCUT TO PROVIDED A CLEAN, NEAT MATCH AND A SMOOTH, FLUSH TRANSITION.
14. PRIOR TO ANY EXCAVATION, THE DEMOLITION CONTRACTOR SHALL ENGAGE AN INDEPENDENT UTILITY MARK–OUT COMPANY TO IDENTIFY ALL BELOW GRADE UTILITIES WITHIN THE CONSTRUCTION AREA LIMIT OF WORK. EXCAVATION MAY NOT TAKE PLACE UNTIL ALL UNDERGROUND UTILITIES ARE LOCATED AND IDENTIFIED.
15. ALL VOIDS FROM DEMOLITION WORK INCLUDING BUT NOT LIMITED TO REMOVED FOUNDATIONS, CONCRETE SLABS, PITS, AND UTILITIES SHALL BE BACKFILLED WITH SUITABLE IMPORTED FILL TO A FINISH GRADE ELEVATION THAT IS LEVEL WITH ADJACENT PAVEMENT AND SIDEWALKS. GRADING SHALL BE DONE TO MAINTAIN POSITIVE DRAINAGE AWAY FROM EXISTING BUILDINGS.

UTILITY NOTES:

1. THE LOCATIONS, SIZES, MATERIALS, AND DEPTHS OF EXISTING UNDERGROUND UTILITIES AS SHOWN ON THIS PLAN WERE OBTAINED FROM RECORD SOURCES AND OR FIELD SURVEY. THE CONTRACTOR IS CAUTIONED THAT ONLY ACTUAL EXCAVATION WILL REVEAL THE LOCATIONS, SIZES, MATERIALS, DEPTHS, AND INTEGRITY OF UNDERGROUND UTILITIES. THE CONTRACTOR SHALL VERIFY ALL UNDERGROUND UTILITIES PRIOR TO ANY EXCAVATION OR CONSTRUCTION WORK. THE CONTRACTOR SHALL CONTACT UNDERGROUND SERVICE ALERT FOR LOCATION OF UNDERGROUND UTILITIES AT LEAST 48 HOURS PRIOR TO COMMENCEMENT OF CONSTRUCTION. DIAL 8–1–1. THE CONTRACTOR IS REQUIRED TO TAKE DUE PRECAUTIONARY MEASURES TO PROTECT THE UTILITIES AND STRUCTURES SHOWN ON THIS PLAN, AND ANY OTHER LINES OR STRUCTURES NOT OF RECORD OR NOT SHOWN ON THESE PLANS. THE CONTRACTOR IS RESPONSIBLE FOR ANY DAMAGE TO THESE LINES OR STRUCTURES THE CONTRACTOR OR THE CONTRACTOR'S CREW CAUSES, AND SHALL BE RESPONSIBLE FOR THE COST, COORDINATION, AND REPAIR OF SUCH.
2. CONTRACTOR SHALL COORDINATE WITH ALL UTILITY PURVEYORS ALL TERMINATION, ABANDONMENT, AND/OR RELOCATION OR EXISTING UTILITIES AFFECTED BY THIS PROJECT CONSTRUCTION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE COMPLETION OF SAID WORK WHETHER OR NOT INDICATED ON PLAN HEREON.



SITE MAP
SCALE: 1" = 150'



VICINITY MAP
SCALE: 1" = 1000'

OWNER

GIC VERNON LLC/GOODMAN
3333 MICHAELSON
SUITE 1050
IRVINE, CA 92612
(949) 407-0100

CIVIL ENGINEER

LANGAN ENGINEERING AND
ENVIRONMENTAL SERVICES, INC
515 SOUTH FLOWERS STREET
SUITE 1060
LOS ANGELES, CA 90071
(213) 314-8100

SHEET INDEX

PAGE NUMBER	DRAWING NUMBER	DRAWING TITLE
1	GI001	TITLE SHEET
2	CD101	DEMOLITION PLAN
3	CD102	DEMOLITION PLAN
4	CE101	EROSION AND SEDIMENT CONTROL PLAN
5	CE102	EROSION AND SEDIMENT CONTROL PLAN
6	CE501	EROSION AND SEDIMENT CONTROL DETAILS

UNDERGROUND SERVICE ALERT

811 Know what's **below.** **Call** before you dig.

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Date	Description	No.
Revisions		

REGISTERED PROFESSIONAL ENGINEER MICHAEL RYAN GOLIAS C91029 CIVIL STATE OF CALIFORNIA

Signature Date

MICHAEL GOLIAS
PROFESSIONAL ENGINEER CA Lic. No. 91029

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Project
3049 EAST VERNON AVENUE
VERNON
LOS ANGELES COUNTY CALIFORNIA

Drawing Title
COVER SHEET

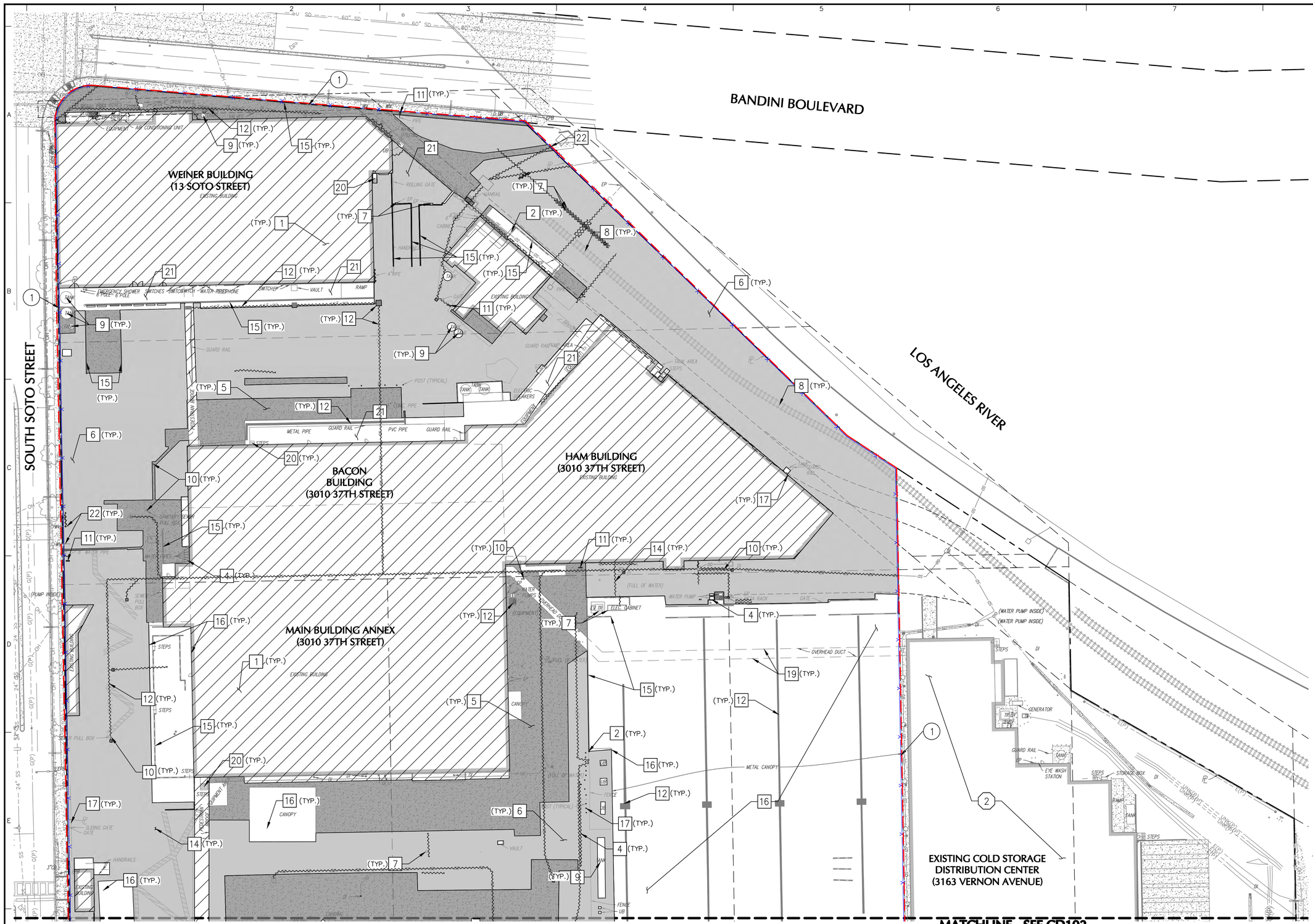
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Date 07/21/2023
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Drawing No. GI001
Sheet 1 of 6

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Project No. 721040501

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CONTRACTOR NOTES:

1. EVERYTHING WITHIN THE LIMIT OF WORK IS TO BE REMOVED, EXCEPT AS WHERE NOTED ON THE PLAN, INCLUDING BUT NOT LIMITED TO THE FOLLOWINGS:
   A. REMOVE OVERHEAD UTILITIES THAT CONNECT TO THE EXISTING BUILDINGS/STRUCTURES WITHIN THE LIMIT OF WORK. CONTRACTOR TO COORDINATE REMOVAL WITH UTILITY COMPANY(S)
   B. REMOVE AND CAP ALL SANITARY SEWER AND WATER LINES AS CLOSE TO TO THE PROPERTY LINE AS POSSIBLE.
   C. REMOVE EXISTING SEPTIC TANKS WITHIN THE LIMIT OF WORK.
   D. REMOVE EXISTING TREES WITHIN THE LIMIT OF WORK.
2. CONTRACTOR TO CONTACT THE UTILITIES CUSTOMER SERVICE DEPARTMENT (323) 583-8811, EXT. 202 TO REMOVE ELECTRICAL, GAS, OR WATER METERS UPON TERMINATION OF SERVICES TO DEMOLITION AREA.
3. CONTRACTOR SHALL CONFORM TO CITY OF VERNON GUIDELINES TO BUILDING DEMOLITION PROJECT.
4. CONTRACTOR TO SAWCUT EX. PAVEMENT ALONG PROPERTY LINE.

LEGEND:

- DEMOLISH ASPHALT PAVEMENT
- DEMOLISH CONCRETE PAVEMENT
- DEMOLISH EXISTING BUILDING/STRUCTURE INCLUDING FOUNDATION IF APPLICABLE
- INSTALL TEMPORARY CHAIN LINK FENCE
- LIMIT OF WORK
- PROPERTY LINE
- EASEMENT
- UTILITY TO BE REMOVED

DEMOLITION NOTES:

1 DEMOLISH AND REMOVE (EX.) BUILDING/STRUCTURE
2 DEMOLISH AND REMOVE (EX.) FENCE
3 REMOVE (EX.) ELECTRICAL POWER POLE AND OVERHEAD LINE
4 REMOVE (EX.) WATER PIPE/STRUCTURE
5 DEMOLISH AND REMOVE (EX.) CONCRETE
6 DEMOLISH AND REMOVE (EX.) ASPHALT
7 REMOVE (EX.) ELECTRICAL EQUIPMENT/LINE/STRUCTURE
8 DEMOLISH AND REMOVE (EX.) RAIL
9 REMOVE (EX.) WATER TANK AND PROPANE TANK
10 REMOVE (EX.) SANITARY LINE/STRUCTURE
11 REMOVE (EX.) FIRE HYDRANT AND FDC
12 REMOVE (EX.) STORM PIPE/STRUCTURE
13 REMOVE (EX.) TELECOM LINE/STRUCTURE
14 REMOVE (EX.) GAS LINE/STRUCTURE
15 DEMOLISH AND REMOVE (EX.) WALL
16 DEMOLISH AND REMOVE (EX.) CANOPY/STRUCTURE AND FOUNDATION/SLAB UNDER
17 REMOVE (EX.) SITE FEATURE
18 REMOVE (EX.) LANDSCAPING
19 REMOVE (EX.) OVERHEAD DUCT
20 DEMOLISH AND REMOVE (EX.) STAIRS/RAMP
21 DEMOLISH AND REMOVE (EX.) LOADING DOCK
22 CUT AND CAP (EX.) UTILITY AT PROPERTY LINE

CONSTRUCTION NOTES:

1 INSTALL 6-FT HIGH TEMPORARY CONSTRUCTION CHAIN LINK FENCE.

ITEMS TO BE PROTECTED IN PLACE:

1 (EX.) CONCRETE BLOCK WALL AND FOUNDATION
2 (EX.) BUILDING AND ASSOCIATED UTILITIES. MAINTAIN (EX.) UNDERGROUND INDUSTRIAL WASTE PIPING WITHIN PROJECT LIMITS UNTIL NEW CONNECTION IS ESTABLISHED.

UNDERGROUND SERVICE ALERT

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ARTICLE 2, SECTION 4216 OF THE GOVERNMENT CODE REQUIRES A DIG ALERT IDENTIFICATION NUMBER BE ISSUED BEFORE A "PERMIT TO EXCAVATE" WILL BE VALID. FOR YOUR DIG ALERT I.D. NUMBER CALL UNDERGROUND SERVICE ALERT AT THE NUMBER ABOVE.

40 0 10 25 40
SCALE 1 INCH = 40 FEET

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Revisions		

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Signature Date

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Project
3049 EAST VERNON AVENUE
VERNON
LOS ANGELES COUNTY CALIFORNIA

Drawing Title
DEMOLITION PLAN

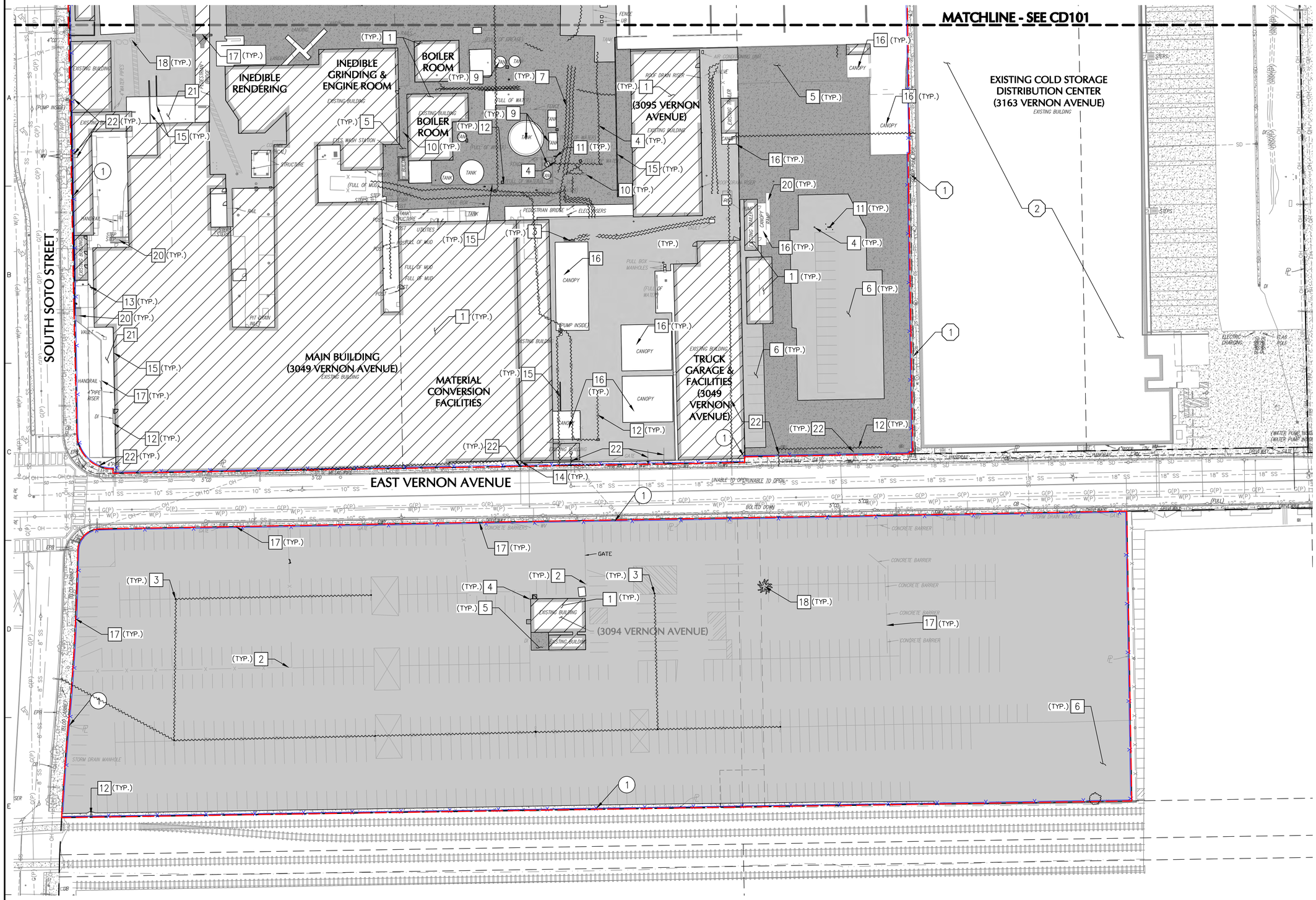
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CONTRACTOR NOTES:

1. EVERYTHING WITHIN THE LIMIT OF WORK IS TO BE REMOVED PER CITY OF VERNON GUIDELINES FOR BUILDING DEMOLITION PROJECTS, EXCEPT AS WHERE NOTED ON THE PLAN, INCLUDING BUT NOT LIMITED TO THE FOLLOWINGS:
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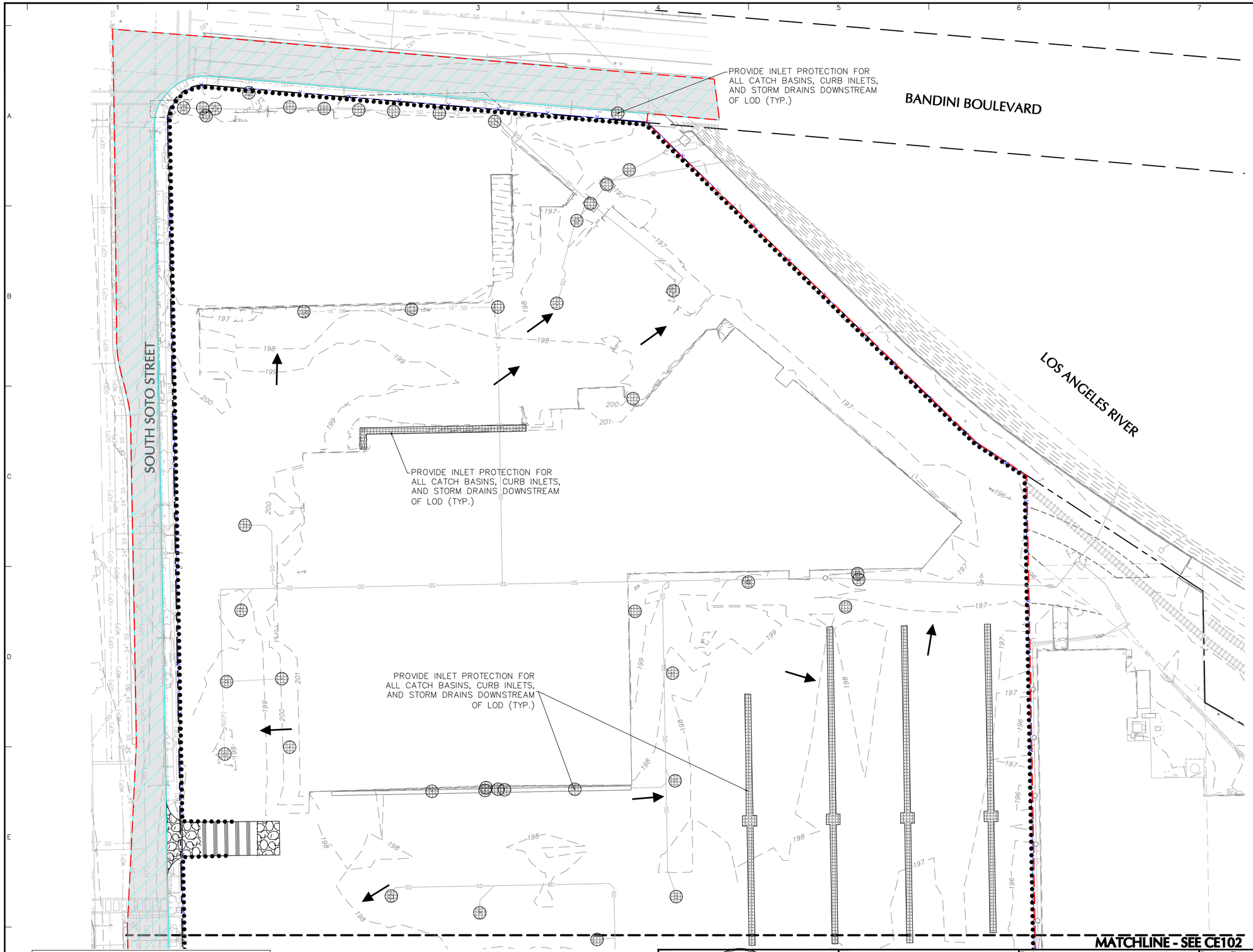
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DEMOLITION PLAN

Project No.	Drawing No.
721040501	CD102
Date: 07/21/2023	
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Sheet 3 of 6	

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LEGEND

- LIMIT OF WORK
- PROPERTY BOUNDARY
- FIBER ROLL. SEE DETAIL C ON CE501
- STAGING AREA*
- TEMPORARY 6-FT HIGH CONSTRUCTION CHAIN LINK FENCE
- TC-1 STABILIZED CONSTRUCTION ENTRANCE/EXIT. SEE DETAIL A ON CE501
- WASTE MANAGEMENT* (SEE PLAN FOR TYPE)
  - WM-5 = SOLID WASTE MANAGEMENT
  - WM-6 = HAZARDOUS WASTE MANAGEMENT
  - WM-7 = CONTAMINATED SOIL MANAGEMENT
  - WM-8 = CONCRETE WASTE MANAGEMENT
  - WM-9 = SANITARY WASTE MANAGEMENT
  - WM-10 = LIQUID WASTE MANAGEMENT
- CONSTRUCTION TRAILER
- SE-7 STREET SWEEPING AND VACUUMING
- FLOW ARROW
- SE-10 INLET PROTECTION. SEE DETAIL D ON CE501

*LOCATIONS MAY VARY DUE TO ACTUAL SITE CONDITIONS DURING CONSTRUCTION.

NOTES:

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STABILIZED CONSTRUCTION ENTRANCE, MATERIAL DELIVERY AND STORAGE AREA. WASTE COLLECTING AREA, AND EQUIPMENT AREA SHALL BE DESIGNATED BY SITE SUPERVISOR AND INCLUDED ON THE SWPPP / EROSION CONTROL PLAN. AS SITE CONDITIONS CHANGE, THE SWPPP / EROSION CONTROL PLAN SHALL BE UPDATED TO REFLECT CURRENT CONDITIONS.

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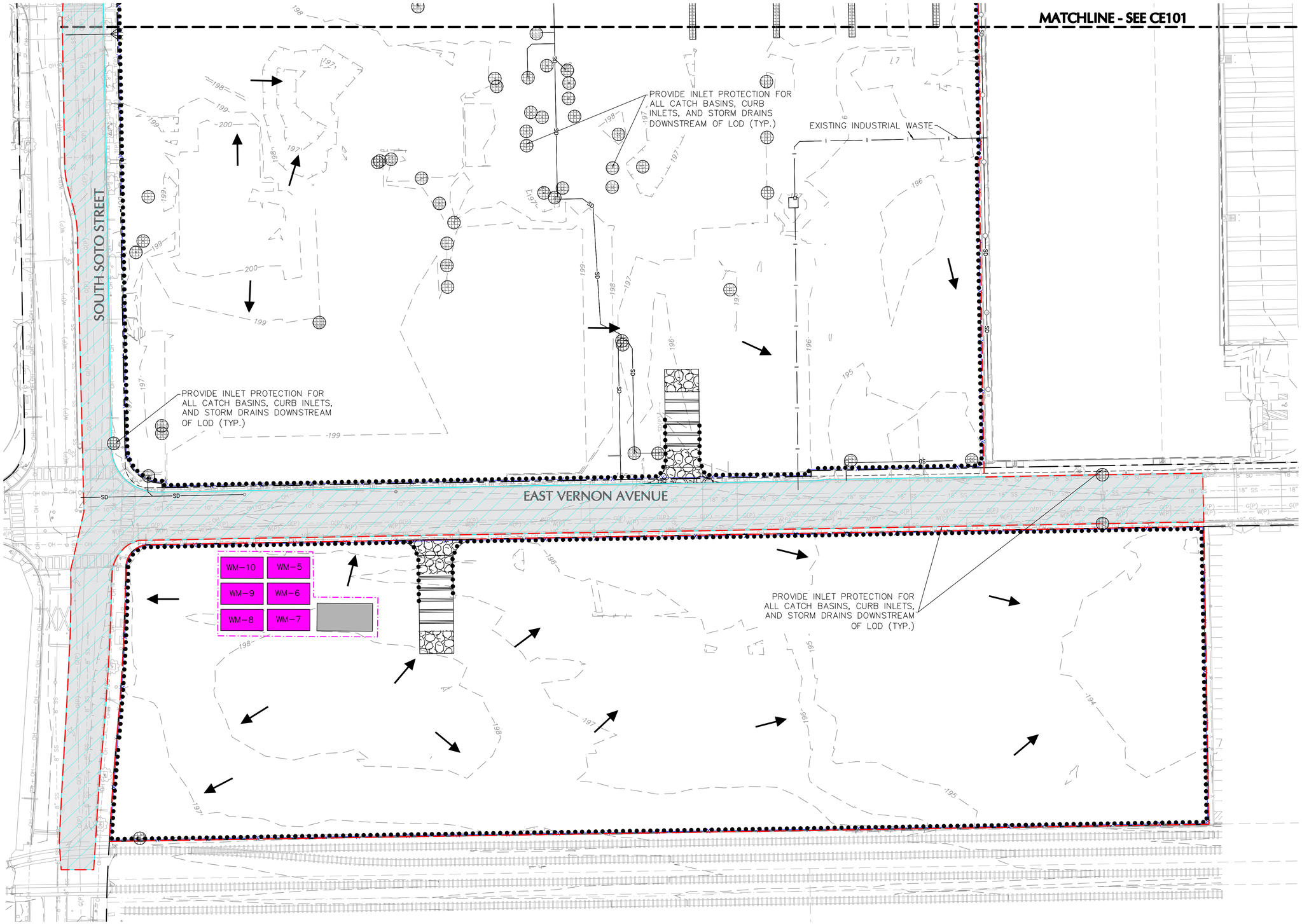
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EROSION AND SEDIMENT CONTROL PLAN

Project No.	Drawing No.
721040501	CE101
Date: 07/21/2023	
Drawn By: LEH	
Checked By: CH	Sheet 4 of 6

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Project No. 721040501

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LEGEND

- LIMIT OF WORK
- PROPERTY BOUNDARY
- FIBER ROLL. SEE DETAIL C ON CE501
- STAGING AREA*
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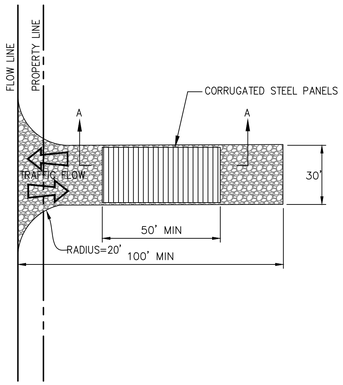
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EROSION AND SEDIMENT CONTROL PLAN

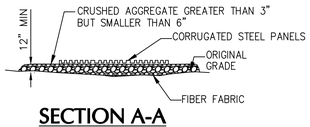
Project No.	Drawing No.
721040501	CE102
Date: 07/21/2023	
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Sheet 4 of 6	

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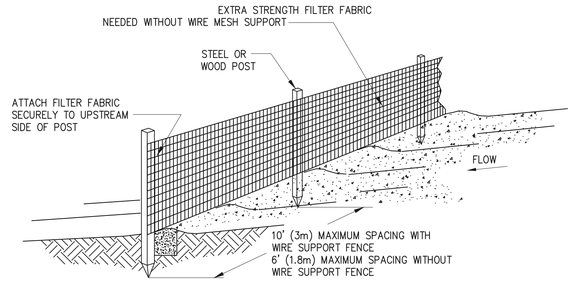


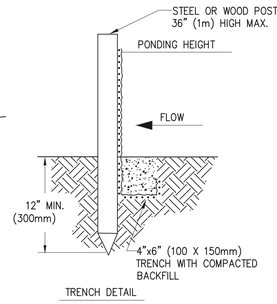
SECTION A-A

STABILIZED CONSTRUCTION ENTRANCE/EXIT

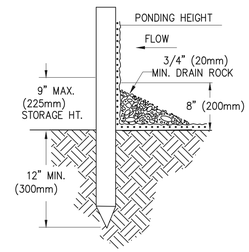
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NOT TO SCALE





TRENCH DETAIL



INSTALLATION WITHOUT TRENCHING

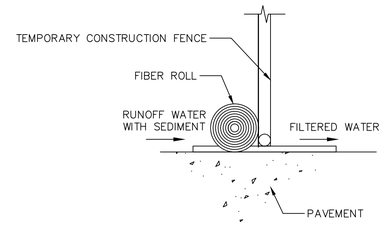
SILT FENCE NOTES:

1. SILT FENCE SHALL BE PLACED ON SLOPE
2. INSPECT AND REPAIR FENCE AFTER EACH STORM EVENT AND REMOVE SEDIMENT WHEN NECESSARY. 9" (225mm) MAXIMUM RECOMMENDED STORAGE HEIGHT.
3. REMOVED SEDIMENT SHALL BE DEPOSITED TO AN AREA THAT WILL NOT CONTRIBUTE SEDIMENT OFF-SITE AND CAN BE PERMANENTLY STABILIZED.

SILT FENCE

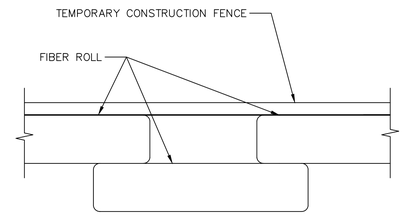
B/

NOT TO SCALE



SECTION DETAIL – IN FLAT AREA

SCALE: N.T.S.



PLAN DETAIL – IN FLAT AREA

SCALE: N.T.S.

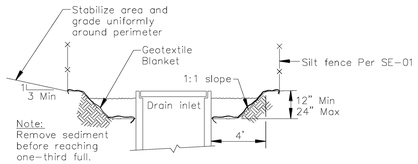
NOTES:

1. FIBER ROLL INSTALLATION REQUIRES THE PLACEMENT AND SECURE FASTENING OF ROLL TO TEMPORARY CONSTRUCTION FENCE.
2. RUNOFF MUST NOT BE ALLOWED TO RUN UNDER OR AROUND FIBER ROLL.
3. ADJACENT ROLLS SHOULD BE OVERLAPPED, NOT ABUTTED

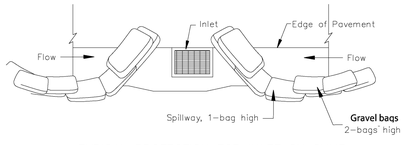
FIBER ROLL

C/

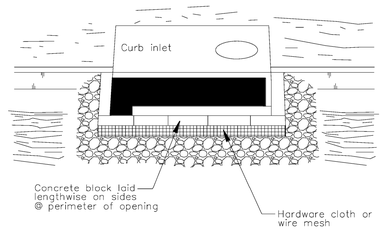
NOT TO SCALE

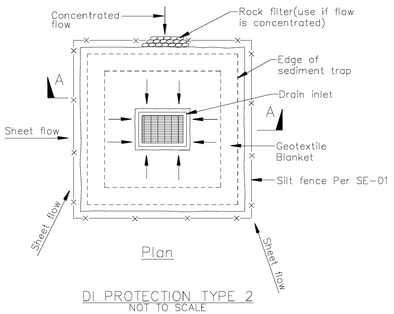


Section A-A



TYPICAL PROTECTION FOR INLET ON SUMP



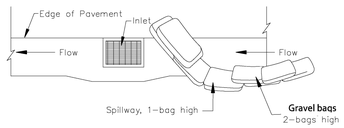


Plan

DI PROTECTION TYPE 2

NOT TO SCALE

Notes
1. For use in cleared and grubbed and in graded areas.
2. Shape basin so that longest inflow area faces longest length of trap.
3. For concentrated flows, shape basin in 2:1 ratio with length oriented towards direction of flow.

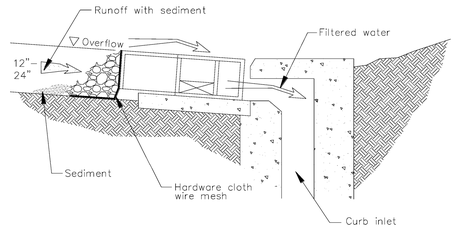


TYPICAL PROTECTION FOR INLET ON GRADE

NOTES:
1. Intended for short-term use.
2. Use to inhibit non-storm water flow.
3. Allow for proper maintenance and cleanup.
4. Bags must be removed after adjacent operation is completed
5. Not applicable in areas with high silts and clays without filter fabric.
6. **Protection can be effective even if it is not immediately adjacent to the inlet provided that the inlet is protected from potential sources of pollution.**

DI PROTECTION TYPE 3

NOT TO SCALE



DI PROTECTION – TYPE 4

NOT TO SCALE

INLET PROTECTION

D/

NOT TO SCALE

No.	Description	Date
Revisions		

REGISTERED PROFESSIONAL ENGINEER MICHAEL RYAN GOLIAS C91029 CIVIL STATE OF CALIFORNIA

Signature Date

MICHAEL GOLIAS

PROFESSIONAL ENGINEER CA Lic. No. 91029

LANGAN

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Los Angeles, CA 90071

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Project

3049 EAST VERNON AVENUE

VERNON

LOS ANGELES COUNTY CALIFORNIA

Drawing Title

EROSION AND SEDIMENT CONTROL DETAILS

Project No.	Drawing No.
721040501	CE501
Date: 07/21/2023	
Drawn By: LEH	
Checked By: CH	Sheet 6 of 6

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Project No. 721040501

Date: 7/27/2023 Time: 11:31 User: gmorelli Style Table: Langan.stb Layout: CE501 Document Code: 721040501-0301-CE501-0101

Appendix B: Permit Registration Documents

Permit Registration Documents included in this Appendix:

Location in SWPPP	Permit Registration Document (in addition to a copy of the SWPPP)
Y	Notice of Intent (previous 2009 CGP)
Y	Risk Level Determination
N	Certification
Y	Post-Construction Requirements, if applicable
N	Post-Construction Water Balance Calculator, if applicable
N	Copy of Annual Fee Receipt
N	ATS Design Documents, if applicable
N	Passive Treatment Design Documents, if applicable
Y	Site Maps and Drawings, see Appendix A

ATTACHMENT D.1

RISK DETERMINATION WORKSHEET

NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
GENERAL PERMIT FOR STORMWATER DISCHARGES ASSOCIATED
WITH CONSTRUCTION AND LAND DISTURBANCE ACTIVITIES
(GENERAL PERMIT)

The Risk Determination Worksheet in this Attachment serves as guidance for construction stormwater dischargers and may be used to manually calculate the site-specific risk of a construction project. Dischargers are required to submit risk information using the Stormwater Multiple Application and Report Tracking System (SMARTS) as part of filing a Notice of Intent for coverage under the Construction Stormwater General Permit.

Dischargers may use SMARTS to auto-populate values for the soil erodibility factor (K factor), length-slope factor (LS factor), and the receiving water risk (the risk sediment poses to receiving waters) based on the provided latitude and longitude coordinates for the project. SMARTS relies on the same data as the GIS map method, which dischargers can use to confirm the auto-populated values. Dischargers may alternatively use the individual method, a site-specific analysis, to determine the K factor, LS factor, and receiving water risk where GIS data may not accurately reflect the site's characteristics.

Dischargers may use a combination of the GIS map method or individual method to calculate the K factor, LS factor, sediment risk, and receiving water risk in steps 1 and 2, depending on which method is judged to be the most accurate for the site.

SMARTS will automatically determine the combined Risk Level based on the entered information.

Instructions:

Step 1 – Determine sediment risk via one of the following options:

- GIS Map Method - EPA Rainfall Erosivity Calculator & GIS Map
- Individual Method - EPA Rainfall Erosivity Calculator & Individual Data

Step 2 – Determine receiving water risk via one of the following options:

- GIS Map Method - GIS Map of Sediment-Sensitive Watersheds
- Individual Method - Provided Sediment Impaired Water Bodies

Step 3 – Determine combined Risk Level

Step 1 – Sediment Risk Worksheet

The Construction Stormwater General Permit requires dischargers to calculate sediment risk by multiplying the rainfall erosivity (R), soil erodibility (K), and length-slope (LS) factors. Determine the values for each of the factors and use the table below to assess the site-specific sediment risk for the construction project.

a. Rainfall Erosivity (R) Factor

Analyses of data indicated that when factors other than rainfall are held constant, soil loss is directly proportional to a rainfall factor composed of total storm kinetic energy (E) times the maximum 30-minute intensity (I30) (Wischmeier and Smith, 1958). The numerical value of R is the average annual sum of EI30 for storm events during a rainfall record of at least 22 years. "Isoerodent" maps were developed based on R values calculated for more than 1000 locations in the Western U.S.

A guide for the U.S. EPA Rainfall Erosivity Factor Calculator (https://www.waterboards.ca.gov/water_issues/programs/stormwater/smarts/construction/docs/rfactor_guide.pdf) is available to dischargers to assist with calculating the site-specific R factor.

R Factor Value = ____**134.82**_____

b. Soil Erodibility (K) Factor

The soil erodibility (K) factor represents: (1) susceptibility of soil or surface material to erosion, (2) transportability of the sediment, and (3) the amount and rate of runoff given a particular rainfall input, as measured under a standard condition. Fine-textured soils that are high in clay have low K values (about 0.05 to 0.15) because the particles are resistant to detachment. Coarse-textured soils, such as sandy soils, also have low K values (about 0.05 to 0.2) because of high infiltration resulting in low runoff even though these particles are easily detached. Medium-textured soils, such as a silt loam, have moderate K values (about 0.25 to 0.45) because they are moderately susceptible to particle detachment and they produce runoff at moderate rates. Soils having a high silt content are especially susceptible to erosion and have high K values, which can exceed 0.45 and can be as large as 0.65. Silt-size particles are easily detached and tend to crust, producing high rates and large volumes of runoff.

A soil erodibility nomograph is provided on page 4 to assist the discharger with determining the site-specific K factor.

K Factor Value = ____**0.32**____

c. Length-Slope (LS) Factor

The effect of topography on erosion is accounted for by the LS factor, which combines the effects of a hillslope-length factor, L, and a hillslope-gradient factor, S. Generally speaking, as hillslope length and/or hillslope gradient increase, soil loss increases. As hillslope length increases, total soil loss and soil loss per unit area increase due to the progressive accumulation of runoff in the downslope direction. As the hillslope gradient increases, the velocity and erosivity of runoff increases.

A length-slope table is provided on page 5 to assist the discharger with estimating the weighted LS factor for the site prior to construction.

LS Factor Value = ___**0.41**____

d. Watershed Erosion Estimate

Estimate watershed erosion by multiplying the R, K, and LS factors, then use the table below to determine the site-specific sediment risk for the project.

Watershed Erosion Estimate (tons/acre) = R x K x LS = ___**17.69**___

Watershed Erosion Estimate (tons/acre)	Site-Specific Sediment Risk
Less than 15 tons/acre	Low
Greater than or equal to 15 tons/acre and less than 75 tons/acre	Medium
Greater than or equal to 75 tons/acre	High

Site-specific Sediment Risk (High, Medium, or Low) = ___**Medium**__

e. Sediment Risk GIS Map Method

In addition to the U.S. EPA Rainfall Erosivity Factor Calculator, State Water Board staff has prepared map tools to assist dischargers with estimating site-specific K and LS factors. Dischargers may use the map tools instead of manually determining the K and LS factors using the nomograph on page 4 and tables on page 5. Additionally, SMARTS is equipped with an auto-populate feature that can generate K and LS factors given the project latitude and longitude coordinates.

K Factor Map

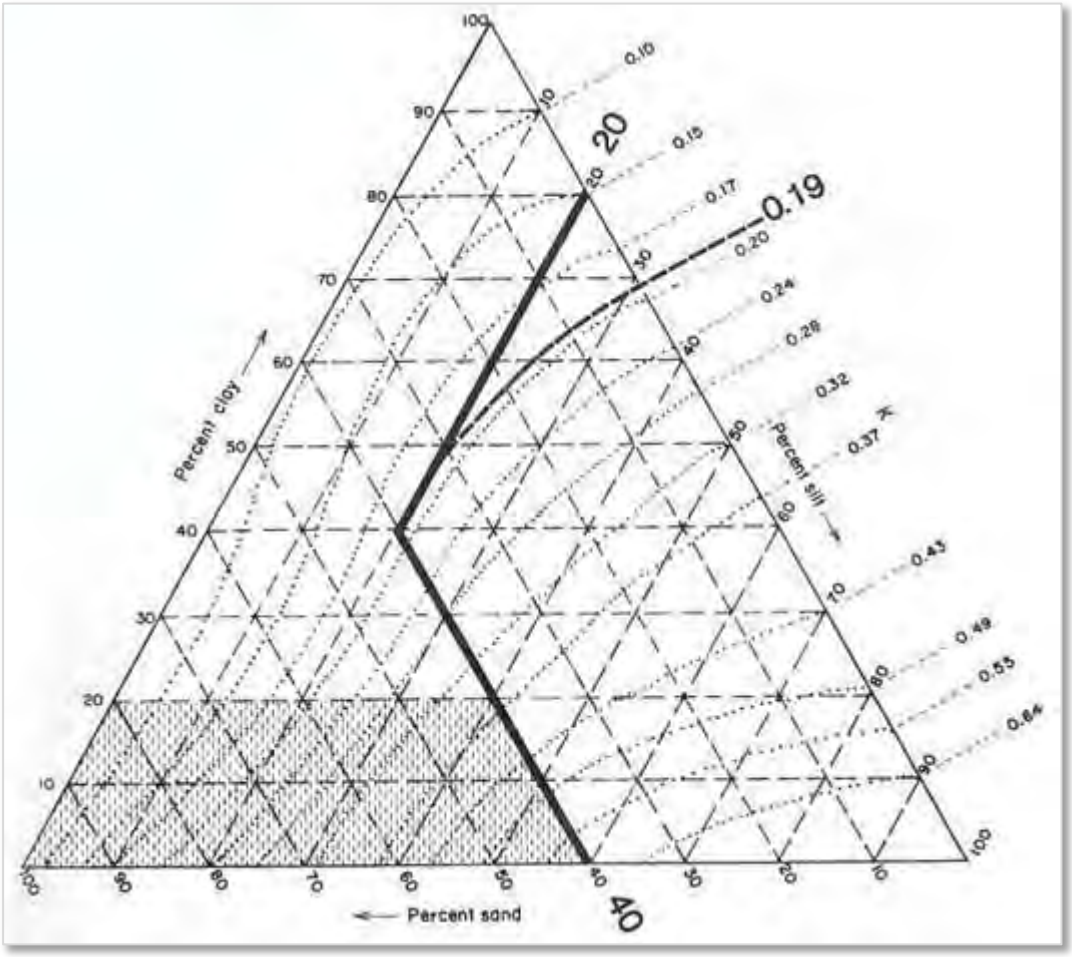
(https://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/constpermits/guidance/k_factor_map.pdf)

LS Factor Map

(https://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/constpermits/guidance/ls_factor_map.pdf)

Soil Erodibility (K) Factor Nomograph

The K factor can be determined by using the nomograph method, which requires that a particle size analysis (ASTM D-422)[1,2] be conducted to determine the percentages of sand, very fine sand, silt, and clay. Use the figure below to determine the appropriate K factor value.



The figure above is the Erickson triangular nomograph used by the USDA to determine the K factor for a soil based on its texture (percent silt plus very fine sand, percent sand, percent organic matter, soil structure, and permeability).

1 ASTM D-422 is the standard test method used for the quantitative determination of the distribution of particle sizes in soils.

2 Environmental Protection Agency, American Society for Testing and Materials (ASTM) Standards, <https://www.epa.gov/sites/default/files/2020-01/documents/sedc_2004-2005_append.pdf> [as of June 22, 2022]

Nomograph from Erickson 1977, as referenced in Goldman et. al., 1986.
Length-Slope (LS) Factor Table for Construction Sites

To determine a construction site's specific LS factor locate the intercept of the site's Sheet Flow Length (ft) and Average Watershed Slope (percent). Table from Renard et. al., 1997.

Sheet Flow Length (ft)	Average Watershed Slope (percent)									
	0.2	0.5	1.0	2.0	3.0	4.0	5.0	6.0	8.0	10.0
< 3	0.05	0.07	0.09	0.13	0.17	0.20	0.23	0.26	0.32	0.35
6	0.05	0.07	0.09	0.13	0.17	0.20	0.23	0.26	0.32	0.37
9	0.05	0.07	0.09	0.13	0.17	0.20	0.23	0.26	0.32	0.38
12	0.05	0.07	0.09	0.13	0.17	0.20	0.23	0.26	0.32	0.39
15	0.05	0.07	0.09	0.13	0.17	0.20	0.23	0.26	0.32	0.40
25	0.05	0.07	0.10	0.16	0.21	0.26	0.31	0.36	0.45	0.57
50	0.05	0.08	0.13	0.21	0.30	0.38	0.46	0.54	0.70	0.91
75	0.05	0.08	0.14	0.25	0.36	0.47	0.58	0.69	0.91	1.20
100	0.05	0.09	0.15	0.28	0.41	0.55	0.68	0.82	1.10	1.46
150	0.05	0.09	0.17	0.33	0.50	0.68	0.86	1.05	1.43	1.88
200	0.06	0.10	0.18	0.37	0.57	0.79	1.02	1.25	1.72	2.34
250	0.06	0.10	0.19	0.40	0.64	0.89	1.16	1.43	1.99	2.72
300	0.06	0.10	0.20	0.43	0.69	0.98	1.28	1.60	2.24	3.09
400	0.06	0.11	0.22	0.48	0.80	1.14	1.51	1.90	2.70	3.75
600	0.06	0.12	0.24	0.56	0.96	1.42	1.91	2.43	3.52	4.95
800	0.06	0.12	0.26	0.63	1.10	1.65	2.25	2.89	4.24	6.03
1000	0.06	0.13	0.27	0.69	1.23	1.86	2.55	3.30	4.91	7.02

Sheet Flow Length (ft)	Average Watershed Slope (percent)								
	12.0	14.0	16.0	20.0	25.0	30.0	40.0	50.0	60.0
< 3	0.36	0.38	0.39	0.41	0.45	0.48	0.53	0.58	0.63
6	0.41	0.45	0.49	0.56	0.64	0.72	0.85	0.97	1.07
9	0.45	0.51	0.56	0.67	0.80	0.91	1.13	1.31	1.47
12	0.47	0.55	0.62	0.76	0.93	1.08	1.37	1.62	1.84
15	0.49	0.58	0.67	0.84	1.04	1.24	1.59	1.91	2.19
25	0.71	0.85	0.98	1.24	1.56	1.86	2.41	2.91	3.36
50	1.15	1.40	1.64	2.10	2.67	3.22	4.24	5.16	5.97
75	1.54	1.87	2.21	2.86	3.67	4.44	5.89	7.20	8.37
100	1.88	2.31	2.73	3.57	4.59	5.58	7.44	9.13	10.63
150	2.51	3.09	3.68	4.85	6.30	7.70	10.35	12.75	14.89
200	3.07	3.81	4.56	6.04	7.88	9.67	13.07	16.16	18.92
250	3.60	4.48	5.37	7.16	9.38	11.55	15.67	19.42	22.78
300	4.09	5.11	6.15	8.23	10.81	13.35	18.17	22.57	26.51
400	5.01	6.30	7.60	10.24	13.53	16.77	22.95	28.60	33.67
600	6.67	8.45	10.26	13.94	18.57	23.14	31.89	39.95	47.18
800	8.17	10.40	12.69	17.35	23.24	29.07	40.29	50.63	59.93
1000	9.57	12.23	14.96	20.57	27.66	34.71	48.29	60.84	72.15

Step 2 – Receiving Water Risk Worksheet

Receiving water risk is based on whether a project drains to a water body or watershed that is sediment-sensitive. If the answer to either question below is "yes", the project is considered a **high** receiving water risk. If the answer to both questions below is "no", the project is considered a **low** receiving water risk.

1. Does the disturbed area discharge (either directly or indirectly) to a 303(d)-listed water body impaired by sediment? For help with identifying impaired water bodies, please refer to the 2020 – 2022 California Integrated Report (Clean Water Act Section 303(d) - 305(b) Report) (https://www.waterboards.ca.gov/water_issues/programs/water_quality_assessment/2020_2022_integrated_report.html).

OR

2. Does the disturbed area discharge (either directly or indirectly) to a water body with designated beneficial uses of COLD, SPAWN, and MIGRATORY? For help with identifying designated beneficial uses, please refer to the appropriate Regional Water Quality Control Board Basin Plan below.

Region 1 – North Coast Basin Plan
(https://www.waterboards.ca.gov/northcoast/water_issues/programs/basin_plan/)

Region 2 – San Francisco Bay Basin Plan
(https://www.waterboards.ca.gov/sanfranciscobay/basin_planning.html#2010basinplan)

Region 3 – Central Coast Basin Plan
(https://www.waterboards.ca.gov/centralcoast/publications_forms/publications/basin_plan/index.html)

Region 4 – Los Angeles Basin Plan
(https://www.waterboards.ca.gov/losangeles/water_issues/programs/basin_plan/)

Region 5 – Central Valley Basin Plan[3]
(https://www.waterboards.ca.gov/centralvalley/water_issues/basin_plans/index.html)

Region 6 – Lahontan Basin Plan
(https://www.waterboards.ca.gov/lahontan/water_issues/programs/basin_plan/index.html)

Region 7 – Colorado River Basin Plan
(https://www.waterboards.ca.gov/coloradoriver/water_issues/programs/basin_planning/)

Region 8 – Santa Ana Basin Plan
(https://www.waterboards.ca.gov/santaana/water_issues/programs/basin_plan/index.html)

3 The Central Valley Basin Plan lists the COLD beneficial use designation as part of the SPAWN and MIGRATORY beneficial uses. Waterbodies will be considered high-risk receiving waters if listed as SPAWN (COLD) and MIGRATORY (COLD).

Region 9 – San Diego Basin Plan
(https://www.waterboards.ca.gov/sandiego/water_issues/programs/basin_plan/index.html)

Sediment-Sensitive Watershed GIS Map Method

State Water Board staff has prepared a High-Risk Receiving Watershed Map tool (https://www.waterboards.ca.gov/water_issues/programs/stormwater/docs/constpermits/guidance/receivingwaterrisk.pdf) to assist dischargers with determining site-specific receiving water risk. Additionally, SMARTS is equipped with an auto-populate feature that can determine the receiving water risk based on the project latitude and longitude coordinates. Projects located in the watersheds highlighted in red are considered high-risk. Please note that the map option may not reflect the correct receiving watershed, lacking site-specific drainage information.

The discharger is responsible for identifying the appropriate receiving water. If the project does not discharge to the watershed as depicted on the High-Risk Receiving Watershed Map, please contact the appropriate Regional Water Quality Control Board.

Site-Specific Receiving Water Risk (High or Low) = **Low**

Step 3 – Combined Risk Level Matrix

The below matrix is used to determine the combined Risk Level of the project, factoring in both sediment risk and receiving water risk.

		Sediment Risk		
		Low	Medium	High
Receiving Water Risk	Low	Level 1	Level 2	
	High	Level 2		Level 3

Combined Risk Level (1, 2, or 3) = **2**

Rainfall Erosivity Factor Calculator for Small Construction Sites

EPA's stormwater regulations allow NPDES permitting authorities to waive NPDES permitting requirements for stormwater discharges from small construction sites if:

- the construction site disturbs less than five acres, and
- the rainfall erosivity factor ("R" in the revised universal soil loss equation, or RUSLE) value is less than five during the period of construction activity.

If your small construction project is located in an area where EPA is the permitting authority and your R factor is less than five, you qualify for a low erosivity waiver (LEW) from NPDES stormwater permitting. If your small construction project does not qualify for a waiver, then NPDES stormwater permit coverage is required. Follow the steps below to calculate your R-Factor.

LEW certifications are submitted through the NPDES eReporting Tool or "CGP-NeT". Several states that are authorized to implement the NPDES permitting program also accept LEWs. Check with your state NPDES permitting authority for more information.

- Submit your LEW through EPA's eReporting Tool
- List of states, Indian country, and territories where EPA is the permitting authority (pdf)
- Construction Rainfall Erosivity Waiver Fact Sheet
- Small Construction Waivers and Instructions (pdf)

The R-factor calculation can also be integrated directly into custom applications using the R-Factor web service.

For questions or comments, email EPA's CGP staff at cgp@epa.gov.

Select the estimated start and end dates of construction by clicking the boxes and using the dropdown calendar.

The period of construction activity begins at initial earth disturbance and ends with final stabilization.

Start Date: 07/31/2023 **End Date:** 07/30/2024

Locate your small construction project using the search box below or by clicking on the map.

Location: 34.00584,-118.21849 **Search**



Click the "Calculate R Factor" button below to calculate an R Factor for your small construction project.

Calculate R Factor

Facility Information

Start Date: 07/31/2023	**Latitude:** 34.0058
End Date: 07/30/2024	**Longitude:** -118.2185

Calculation Results

Rainfall erosivity factor (R Factor) = **44.94**

A rainfall erosivity factor of 5.0 or greater has been calculated for your site's period of construction.

You do NOT qualify for a waiver from NPDES permitting requirements and must seek Construction General Permit (CGP) coverage. If you are located in an area where EPA is the permitting authority (pdf), you must submit a Notice of Intent (NOI) through the NPDES eReporting Tool (NeT).Otherwise, you must seek coverage under your state's CGP.

Rainfall Erosivity Factor Calculator for Small Construction Sites

EPA's stormwater regulations allow NPDES permitting authorities to waive NPDES permitting requirements for stormwater discharges from small construction sites if:

- the construction site disturbs less than five acres, and
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Location: 34.00584,-118.21849 **Search**



Click the "Calculate R Factor" button below to calculate an R Factor for your small construction project.

Calculate R Factor

Facility Information

Start Date: 07/31/2024	**Latitude:** 34.0058
End Date: 07/30/2025	**Longitude:** -118.2185

Calculation Results

Rainfall erosivity factor (R Factor) = **44.94**

A rainfall erosivity factor of 5.0 or greater has been calculated for your site's period of construction.

You do NOT qualify for a waiver from NPDES permitting requirements and must seek Construction General Permit (CGP) coverage. If you are located in an area where EPA is the permitting authority (pdf), you must submit a Notice of Intent (NOI) through the NPDES eReporting Tool (NeT).Otherwise, you must seek coverage under your state's CGP.

Rainfall Erosivity Factor Calculator for Small Construction Sites

EPA's stormwater regulations allow NPDES permitting authorities to waive NPDES permitting requirements for stormwater discharges from small construction sites if:

- the construction site disturbs less than five acres, and
- the rainfall erosivity factor ("R" in the revised universal soil loss equation, or RUSLE) value is less than five during the period of construction activity.

If your small construction project is located in an area where EPA is the permitting authority and your R factor is less than five, you qualify for a low erosivity waiver (LEW) from NPDES stormwater permitting. If your small construction project does not qualify for a waiver, then NPDES stormwater permit coverage is required. Follow the steps below to calculate your R-Factor.

LEW certifications are submitted through the NPDES eReporting Tool or "CGP-NeT". Several states that are authorized to implement the NPDES permitting program also accept LEWs. Check with your state NPDES permitting authority for more information.

- Submit your LEW through EPA's eReporting Tool
- List of states, Indian country, and territories where EPA is the permitting authority (pdf)
- Construction Rainfall Erosivity Waiver Fact Sheet
- Small Construction Waivers and Instructions (pdf)

The R-factor calculation can also be integrated directly into custom applications using the R-Factor web service.

For questions or comments, email EPA's CGP staff at cgp@epa.gov.

Select the estimated start and end dates of construction by clicking the boxes and using the dropdown calendar.

The period of construction activity begins at initial earth disturbance and ends with final stabilization.

Start Date: 07/31/2025 **End Date:** 07/30/2026

Locate your small construction project using the search box below or by clicking on the map.

Location: 34.00584,-118.21849 **Search**



Click the "Calculate R Factor" button below to calculate an R Factor for your small construction project.

Calculate R Factor

Facility Information

Start Date: 07/31/2025	**Latitude:** 34.0058
End Date: 07/30/2026	**Longitude:** -118.2185

Calculation Results

Rainfall erosivity factor (R Factor) = **44.94**

A rainfall erosivity factor of 5.0 or greater has been calculated for your site's period of construction.

You do NOT qualify for a waiver from NPDES permitting requirements and must seek Construction General Permit (CGP) coverage. If you are located in an area where EPA is the permitting authority (pdf), you must submit a Notice of Intent (NOI) through the NPDES eReporting Tool (NeT).Otherwise, you must seek coverage under your state's CGP.

State Water Resources Control Board

NOTICE OF INTENT

GENERAL PERMIT TO DISCHARGE STORM WATER
ASSOCIATED WITH CONSTRUCTION ACTIVITY
(WQ ORDER No. 2009-0009-DWQ)

WDID: 4 19C401525 **Risk Level:** Level2

Property Owner Information

Type: Private Business

Name:	GIC Vernon LLC	Contact Name:	Vincent Martino
Address:	3333 michelson Drive	Title:	Construction Project Manager
Address 2:	suite 1050	Phone Number:	805-598-2938
City/State/Zip:	Irine CA 92612	Email Address:	Vincent.Martino@goodman.com

Contractor/Developer Information

Name:	GIC Vernon LLC	Contact Name:	Vincent Martino
Address:	3333 michelson Drive	Title:	Construction Project Manager
Address 2:	suite 1050	Phone Number:	805-598-2938
City/State/Zip:	Irine CA 92612	Email Address:	Vincent.Martino@goodman.com

Construction Site Information

Contact Name:	Vincent Martino	Title:	Construction Project Manager
Site Name:	GIC Vernon LLC		
Address:	3049 E Vernon Ave		
City/State/Zip:	Vernon CA 90058	Site Phone #:	805-598-2938
County:	Los Angeles	Email Address:	Vincent.Martino@goodman.com
Latitude:	34.00584	Longitude:	-118.21849
Construction Start:	July 31, 2023		
Total Size of Construction Area:	29.1 Acres	Complete Grading:	
Total Area to be Disturbed:	26.5 Acres	Final Stabilization:	July 31, 2026

Risk Values

R: 134.82 K: 0.32 LS: 0.41 Beneficial Uses/303(d): No

Type of Construction: *Industrial

Receiving Water:

Qualified SWPPP Developer: Tianyu Crocker Certification #: 27352

RWQCB Jurisdiction: Region 4 - Los Angeles

Phone: 213-576-6600 Email: r4_stormwater@waterboards.ca.gov

Certification

Name: Vincent Martino Date: August 11, 2023

Title: Project Manager

State Water Resources Control Board

NOTICE OF INTENT

GENERAL PERMIT TO DISCHARGE STORM WATER
ASSOCIATED WITH CONSTRUCTION ACTIVITY
(WQ ORDER No. 2009-0009-DWQ)

WDID: 4 19C401525

Post Construction Information

Is the project located within a permitted Phase I or Phase II Municipal Separate Storm Sewer System?: _____

DRAFT

LOW IMPACT DEVELOPMENT ORDINANCE

AMENDING SECTION(S) OF CHAPTER 21, SEWERS AND STORM DRAINS

Purpose and Intent: TO EXPAND THE APPLICABILITY OF THE EXISTING DEVELOPMENT PLANNING PROGRAM REQUIREMENTS BY IMPOSING STORMWATER LOW IMPACT DEVELOPMENT (LID) STRATEGIES ON PROJECTS THAT REQUIRE BUILDING, GRADING AND ENCROACHMENT PERMITS

WHEREAS, the City of Vernon is authorized by Article XI, Section 5 and Section 7 of the State Constitution to exercise the police power of the State by adopting regulations to promote public health, public safety and general prosperity; and

WHEREAS, the Clean Water Act provides the statutory basis for the NPDES permit program and the basic structure for regulating the discharge of pollutants from point sources to waters of the United States under the National Pollutant Discharge Elimination System (NPDES) Program; and

WHEREAS, the State Water Resources Control Board is authorized by the United States Environmental Protection Agency to enforce the NPDES Program; and

WHEREAS, the City of Vernon is a permittee under the California Regional Water Quality Control Board, Los Angeles Region Order No. R4-2012-0175, issued on November 08, 2012 which establishes Waste Discharge Requirements for Municipal Separate Storm Sewer Systems (MS4) Discharges within the Coastal Watersheds of Los Angeles County, Except those Discharges Originating from the City of Long Beach MS4 (hereinafter referred to as the MS4 Permit); and

WHEREAS, the MS4 Permit contains compliance requirements for municipalities to establish a LID Ordinance in order to participate in a Watershed Management Program and/or Enhanced Watershed Management Program; and

WHEREAS, the California Regional Water Quality Control Board, Los Angeles Region has adopted Total Maximum Daily Loads (TMDLs), which are maximum amount of pollutants that a receiving water can accept and still meet water quality standards, that must be achieved through effective LID implementation; and

WHEREAS, the City of Vernon has the authority under the California Water Code to adopt and enforce ordinances imposing conditions, restrictions and limitations with respect to any activity that might degrade receiving waters; and

WHEREAS, the City of Vernon is committed to a stormwater management program that protects water quality and water supply by employing watershed-based approaches that balance environmental, social and economic considerations; and

WHEREAS, urbanization has led to increased impervious surface areas resulting in increased water runoff and less percolation to groundwater aquifers causing the transport of pollutants to downstream receiving waters; and

WHEREAS, it is the intent of the City of Vernon to expand the applicability of the existing Development Planning Program requirements by providing stormwater LID strategies for Development and Redevelopment projects as defined under “Applicability”; and

WHEREAS, Chapter 21 of the Code of the City of Vernon pertains to sewers and storm drains; and

WHEREAS, by memorandum dated June 18, 2013, the Director of Community Services & Water has recommended that Section ____ of Chapter 21, Sewers and Storm Drains, of the Code of the City of Vernon be amended to comply with the new requirements of the MS4 Permit; and

WHEREAS, it is the intent of this Ordinance to amend Section _____ of Chapter 21 of the Code of the City of Vernon.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF VERNON HEREBY ORDAINS AS FOLLOWS:

SECTION 1: Recitals. The City Council of the City of Vernon hereby finds and determines that the recitals contained hereinabove are true and correct.

SECTION 2: Exempt from CEQA. The City Council of the City of Vernon finds that this action is exempt under the California Environmental quality Act (CEQA) in accordance with:

a) Section 15308, actions by regulatory agencies for the protection of the environment; and

b) Section 15061(b)(3), the general rule that CEQA only applies to projects that may have an effect on the environment.

SECTION 3: Code Amendments. The City Council of the City of Vernon hereby amends Section _____ of Chapter 21, Sewers and Storm Drains of the Code of the City of Vernon, as set forth in Exhibit "A" which is attached hereto and made a part hereof by reference.

SECTION 4: Severability. The City Council declares that should any portion of this Ordinance be rendered or declared invalid by any final court action in a court of competent jurisdiction or by reason of any preemptive legislation, the remaining portions of this Ordinance shall remain in full force and effect.

SECTION 5: Publication. The Interim City Clerk, or Deputy City Clerk, shall attest and certify to the adoption of this Ordinance and shall cause this Ordinance and such certification to be entered in the Book of Ordinances of the City Council. Pursuant to Section 36933 of the Government Code, within 15 days of the adoption of this Ordinance, the Interim City Clerk, or Deputy City Clerk, shall cause this Ordinance to be published or posted with the names of those City Council members voting for and against the Ordinance as required by law.

SECTION 6. This Ordinance shall go into effect and be in full force and effect at 12:01 a.m. on the thirtieth (30^{th}) day after its passage.

APPROVED AND ADOPTED this _____ day of _____, 2013.

_____

Name: _____

Title: Mayor / Mayor Pro-Tem

ATTEST:

_____

Interim City Clerk / Deputy City Clerk

APPROVED AS TO FORM:

_____

By: Scott Porter, Deputy City Attorney
Nicholas G. Rodriguez

STATE OF CALIFORNIA)

) ss

COUNTY OF LOS ANGELES)

I, _____, Interim City Clerk / Deputy City Clerk of the City of Vernon, hereby certify that Ordinance No. [ORDINANCE NO] was introduced at a regular meeting of the City Council of the City of Vernon held on the [DAY] of [MONTH] 2013, and thereafter was adopted by the City Council of the City of Vernon at a regular meeting held on the [DAY] of [MONTH], 2013, and that the same was adopted by the following roll call vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

_____

INTERIM CITY CLERK / DEPUTY CITY CLERK

Exhibit "A" to LID Ordinance

Chapter 21

Sewers and Storm Drains

Section _____ of Chapter 21, Sewers and Storm Drains shall be amended to add the following definitions in alphabetical order, and to renumber all existing definitions accordingly in alphabetical order. If the definition of any term contained in this chapter conflicts with the definition of the same term in MS4 Permit , then the definition contained in MS4 Permit shall govern:

"Automotive Service Facility" means a facility that is categorized in any one of the following Standard Industrial Classification (SIC) and North American Industry Classification System (NAICS) codes 5013, 5014, 5511, 5541, 7532-7534, and 7536-7539. For inspection purposes, Permittees need not inspect these facilities provided that they have no outside activities or materials that may be exposed to stormwater (Modified from MS4 Permit).

"Basin Plan" means the Water Quality Control Plan, Los Angeles Region, Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties, adopted by the Regional Water Board on June 13, 1994 and subsequent amendments (MS4 Permit).

"Best Management Practice (BMP)" means practices or physical devices or systems designed to prevent or reduce pollutant loading from stormwater or non-stormwater discharges to receiving waters, or designed to reduce the volume of stormwater or non-stormwater discharged to the receiving water (MS4 Permit).

"Biofiltration" means a LID BMP that reduces stormwater pollutant discharges by intercepting rainfall on vegetative canopy, and through incidental infiltration and/or evapotranspiration, and filtration. Incidental infiltration is an important factor in achieving the required pollutant load reduction. Therefore, the term "biofiltration" as used in this Ordinance is defined to include only systems designed to facilitate incidental infiltration or achieve the equivalent pollutant reduction as biofiltration BMPs with an underdrain (subject to approval by the Regional Board's Executive Officer). Biofiltration BMPs include bioretention systems with an underdrain and bioswales (Modified from MS4 Permit).

"Bioretention" means a LID BMP that reduces stormwater runoff by intercepting rainfall on vegetative canopy, and through evapotranspiration and infiltration. The bioretention system typically includes a minimum 2-foot top layer of a specified soil and compost mixture underlain by a gravel-filled temporary storage pit dug into the in-situ soil. As defined in this Ordinance, a bioretention BMP may be designed with an overflow drain, but may not include an underdrain. When a bioretention BMP is designed or constructed with an underdrain it is regulated by this Order as biofiltration (MS4 Permit).

"Bioswale" means a LID BMP consisting of a shallow channel lined with grass or other dense, low-growing vegetation. Bioswales are designed to collect stormwater runoff and to achieve a uniform sheet flow through the dense vegetation for a period of several minutes (MS4 Permit).

"City" means the City of Vernon, California.

"Clean Water Act (CWA)" means the Federal Water Pollution Control Act enacted in 1972, by Public Law 92-500, and amended by the Water Quality Act of 1987. The Clean Water Act prohibits the discharge of pollutants to the storm sewers and/or Waters of the United States unless the discharge is in accordance with an NPDES permit.

"Commercial Development" means any development on private land that is not industrial or residential. The category includes, but is not limited to: hospitals, laboratories and other medical facilities, educational institutions, recreational facilities, plant nurseries, car wash facilities; mini-malls and other business complexes, shopping malls, hotels, office buildings, public warehouses and other light industrial complexes (Modified from MS4 Permit).

"Commercial Malls" means any development on private land comprised of one or more buildings forming a complex of stores which sells various merchandise, with interconnecting walkways enabling visitors to easily walk from store to store, along with parking area(s). A commercial mall includes, but is not limited to: mini-malls, strip malls, other retail complexes, and enclosed shopping malls or shopping centers (MS4 Permit).

"Construction Activity" means any construction or demolition activity, clearing, grading, grubbing, or excavation or any other activity that result in land disturbance. Construction does not include emergency construction activities required to immediately protect public health and safety or routine maintenance activities required to maintain the integrity of structures by performing minor repair and restoration work, maintain the original line and grade, hydraulic capacity, or original purposes of the facility. See "Routine Maintenance" definition for further explanation. Where clearing, grading or excavating of underlying soil takes place during a repaving operation, State General Construction Permit coverage by the State of California General Permit for Storm Water Discharges Associated with Industrial Activities or for Stormwater Discharges Associated with Construction Activities is required if more than one acre is disturbed or the activities are part of a larger plan (MS4 Permit).

"Control" means to minimize, reduce or eliminate by technological, legal, contractual, or other means, the discharge of pollutants from an activity or activities (MS4 Permit).

"Development" means construction, rehabilitation, redevelopment or reconstruction of any public or private residential project (whether single-family, multi-unit or planned unit development); industrial, commercial, retail, and other non-residential projects, including public agency projects; or mass grading for future construction. It does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of facility, nor does it include emergency construction activities required to immediately protect public health and safety (MS4 Permit).

"Directly Adjacent" means situated within 200 feet of the contiguous zone required for the continued maintenance, function, and structural stability of the environmentally sensitive area (MS4 Permit).

"Discharge" means any release, spill, leak, pump, flow, escape, dumping, or disposal of any liquid, semi-solid, or solid substance (Modified from MS4 Permit).

"Disturbed Area" means an area that is altered as a result of clearing, grading, and/or excavation (MS4 Permit).

"Executive Officer" means the Executive Officer of the California Regional Water Quality Control Board, Los Angeles Region.

"Flow-through treatment BMPs" means a modular, vault type "high flow biotreatment" devices contained within an impervious vault with an underdrain or designed with an impervious liner and an underdrain (MS4 Permit).

"Full Capture System" means any single device or series of devices, certified by the Executive Officer, that traps all particles retained by a 5 mm mesh screen and has a design treatment capacity of not less than the peak flow rate Q resulting from a one-year, one-hour storm in the sub-drainage area (MS4 Permit).

"General Construction Activities Storm Water Permit (GCASP)" means the general NPDES permit adopted by the State Water Resources Control Board which authorizes the discharge of stormwater from construction activities under certain conditions (Modified from MS4 Permit).

"General Industrial Activities Storm Water Permit (GIASP)" means the general NPDES permit adopted by the State Board which authorizes the discharge of stormwater from certain industrial activities under certain conditions (MS4 Permit).

"Green Roof" means a LID BMP using planter boxes and vegetation to intercept rainfall on the roof surface. Rainfall is intercepted by vegetation leaves and through evapotranspiration. Green roofs may be designed as either a bioretention BMP or as a biofiltration BMP. To receive credit as a

bioretention BMP, the green roof system planting medium shall be of sufficient depth to provide capacity within the pore space volume to contain the design storm depth and may not be designed or constructed with an underdrain (MS4 Permit).

"Hillside" means a property located in an area with known erosive soil conditions, where the development contemplates grading on any natural slope that is 25% or greater and where grading contemplates cut or fill slopes (MS4 Permit).

"Industrial/Commercial Facility" means any facility involved and/or used in the production, manufacture, storage, transportation, distribution, exchange or sale of goods and/or commodities, and any facility involved and/or used in providing professional and non-professional services. This category of facilities includes, but is not limited to, any facility defined by either the Standard Industrial Classifications (SIC) or the North American Industry Classification System (NAICS). Facility ownership (federal, state, municipal, private) and profit motive of the facility are not factors in this definition (MS4 Permit).

"Industrial Park" means land development that is set aside for industrial/commercial facility development. Industrial parks are usually located close to transport facilities, especially where more than one transport modalities coincide: highways, railroads, airports, and navigable rivers. It includes office parks, which have offices and light industry (Modified from MS4 Permit).

"Infiltration BMP" means a LID BMP that reduces stormwater runoff by capturing and infiltrating the runoff into in-situ soils or amended onsite soils. Examples of infiltration BMPs include infiltration basins, dry wells, and pervious pavement (MS4 Permit).

"Low Impact Development (LID)" consists of building and landscape features designed to retain or filter stormwater runoff (MS4 Permit).

"Municipal Separate Storm Sewer System (MS4)" means a conveyance or system of conveyances (including roads with drainage systems, municipal streets, catch basins, curbs, gutters, ditches, manmade channels, or storm drains):

(i) Owned or operated by a State, city, town, borough, county, parish, district, association, or other public body (created by or pursuant to State law) having jurisdiction over disposal of sewage, industrial wastes, stormwater, or other wastes, including special districts under State law such as a sewer district, flood control district or drainage district, or similar entity, or an Indian tribe or an authorized Indian tribal organization, or a designated and approved management agency under section 208 of the CWA that discharges to waters of the United States;

(ii) Designed or used for collecting or conveying stormwater;

(iii) Which is not a combined sewer; and

(iv) Which is not part of a Publicly Owned Treatment Works (POTW) as defined at 40 CFR Section 122.2.

(40 CFR Section 122.26(b)(8)) (MS4 Permit)

"**National Pollutant Discharge Elimination System (NPDES)"** means the national program for issuing, modifying, revoking and reissuing, terminating, monitoring and enforcing permits, and imposing and enforcing pretreatment requirements, under CWA Section 307, 402, 318, and 405. The term includes an "approved program" (MS4 Permit).

"Natural Drainage System" means a drainage system that has not been improved (e.g., channelized or armored). The clearing or dredging of a natural drainage system does not cause the system to be classified as an improved drainage system (MS4 Permit).

"New Development" means land disturbing activities; structural development, including construction or installation of a building or structure, creation of impervious surfaces; and land subdivision (MS4 Permit).

"Non-Stormwater Discharge" means any discharge to a municipal storm drain system that is not composed entirely of stormwater (MS4 Permit).

"Outfall" means a point source as defined by 40 CFR 122.2 at the point where a municipal separate storm sewer discharges to waters of the United States and does not include open conveyances connecting two municipal separate storm sewers, or pipes, tunnels or other conveyances with connect segments of the same stream or other waters of the United Sates and are used to convey waters of the United States. (40 CFR Section 122.26(b)(9)) (MS4 Permit).

"Parking Lot" means land area or facility for the parking or storage of motor vehicles used for businesses, commerce, industry, or personal use, with a lot size of 5,000 square feet or more of surface area, or with 25 or more parking spaces (MS4 Permit).

"Planning Priority Projects" means development projects subject to Permittee conditioning and approval for the design and implementation of post-construction controls to mitigate stormwater pollution, prior to completion of the project(s) (Modified from MS4 Permit).

"Pollutant" means any "pollutant" defined in Section 502(6) of the Federal Clean Water Act or incorporated into the California Water Code Section 13373 (MS4 Permit).

"Project" means all development, redevelopment, and land disturbing activities. The term is not limited to "Project" as defined under CEQA (Pub. Resources Code Section 21065) (MS4 Permit).

"Rainfall Harvest and Use" means a LID BMP system designed to capture runoff, typically from a roof but can also include runoff capture from elsewhere within the site, and to provide for temporary storage until the harvested water can be used for irrigation or non-potable uses. The harvested water may also be used for potable water uses if the system includes disinfection treatment and is approved for such use by the local building department (MS4 Permit).

"Receiving Water" means "water of the United States" into which waste and/or pollutants are or may be discharged (MS4 Permit).

"Redevelopment" means land-disturbing activity that results in the creation, addition, or replacement of 5,000 square feet or more of impervious surface area on an already developed site. Redevelopment includes, but is not limited to: the expansion of a building footprint; addition or replacement of a structure; replacement of impervious surface area that is not part of routine maintenance activity; and land disturbing activity related to structural or impervious surfaces. It does not include routine maintenance to maintain original line and grade, hydraulic capacity, or original purpose of facility, nor does it include emergency construction activities required to immediately protect public health and safety (MS4 Permit).

"Regional Board" means the California Regional Water Quality Control Board, Los Angeles Region.

"Restaurant" means a facility that sells prepared foods and drinks for consumption, including stationary lunch counters and refreshment stands selling prepared foods and drinks for immediate consumption (SIC Code 5812) (MS4 Permit).

"Retail Gasoline Outlet" means any facility engaged in selling gasoline and lubricating oils (MS4 Permit).

"Routine Maintenance" includes, but is not limited to projects conducted to:

1. Maintain the original line and grade, hydraulic capacity, or original purpose of the facility.
2. Perform as needed restoration work to preserve the original design grade, integrity and hydraulic capacity of flood control facilities.
3. Includes road shoulder work, regrading dirt or gravel roadways and shoulders and performing ditch cleanouts.

4. Update existing lines* and facilities to comply with applicable codes, standards, and regulations regardless if such projects result in increased capacity.
5. Repair leaks

Routine maintenance does not include construction of new** lines or facilities resulting from compliance with applicable codes, standards and regulations.

* Update existing lines includes replacing existing lines with new materials or pipes.

** New lines are those that are not associated with existing facilities and are not part of a project to update or replace existing lines (MS4 Permit).

"Significant Ecological Areas (SEAs)" means an area that is determined to possess an example of biotic resources that cumulatively represent biological diversity, for the purposes of protecting biotic diversity, as part of the Los Angeles County General Plan. Areas are designated as SEAs, if they possess one or more of the following criteria:

1. The habitat of rare, endangered, and threatened plant and animal species.
2. Biotic communities, vegetative associations, and habitat of plant and animal species that are either one of a kind, or are restricted in distribution on a regional basis.
3. Biotic communities, vegetative associations, and habitat of plant and animal species that are either one of a kind or are restricted in distribution in Los Angeles County.
4. Habitat that at some point in the life cycle of a species or group of species, serves as a concentrated breeding, feeding, resting, migrating grounds and is limited in availability either regionally or within Los Angeles County.
5. Biotic resources that are of scientific interest because they are either an extreme in physical/geographical limitations, or represent an unusual variation in a population or community.
6. Areas important as game species habitat or as fisheries.
7. Areas that would provide for the preservation of relatively undisturbed examples of natural biotic communities in Los Angeles County.
8. Special areas (MS4 Permit).

"Site" means land or water area where any "facility or activity" is physically located or conducted, including adjacent land used in connection with the facility or activity (MS4 Permit).

"Storm Drain System" means any facility or any parts of the facility, including streets, gutters, conduits, natural or artificial drains, channels and watercourse that are used for the purpose of collecting, storing, transporting or disposing of stormwater and are located within the City.

"Storm Water or Stormwater" means runoff, snow melt runoff, and surface runoff and drainage related to precipitation events (pursuant to 40 CFR Section 122.26(b)(13); 55 Fed. Reg. 47990, 47995 (Nov. 16, 1990)) (MS4 Permit).

"Urban Runoff" means surface water flow produced by storm and non-storm events. Non-storm events include flow from residential, commercial or industrial activities involving the use of potable and non-potable water.

SECTION _____ OF CHAPTER 21, SEWERS AND STORM DRAINS
LOW IMPACT DEVELOPMENT (LID) MEASURES FOR NEW DEVELOPMENT AND/OR REDEVELOPMENT PLANNING AND CONSTRUCTION ACTIVITIES.

A. Objective. The provisions of this Section establish requirements for construction activities and facility operations of Development and Redevelopment projects to comply with the current MS4 Permit, lessen the water quality impacts of development and redevelopment by using smart growth practices, and integrate LID practices and standards for stormwater pollution mitigation through means of infiltration, evapotranspiration, biofiltration, and rainfall harvest and use. LID shall be inclusive of new development and/or redevelopment requirements.

B. Scope. This Section contains requirements for stormwater pollution control measures in Development and Redevelopment projects and authorizes the City of Vernon to further define and adopt stormwater pollution control measures, and to develop LID principles and requirements, including but not limited to the objectives and specifications for integration of LID strategies, grant waivers from the LID requirements, and collect funds for projects that are granted waivers. Except as otherwise provided herein, the City shall administer, implement, develop guidelines and enforce the provisions of this Section.

C. Applicability. Development and Redevelopment projects, termed "Planning Priority Projects," subject to design and implementation of post-construction controls to mitigate potential stormwater pollution, prior to completion of the project(s), are:

(1) All development projects equal to 1 acre or greater of disturbed area that adds more than 10,000 square feet of impervious surface area.
(2) Industrial parks 10,000 square feet or more of surface area.
(3) Commercial malls 10,000 square feet or more of surface area.
(4) Retail gasoline outlets with 5,000 square feet or more of surface area.
(5) Restaurants (Standard Industrial Classification (SIC) of 5812) with 5,000 square feet or more of surface area.
(6) Parking lots with 5,000 square feet or more of impervious surface area, or with 25 or more parking spaces.
(7) Streets and roads construction of 10,000 square feet or more of impervious surface area. Street and road construction applies to standalone streets, roads, highways, and freeway projects, and also applies to streets within larger projects.
(8) Automotive service facilities (Standard Industrial Classification (SIC) of 5013, 5014, 5511, 5541, 7532-7534 and 7536-7539) 5,000 square feet or more of surface area.
(9) Projects located in or directly adjacent to, or discharging directly to an Environmentally Sensitive Area (ESA), where the development will:
    a. Discharge stormwater runoff that is likely to impact a sensitive biological species or habitat; and
    b. Create 2,500 square feet or more of impervious surface area
(10) Single-family hillside homes.
(11) Redevelopment Projects
    a. Land disturbing activity that results in the creation or addition or replacement of 5,000 square feet or more of impervious surface area on an already developed site on Planning Priority Project categories.
    b. Where Redevelopment results in an alteration to more than fifty percent of impervious surfaces of a previously existing development, and the existing development was not subject to post-construction stormwater quality control requirements, the entire development site must be mitigated. If the development site was subject to post-construction stormwater quality control requirements, then only the area of alteration must be mitigated.
    c. Where Redevelopment results in an alteration of less than fifty percent of impervious surfaces of a previously existing development, and the existing development was not subject to post-construction stormwater quality control requirements, only the alteration must be mitigated, and not the entire development.
    d. Redevelopment does not include routine maintenance activities that are conducted to maintain original line and grade, hydraulic capacity, original purpose of facility or emergency redevelopment activity required to protect public health and safety. Impervious surface replacement, such as the reconstruction of parking lots and

roadways which does not disturb additional area and maintains the original grade and alignment, is considered a routine maintenance activity. Redevelopment does not include the repaving of existing roads to maintain original line and grade.

e. Existing single-family dwelling and accessory structures are exempt from the Redevelopment requirements unless such projects create, add, or replace 10,000 square feet of impervious surface area.

D. Effective Date. The Planning and Land Development requirements contained in Section E shall become effective thirty (30) days from the adoption of the Ordinance. This includes Planning Priority Projects that are discretionary permit projects or project phases that have not been deemed complete for processing, or discretionary permit projects without vesting tentative maps that have not requested and received an extension of previously granted approvals within 90 days of adoption of the Ordinance. Projects that have been deemed complete within 90 days of adoption of the Ordinance are not subject to the requirements of this Chapter. Ministerial projects for which a grading plan was submitted prior to February 6, 2013 and approved by the City of Vernon Community Services & Water Department shall not be subject to the requirements contained in Section E.

E. Stormwater Pollution Control Requirements. The Site for every Planning Priority Project shall be designed to control pollutants, pollutant loads, and runoff volume to the maximum extent feasible by minimizing impervious surface area and controlling runoff from impervious surfaces through infiltration, evapotranspiration, bioretention and/or rainfall harvest and use.

(1) A new single-family hillside home development shall include mitigation measures to:
   a. Conserve natural areas;
   b. Protect slopes and channels;
   c. Provide storm drain system stenciling and signage;
   d. Divert roof runoff to vegetated areas before discharge unless the diversion would result in slope instability; and
   e. Direct surface flow to vegetated areas before discharge, unless the diversion would result in slope instability.

(2) Street and road construction of 10,000 square feet or more of impervious surface shall follow the City of Vernon's Green Streets Policy to the maximum extent practicable.

(3) The remainder of Planning Priority Projects shall prepare an LID Plan to comply with the following:
   a. Retain stormwater runoff onsite for the Stormwater Quality Design Volume (SWQDv) defined as the runoff from:
      i. The 85th percentile 24-hour runoff event as determined from the Los Angeles County 85th percentile precipitation isohyetal map; or
      ii. The volume of runoff produced from a 0.75 inch, 24-hour rain event, whichever is greater.
   b. Minimize hydromodification impacts to natural drainage systems as defined in the MS4 Permit
   c. To demonstrate technical infeasibility, the project applicant must demonstrate that the project cannot reliably retain 100 percent of the SWQDv on-site, even with the maximum application of green roofs and rainwater harvest and use, and that compliance with the applicable post-construction requirements would be technically infeasible by submitting a site-specific hydrologic and/or design analysis conducted and endorsed by a registered professional engineer, geologist, architect, and/or landscape architect. Technical infeasibility may result from conditions including the following:

i. The infiltration rate of saturated in-situ soils is less than 0.3 inch per hour and it is not technically feasible to amend the in-situ soils to attain an infiltration rate necessary to achieve reliable performance of infiltration or bioretention BMPs in retaining the SWQDv onsite.
ii. Locations where seasonal high groundwater is within five to ten feet of surface grade;
iii. Locations within 100 feet of a groundwater well used for drinking water;
iv. Brownfield development sites or other locations where pollutant mobilization is a documented concern;
v. Locations with potential geotechnical hazards;
vi. Smart growth and infill or redevelopment locations where the density and/ or nature of the project would create significant difficulty for compliance with the onsite volume retention requirement.

d. If partial or complete onsite retention is technically infeasible, the project Site may biofiltrate 1.5 times the portion of the remaining SWQDv that is not reliably retained onsite. Biofiltration BMPs must adhere to the design specifications provided in the MS4 Permit.
   i. Additional alternative compliance options such as offsite infiltration and groundwater replenishment projects may be available to the project Site. The project Site should contact the City of Vernon to determine eligibility.

e. The remaining SWQDv that cannot be retained or biofiltered onsite must be treated onsite to reduce pollutant loading. BMPs must be selected and designed to meet pollutant-specific benchmarks as required per the MS4 Permit. Flow-through BMPs may be used to treat the remaining SWQDv and must be sized based on a rainfall intensity of:
   i. 0.2 inches per hour, or
   ii. The one year, one-hour rainfall intensity as determined from the most recent Los Angeles County isohyetal map, whichever is greater.

(4) Yearly monitoring sample results for Infiltration system projects shall be provided to the City to ensure infiltration system is not causing any type of contamination on the project site.
   a. Monitoring sample results will be required through the lifetime of the infiltration system; and
   b. Should contamination occur, the property owner will be required to remediate the site at its own expense; and
   c. Additional stormwater LID strategies will be implemented on the project site.

Appendix C: SWPPP Amendment QSD Certifications

SWPPP Amendment No. _____

Project Name: _____

Project Number: _____

Qualified SWPPP Developer's Certification of the

Stormwater Pollution Prevention Plan Amendment

"This Stormwater Pollution Prevention Plan and its appendices were prepared under my direction to meet the requirements of the 2022 CGP (SWRCB Order No. 2022-0057-DWQ). I certify that I am a Qualified SWPPP Developer in good standing as of the date signed below."

QSD's Signature	Date
QSD Name	QSD Certificate Number
Title and Affiliation	Telephone
Address	Email

Appendix D: Submitted Changes of Information

Log of Updated PRDs

The 2022 CGP allows for the reduction or increase of the total acreage when a portion of the project is complete and/or conditions for termination of coverage have been met; when ownership of a portion of the project is purchased by a different entity; or when new acreage is added to the project.

A Change of Information (COI) shall be filed electronically within the timeframe shown in the table below. The SWPPP shall be modified appropriately, with revisions and amendments recorded in the SWPPP Amendment Log at the front of the SWPPP. COIs submitted electronically via SMARTS can be found in this Appendix.

Reason for Filing COI	Timeline for Filing COI
Reduction or increase in total disturbed area	Within 30 days of the reduction or increase
Updating site specific BMPs	Within 14 days of design change
Change construction start or end date	At least 14 days prior to the date to be changed
Post-construction plans updated or approved by the municipal stormwater permittee	Within 14 days of approval

---

This appendix includes all of the following updated PRDs (check all that apply):

☐ Change of Information;

☐ Revised Site Map;

☐ Revised Risk Assessment;

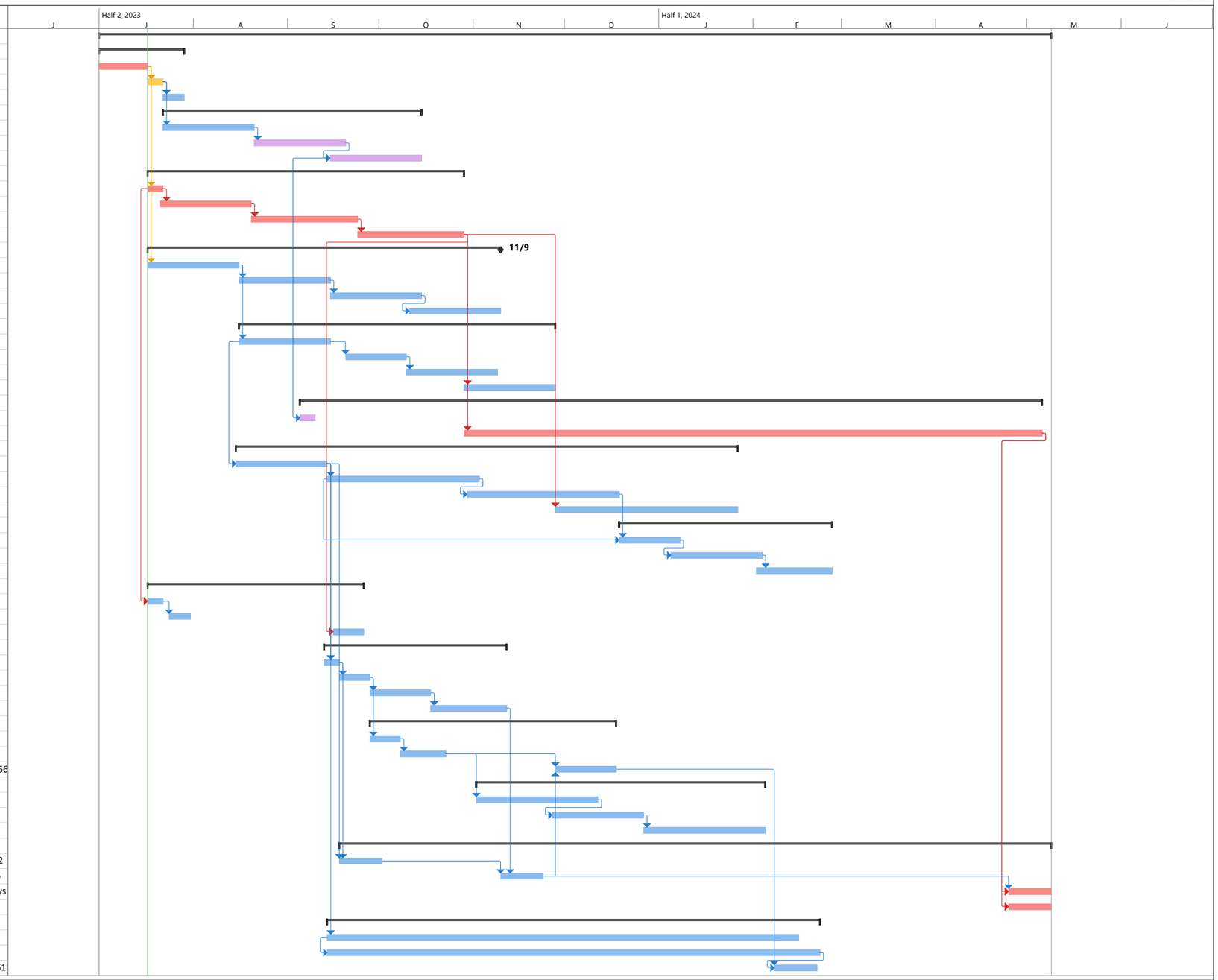
☐ New landowner's information (name, address, phone number, email address); and

☐ New signed certification statement.

Signature of [Authorized Representative of] Legally Responsible Person or Duly Authorized Representative	Date
Name of [Authorized Representative of] Legally Responsible Person or Duly Authorized Representative	Telephone Number

Appendix E:Construction Schedule

ID	Task Mode	Task Name	Duration	Start	Finish	Predecessors
1		**Framer John's demo**	**313 days**	**Sat 7/1/23**	**Wed 5/8/24**	
2		**Hog pen**	**28 days**	**Sat 7/1/23**	**Fri 7/28/23**	
3		Disconnect power to SubStation #1	16 days	Sat 7/1/23	Sun 7/16/23	
4		Demo Superstructure	5 days	Mon 7/17/23	Fri 7/21/23	3
5		Demo slab/UG/Footings	7 days	Sat 7/22/23	Fri 7/28/23	4
6		**Main Building Annex**	**85 days**	**Sat 7/22/23**	**Sat 10/14/23**	
7		Salvage/Gutout	30 days	Sat 7/22/23	Sun 8/20/23	4
8		Demo Superstructure	30 days	Mon 8/21/23	Tue 9/19/23	7
9		Demo slab/UG/Footings	30 days	Fri 9/15/23	Sat 10/14/23	8FS-5 days
10		**Bacon Building**	**104 days**	**Mon 7/17/23**	**Sat 10/28/23**	
11		ACM Abatment	5 days	Mon 7/17/23	Fri 7/21/23	3
12		Salvage/Gutout	30 days	Fri 7/21/23	Sat 8/19/23	11FS-1 day
13		Demo Superstructure	35 days	Sun 8/20/23	Sat 9/23/23	12
14		Demo slab/UG/Footings	35 days	Sun 9/24/23	Sat 10/28/23	13
15		**Ham Building**	**116 days**	**Mon 7/17/23**	**Thu 11/9/23**	
16		ACM abatement	30 days	Mon 7/17/23	Tue 8/15/23	3
17		Salvage/Gutout	30 days	Wed 8/16/23	Thu 9/14/23	16
18		Demo Superstructure	30 days	Fri 9/15/23	Sat 10/14/23	17
19		Demo slab/UG/Footings	30 days	Wed 10/11/23	Thu 11/9/23	18FS-4 days
20		**Hot Dog- wiener/freezer Building**	**104 days**	**Wed 8/16/23**	**Mon 11/27/23**	
21		ACM abatement	30 days	Wed 8/16/23	Thu 9/14/23	16
22		Salvage/Gutout	20 days	Wed 9/20/23	Mon 10/9/23	21FS+5 days
23		Demo Superstructure	30 days	Tue 10/10/23	Wed 11/8/23	22
24		Demo slab/UG/Footings	30 days	Sun 10/29/23	Mon 11/27/23	14
25		**Stock pile & Crush Concrete**	**244 days**	**Tue 9/5/23**	**Sun 5/5/24**	
26		Disconnect Electrical substation #2	5 days	Tue 9/5/23	Sat 9/9/23	9SS-10 days
27		Crush concrete	190 days	Sun 10/29/23	Sun 5/5/24	14
28		**Main Building**	**165 days**	**Tue 8/15/23**	**Fri 1/26/24**	
29		ACM Abatement	30 days	Tue 8/15/23	Wed 9/13/23	21SS-1 day
30		Salvage/Gutout	50 days	Thu 9/14/23	Thu 11/2/23	29
31		Demo Superstructure	50 days	Mon 10/30/23	Mon 12/18/23	30FS-4 days
32		Demo slab/UG/Footings	60 days	Tue 11/28/23	Fri 1/26/24	14FS+30 days
33		**Material Conversion Facility**	**70 days**	**Tue 12/19/23**	**Mon 2/26/24**	
34		Salvage/Gutout	20 days	Tue 12/19/23	Sun 1/7/24	30SS-1 day,31
35		Demo Superstructure	30 days	Fri 1/5/24	Sat 2/3/24	34FS-3 days
36		Demo slab/UG/Footings	25 days	Fri 2/2/24	Mon 2/26/24	35FS-2 days
37		**North Engine Room**	**71 days**	**Mon 7/17/23**	**Mon 9/25/23**	
38		Salvage/Gutout	5 days	Mon 7/17/23	Fri 7/21/23	11SS
39		Demo Superstructure	7 days	Mon 7/24/23	Sun 7/30/23	38FS+2 days
40		Demo slab/UG/Footings	10 days	Sat 9/16/23	Mon 9/25/23	14FS-43 days
41		**Inedible Rendering/Grinding**	**60 days**	**Wed 9/13/23**	**Sat 11/11/23**	
42		ACM abatement	5 days	Wed 9/13/23	Sun 9/17/23	29FS-1 day
43		Salvage/Gutout	10 days	Mon 9/18/23	Wed 9/27/23	42
44		Demo Superstructure	20 days	Thu 9/28/23	Tue 10/17/23	43
45		Demo slab/UG/Footings	25 days	Wed 10/18/23	Sat 11/11/23	44
46		**Boiler Room**	**81 days**	**Thu 9/28/23**	**Sun 12/17/23**	
47		Salvage/Gutout	10 days	Thu 9/28/23	Sat 10/7/23	43
48		Demo Superstructure	15 days	Sun 10/8/23	Sun 10/22/23	47
49		Demo slab/UG/Footings	20 days	Tue 11/28/23	Sun 12/17/23	48FS+10 days,56
50		**Truck Garage/Facilities & Harvest Bldg**	**95 days**	**Thu 11/2/23**	**Sun 2/4/24**	
51		Salvage/Gutout	40 days	Thu 11/2/23	Mon 12/11/23	48FS+10 days
52		Demo Superstructure	30 days	Mon 11/27/23	Tue 12/26/23	51FS-15 days
53		Demo slab/UG/Footings	40 days	Wed 12/27/23	Sun 2/4/24	52
54		**Computer/Lab/Offices**	**234 days**	**Mon 9/18/23**	**Wed 5/8/24**	
55		ACM Abatement	14 days	Mon 9/18/23	Sun 10/1/23	29FS+4 days,42
56		Salvage/Gutout	14 days	Fri 11/10/23	Thu 11/23/23	45FS-2 days,55
57		Demo Superstructure	14 days	Thu 4/25/24	Wed 5/8/24	56,27FS-11 days
58		Demo slab/UG/Footings	14 days	Thu 4/25/24	Wed 5/8/24	27FS-11 days
59		**Site Work/Storm Drain/Sewers**	**162 days**	**Thu 9/14/23**	**Thu 2/22/24**	
60		Site Slabs & Walls	155 days	Thu 9/14/23	Thu 2/15/24	29
61		Underground Utilities	162 days	Thu 9/14/23	Thu 2/22/24	60SS
62		Demo tunnel ramp	14 days	Thu 2/8/24	Wed 2/21/24	49FS-10 days,61



Appendix F: Construction Activities, Materials Used, and Associated Pollutants

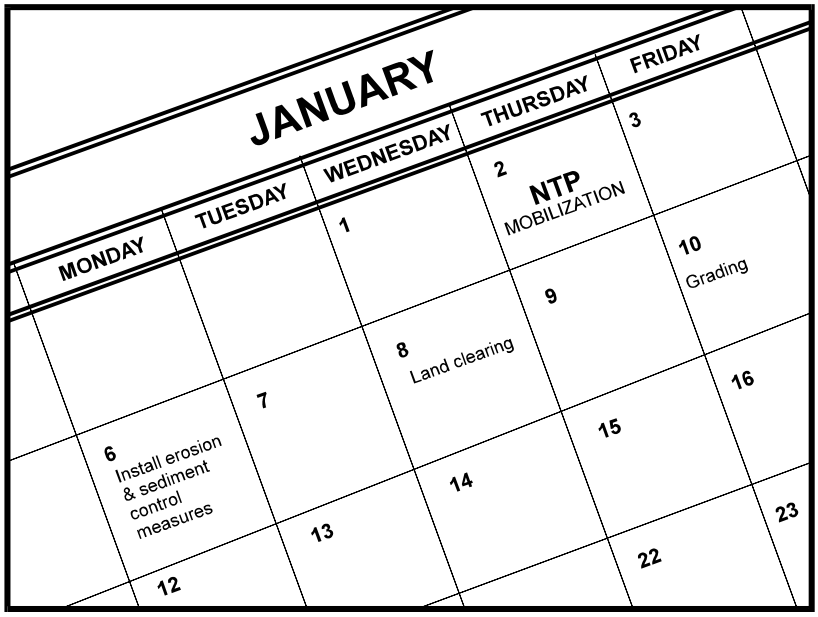
Table F.1 Pollutant Source Assessment Form

Phase	Activity	Associated Materials or Pollutants	Pollutant Category [1]
Demolition and Pre-Development Site Preparation Phase			
Grading and Land Development			
Streets and Utilities Phase			
Vertical Construction Phase			
Final Landscaping and Site Stabilization Phase			

[1] Categories per CASQA BMP Handbook (i.e., Sediment, Nutrients, Bacteria and Viruses, Oil and Grease, Metals, Synthetic Organics, Pesticides, Gross Pollutants, and Vector Production)

Appendix G: CASQA Stormwater BMP Handbook: Construction Fact Sheets

Scheduling EC-1



Categories

EC	Erosion Control	☑
SE	Sediment Control	☒
TC	Tracking Control	☒
WE	Wind Erosion Control	☒
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ Primary Objective
☒ Secondary Objective

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None

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Description and Purpose

Scheduling is the development of a written plan that includes sequencing of construction activities and the implementation of BMPs such as erosion control and sediment control while taking local climate (rainfall, wind, etc.) into consideration. The purpose is to reduce the amount and duration of soil exposed to erosion by wind, rain, runoff, and vehicle tracking, and to perform the construction activities and control practices in accordance with the planned schedule.

Suitable Applications

Proper sequencing of construction activities to reduce erosion potential should be incorporated into the schedule of every construction project especially during rainy season. Use of other, more costly yet less effective, erosion and sediment control BMPs may often be reduced through proper construction sequencing.

Limitations

- Environmental constraints such as nesting season prohibitions reduce the full capabilities of this BMP.

Implementation

- Avoid rainy periods. Schedule major grading operations during dry months when practical. Allow enough time before rainfall begins to stabilize the soil with vegetation or physical means or to install sediment trapping devices.
- Plan the project and develop a schedule showing each phase of construction. Clearly show how the rainy season relates

to soil disturbing and re-stabilization activities. Incorporate the construction schedule into the SWPPP.

- Include on the schedule, details on the rainy season implementation and deployment of:
  - Erosion control BMPs
  - Sediment control BMPs
  - Tracking control BMPs
  - Wind erosion control BMPs
  - Non-stormwater BMPs
  - Waste management and materials pollution control BMPs
- Include dates for activities that may require non-stormwater discharges such as dewatering, sawcutting, grinding, drilling, boring, crushing, blasting, painting, hydro-demolition, mortar mixing, pavement cleaning, etc.
- Work out the sequencing and timetable for the start and completion of each item such as site clearing and grubbing, grading, excavation, paving, foundation pouring utilities installation, etc., to minimize the active construction area during the rainy season.
  - Sequence trenching activities so that most open portions are closed before new trenching begins.
  - Incorporate staged seeding and re-vegetation of graded slopes as work progresses.
  - Schedule establishment of permanent vegetation during appropriate planting time for specified vegetation.
- Non-active areas should be stabilized as soon as practical after the cessation of soil disturbing activities or one day prior to the onset of precipitation.
- Monitor the weather forecast for rainfall.
- When rainfall is predicted, adjust the construction schedule to allow the implementation of soil stabilization and sediment treatment controls on all disturbed areas prior to the onset of rain.
- Be prepared year round to deploy erosion control and sediment control BMPs. Erosion may be caused during dry seasons by un-seasonal rainfall, wind, and vehicle tracking. Keep the site stabilized year round, and retain and maintain rainy season sediment trapping devices in operational condition.
- Apply permanent erosion control to areas deemed substantially complete during the project's defined seeding window.

Costs

Construction scheduling to reduce erosion may increase other construction costs due to reduced economies of scale in performing site grading. The cost effectiveness of scheduling techniques should be compared with the other less effective erosion and sedimentation controls to achieve a cost effective balance.

Inspection and Maintenance

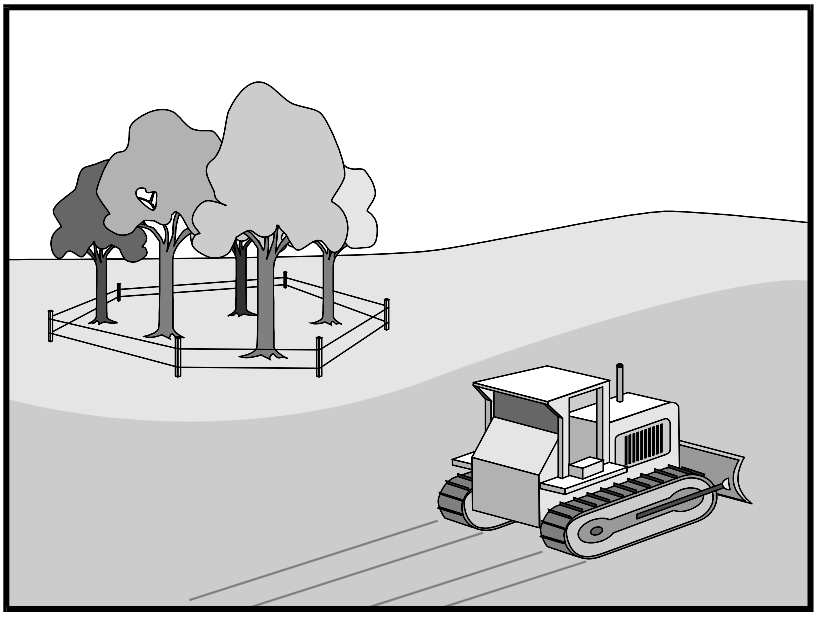
- Verify that work is progressing in accordance with the schedule. If progress deviates, take corrective actions.
- Amend the schedule when changes are warranted.
- Amend the schedule prior to the rainy season to show updated information on the deployment and implementation of construction site BMPs.

References

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management for Construction Activities Developing Pollution Prevention Plans and Best Management Practices (EPA 832-R-92-005), U.S. Environmental Protection Agency, Office of Water, September 1992.

Preservation Of Existing Vegetation EC-2



Categories

EC	Erosion Control	☑
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ Primary Objective

☒ Secondary Objective

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None

Description and Purpose

Carefully planned preservation of existing vegetation minimizes the potential of removing or injuring existing trees, vines, shrubs, and grasses that protect soil from erosion.

Suitable Applications

Preservation of existing vegetation is suitable for use on most projects. Large project sites often provide the greatest opportunity for use of this BMP. Suitable applications include the following:

- Areas within the site where no construction activity occurs, or occurs at a later date. This BMP is especially suitable to multi year projects where grading can be phased.
- Areas where natural vegetation exists and is designated for preservation. Such areas often include steep slopes, watercourse, and building sites in wooded areas.
- Areas where local, state, and federal government require preservation, such as vernal pools, wetlands, marshes, certain oak trees, etc. These areas are usually designated on the plans, or in the specifications, permits, or environmental documents.
- Where vegetation designated for ultimate removal can be temporarily preserved and be utilized for erosion control and sediment control.

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Limitations

- Requires forward planning by the owner/developer, contractor, and design staff.
- Limited opportunities for use when project plans do not incorporate existing vegetation into the site design.
- For sites with diverse topography, it is often difficult and expensive to save existing trees while grading the site satisfactory for the planned development.

Implementation

The best way to prevent erosion is to not disturb the land. In order to reduce the impacts of new development and redevelopment, projects may be designed to avoid disturbing land in sensitive areas of the site (e.g., natural watercourses, steep slopes), and to incorporate unique or desirable existing vegetation into the site's landscaping plan. Clearly marking and leaving a buffer area around these unique areas during construction will help to preserve these areas as well as take advantage of natural erosion prevention and sediment trapping.

Existing vegetation to be preserved on the site must be protected from mechanical and other injury while the land is being developed. The purpose of protecting existing vegetation is to ensure the survival of desirable vegetation for shade, beautification, and erosion control. Mature vegetation has extensive root systems that help to hold soil in place, thus reducing erosion. In addition, vegetation helps keep soil from drying rapidly and becoming susceptible to erosion. To effectively save existing vegetation, no disturbances of any kind should be allowed within a defined area around the vegetation. For trees, no construction activity should occur within the drip line of the tree.

Timing

- Provide for preservation of existing vegetation prior to the commencement of clearing and grubbing operations or other soil disturbing activities in areas where no construction activity is planned or will occur at a later date.

Design and Layout

- Mark areas to be preserved with temporary fencing. Include sufficient setback to protect roots.
  - Orange colored plastic mesh fencing works well.
  - Use appropriate fence posts and adequate post spacing and depth to completely support the fence in an upright position.
- Locate temporary roadways, stockpiles, and layout areas to avoid stands of trees, shrubs, and grass.
- Consider the impact of grade changes to existing vegetation and the root zone.
- Maintain existing irrigation systems where feasible. Temporary irrigation may be required.
- Instruct employees and subcontractors to honor protective devices. Prohibit heavy equipment, vehicular traffic, or storage of construction materials within the protected area.

Costs

There is little cost associated with preserving existing vegetation if properly planned during the project design, and these costs may be offset by aesthetic benefits that enhance property values. During construction, the cost for preserving existing vegetation will likely be less than the cost of applying erosion and sediment controls to the disturbed area. Replacing vegetation inadvertently destroyed during construction can be extremely expensive, sometimes in excess of $10,000 per tree.

Inspection and Maintenance

During construction, the limits of disturbance should remain clearly marked at all times. Irrigation or maintenance of existing vegetation should be described in the landscaping plan. If damage to protected trees still occurs, maintenance guidelines described below should be followed:

- Verify that protective measures remain in place. Restore damaged protection measures immediately.
- Serious tree injuries shall be attended to by an arborist.
- Damage to the crown, trunk, or root system of a retained tree shall be repaired immediately.
- Trench as far from tree trunks as possible, usually outside of the tree drip line or canopy. Curve trenches around trees to avoid large roots or root concentrations. If roots are encountered, consider tunneling under them. When trenching or tunneling near or under trees to be retained, place tunnels at least 18 in. below the ground surface, and not below the tree center to minimize impact on the roots.
- Do not leave tree roots exposed to air. Cover exposed roots with soil as soon as possible. If soil covering is not practical, protect exposed roots with wet burlap or peat moss until the tunnel or trench is ready for backfill.
- Cleanly remove the ends of damaged roots with a smooth cut.
- Fill trenches and tunnels as soon as possible. Careful filling and tamping will eliminate air spaces in the soil, which can damage roots.
- If bark damage occurs, cut back all loosened bark into the undamaged area, with the cut tapered at the top and bottom and drainage provided at the base of the wood. Limit cutting the undamaged area as much as possible.
- Aerate soil that has been compacted over a trees root zone by punching holes 12 in. deep with an iron bar, and moving the bar back and forth until the soil is loosened. Place holes 18 in. apart throughout the area of compacted soil under the tree crown.
- Fertilization
  - Fertilize stressed or damaged broadleaf trees to aid recovery.
  - Fertilize trees in the late fall or early spring.

- Apply fertilizer to the soil over the feeder roots and in accordance with label instructions, but never closer than 3 ft to the trunk. Increase the fertilized area by one-fourth of the crown area for conifers that have extended root systems.

- Retain protective measures until all other construction activity is complete to avoid damage during site cleanup and stabilization.

References

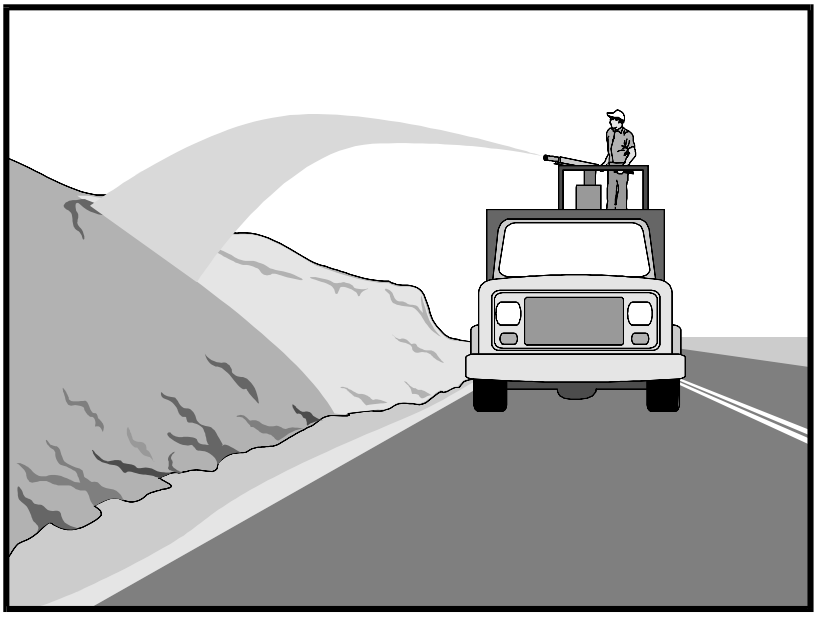
County of Sacramento Tree Preservation Ordinance, September 1981.

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Stormwater Management of the Puget Sound Basin, Technical Manual, Publication #91-75, Washington State Department of Ecology, February 1992.

Water Quality Management Plan for The Lake Tahoe Region, Volume II, Handbook of Management Practices, Tahoe Regional Planning Agency, November 1988.

Hydraulic Mulch EC-3



Categories

EC	Erosion Control	☑
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	☒
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ Primary Category
☒ Secondary Category

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

EC-4 Hydroseeding
EC-5 Soil Binders
EC-6 Straw Mulch
EC-7 Geotextiles and Mats
EC-8 Wood Mulching
EC-14 Compost Blanket
EC-16 Non-Vegetative Stabilization

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Description and Purpose

Hydraulic Mulch consists of various types of fibrous materials mixed with water and sprayed onto the soil surface in slurry form to provide a layer of temporary protection from wind and water erosion.

Suitable Applications

Hydraulic mulch as a temporary, stand alone, erosion control BMP is suitable for disturbed areas that require temporary protection from wind and water erosion until permanent soil stabilization activities commence. Examples include:

- Rough-graded areas that will remain inactive for longer than permit-required thresholds (e.g., 14 days) or otherwise require stabilization to minimize erosion or prevent sediment discharges.
- Soil stockpiles.
- Slopes with exposed soil between existing vegetation such as trees or shrubs.
- Slopes planted with live, container-grown vegetation or plugs.
- Slopes burned by wildfire.

Hydraulic mulch can also be applied to augment other erosion control BMPs such as:

- In conjunction with straw mulch (see EC-6 Straw Mulch) where the rate of hydraulic mulch is reduced to 100-500 lbs per acre and the slurry is applied over the straw as a tackifying agent to hold the straw in place.
- Supplemental application of soil amendments, such as fertilizer, lime, gypsum, soil bio-stimulants or compost.

Limitations

In general, hydraulic mulch is not limited by slope length, gradient or soil type. However, the following limitations typically apply:

- Most hydraulic mulch applications, particularly bonded fiber matrices (BFMs), require at least 24 hours to dry before rainfall occurs.
- Temporary applications (i.e., without a vegetative component) may require a second application in order to remain effective for an entire rainy season.
- Treatment areas must be accessible to hydraulic mulching equipment.
- Availability of water sources in remote areas for mixing and application.
- As a stand-alone temporary BMP, hydraulic mulches may need to be re-applied to maintain their erosion control effectiveness, typically after 6-12 months depending on the type of mulch used.
- Availability of hydraulic mulching equipment may be limited just prior to the rainy season and prior to storms due to high demand.
- Cellulose fiber mulches alone may not perform well on steep slopes or in course soils.
- This BMP consists of a mixture of several constituents (e.g., fibers/mulches, tackifiers, and other chemical constituents), some of which may be proprietary and may come pre-mixed by the manufacturer. The water quality impacts of these constituents are relatively unknown and some may have water quality impacts due to their chemical makeup. Refer to specific chemical properties identified in the product Material Safety Data Sheet; products should be evaluated for project-specific implementation by the SWPPP Preparer. Refer to factsheet EC-05 for further guidance on selecting soil binders.

Implementation

- Where feasible, it is preferable to prepare soil surfaces prior to application by roughening embankments and fill areas with a crimping or punching type roller or by track walking.
- The majority of hydraulic mulch applications do not necessarily require surface/soil preparation (See EC-15 Soil Preparation) although in almost every case where re-vegetation is included as part of the practice, soil preparation can be beneficial. One of the advantages of hydraulic mulch over other erosion control methods is that it can be applied in areas where soil preparation is precluded by site conditions, such as steep slopes, rocky soils, or inaccessibility.

- Avoid mulch over spray onto roads, sidewalks, drainage channels, existing vegetation, etc.
- Hydraulic mulching is generally performed utilizing specialized machines that have a large water-holding/mixing tank and some form of mechanical agitation or other recirculation method to keep water, mulch and soil amendments in suspension. The mixed hydraulic slurry can be applied from a tower sprayer on top of the machine or by extending a hose to areas remote from the machine.
- Where possible apply hydraulic mulch from multiple directions to adequately cover the soil. Application from a single direction can result in shadowing, uneven coverage and failure of the BMP.
- Hydraulic mulch can also include a vegetative component, such as seed, rhizomes, or stolons (see EC-4 Hydraulic Seed).
- Typical hydraulic mulch application rates range from 2,000 pounds per acre for standard mulches (SMs) to 3,500 pounds per acre for BFMs. However, the required amount of hydraulic mulch to provide adequate coverage of exposed topsoil may appear to exceed the standard rates when the roughness of the soil surface is changed due to soil preparation methods (see EC-15 Soil Preparation) or by slope gradient.
- Other factors such as existing soil moisture and soil texture can have a profound effect on the amount of hydraulic mulch required (i.e. application rate) applied to achieve an erosion-resistant covering.
- Avoid use of mulch without a tackifier component, especially on slopes.
- Mulches used in the hydraulic mulch slurry can include:
  - Cellulose fiber
  - Thermally-processed wood fibers
  - Cotton
  - Synthetics
  - Compost (see EC-14, Compost Blanket)
- Additional guidance on the comparison and selection of temporary slope stabilization methods is provided in Appendix F of the Handbook.

Categories of Hydraulic Mulches

Standard Hydraulic Mulch (SM)

Standard hydraulic mulches are generally applied at a rate of 2,000 pounds per acre and are manufactured containing around 5% tackifier (i.e. soil binder), usually a plant-derived guar or psyllium type. Most standard mulches are green in color derived from food-color based dyes.

Hydraulic Matrices (HM) and Stabilized Fiber Matrices (SFM)

Hydraulic matrices and stabilized fiber matrices are slurries which contain increased levels of tackifiers/soil binders; usually 10% or more by weight. HMs and SFMs have improved performance compared to a standard hydraulic mulch (SM) because of the additional percentage of tackifier and because of their higher application rates, typically 2,500 – 4,000 pounds per acre. Hydraulic matrices can include a mixture of fibers, for example, a 50/50 blend of paper and wood fiber. In the case of an SFM, the tackifier/soil binder is specified as a polyacrylamide (PAM).

Bonded Fiber Matrix (BFM)

Bonded fiber matrices (BFMs) are hydraulically-applied systems of fibers, adhesives (typically guar based) and chemical cross-links. Upon drying, the slurry forms an erosion-resistant blanket that prevents soil erosion and promotes vegetation establishment. The cross-linked adhesive in the BFM should be biodegradable and should not dissolve or disperse upon re-wetting. BFMs are typically applied at rates from 3,000 to 4,000 lbs/acre based on the manufacturer's recommendation. BFMs should not be applied immediately before, during or immediately after rainfall or if the soil is saturated. Depending on the product, BFMs typically require 12 to 24 hours to dry and become effective.

Mechanically-Bonded Fiber Matrices (MBFM)

Mechanically-bonded fiber matrices (MBFMs) are hydraulically applied systems similar to BFM that use crimped synthetic fibers and PAM and are typically applied to a slope at a higher application rate than a standard BFM.

Hydraulic Compost Matrix (HCM)

Hydraulic compost matrix (HCM) is a field-derived practice whereby finely graded or sifted compost is introduced into the hydraulic mulch slurry. A guar-type tackifier can be added for steeper slope applications as well as any specified seed mixtures. A HCM can help to accelerate seed germination and growth. HCMs are particularly useful as an in-fill for three-dimensional re-vegetation geocomposites, such as turf reinforcement mats (TRM) (see EC-7 Geotextiles and Mats).

Costs

Average installed costs for hydraulic mulch categories are is provided in Table 1, below.

Table 1
HYDRAULIC MULCH BMPs
INSTALLED COSTS

BMP	Installed Cost/Acre
Standard Hydraulic Mulching (SM)	$1,700 - $3,600 per acre
Hydraulic Matrices (HM) and Stabilized Fiber Matrices	
Guar-based	$2,000 - $4,000 per acre
PAM-based	$2,500 - $5,610 per acre
Bonded Fiber Matrix (BFM)	$3,900 - $6,900 per acre
Mechanically Bonded Fiber Matrix (MBFM)	$4,500 - $6,000 per acre
Hydraulic Compost Matrix (HCM)	$3,000 - $3,500 per acre

Source: Cost information received from individual product manufacturers solicited by Geosyntec Consultants (2004)

Inspection and Maintenance

- Maintain an unbroken, temporary mulched ground cover throughout the period of construction when the soils are not being reworked.
- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Areas where erosion is evident should be repaired and BMPs re-applied as soon as possible. Care should be exercised to minimize the damage to protected areas while making repairs, as any area damaged will require re-application of BMPs.
- Compare the number of bags or weight of applied mulch to the area treated to determine actual application rates and compliance with specifications.

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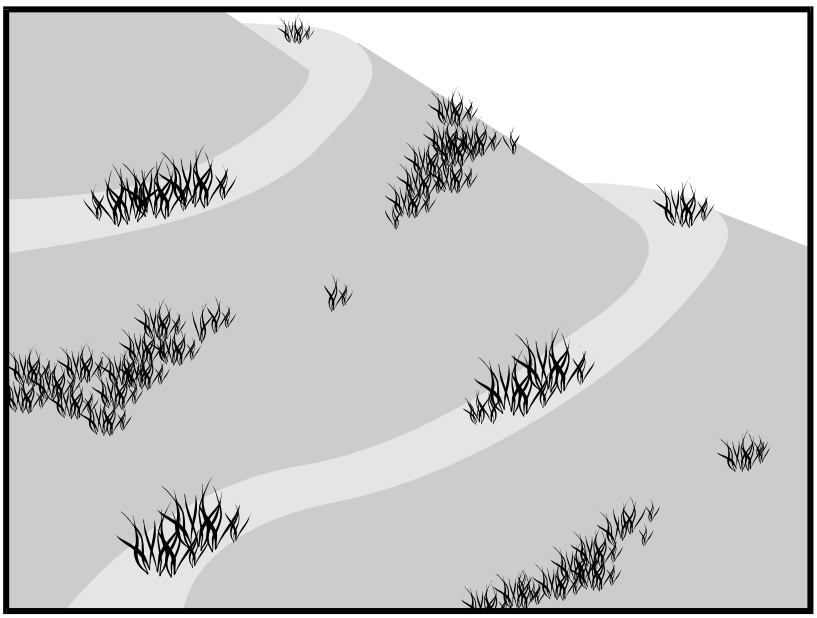
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Hydroseeding EC-4



Description and Purpose

Hydroseeding typically consists of applying a mixture of a hydraulic mulch, seed, fertilizer, and stabilizing emulsion with a hydraulic mulcher, to temporarily protect exposed soils from erosion by water and wind. Hydraulic seeding, or hydroseeding, is simply the method by which temporary or permanent seed is applied to the soil surface.

Suitable Applications

Hydroseeding is suitable for disturbed areas requiring temporary protection until permanent stabilization is established, for disturbed areas that will be re-disturbed following an extended period of inactivity, or to apply permanent stabilization measures. Hydroseeding without mulch or other cover (e.g. EC-7, Erosion Control Blanket) is not a stand-alone erosion control BMP and should be combined with additional measures until vegetation establishment.

Typical applications for hydroseeding include:

- Disturbed soil/graded areas where permanent stabilization or continued earthwork is not anticipated prior to seed germination.
- Cleared and graded areas exposed to seasonal rains or temporary irrigation.
- Areas not subject to heavy wear by construction equipment or high traffic.

Categories

EC	Erosion Control	☑
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	☒
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ Primary Category
☒ Secondary Category

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

EC-3 Hydraulic Mulch
EC-5 Soil Binders
EC-6 Straw Mulch
EC-7 Geotextiles and Mats
EC-8 Wood Mulching
EC-14 Compost Blanket
EC-16 Non-Vegetative Stabilization

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Limitations

- Availability of hydroseeding equipment may be limited just prior to the rainy season and prior to storms due to high demand.
- Hydraulic seed should be applied with hydraulic mulch or a stand-alone hydroseed application should be followed by one of the following:
    - Straw mulch (see Straw Mulch EC-6)
    - Rolled erosion control products (see Geotextiles and Mats EC-7)
    - Application of Compost Blanket (see Compost Blanket EC-14)

  Hydraulic seed may be used alone only on small flat surfaces when there is sufficient time in the season to ensure adequate vegetation establishment and coverage to provide adequate erosion control.
- Hydraulic seed without mulch does not provide immediate erosion control.
- Temporary seeding may not be appropriate for steep slopes (i.e., slopes readily prone to rill erosion or without sufficient topsoil).
- Temporary seeding may not be appropriate in dry periods without supplemental irrigation.
- Temporary vegetation may have to be removed before permanent vegetation is applied.
- Temporary vegetation may not be appropriate for short term inactivity (i.e. less than 3-6 months).
- This BMP consists of a mixture of several constituents (e.g., fibers/mulches, tackifiers, and other chemical constituents), some of which may be proprietary and may come pre-mixed by the manufacturer. The water quality impacts of these constituents are relatively unknown and some may have water quality impacts due to their chemical makeup. Additionally these constituents may require non-visible pollutant monitoring. Refer to specific chemical properties identified in the product Material Safety Data Sheet; products should be evaluated for project-specific implementation by the SWPPP Preparer. Refer to factsheet EC-05 for further guidance on selecting soil binders.

Implementation

In order to select appropriate hydraulic seed mixtures, an evaluation of site conditions should be performed with respect to:

- Soil conditions
- Site topography and exposure (sun/wind)
- Season and climate
- Vegetation types
- Maintenance requirements
- Sensitive adjacent areas
- Water availability
- Plans for permanent vegetation

The local office of the U.S.D.A. Natural Resources Conservation Service (NRCS), Resource Conservation Districts and Agricultural Extension Service can provide information on appropriate seed mixes.

The following steps should be followed for implementation:

- Where appropriate or feasible, soil should be prepared to receive the seed by disking or otherwise scarifying (See EC-15, Soil Preparation) the surface to eliminate crust, improve air and water infiltration and create a more favorable environment for germination and growth.
- Avoid use of hydraulic seed in areas where the BMP would be incompatible with future earthwork activities.
- Hydraulic seed can be applied using a multiple step or one step process.
  - In a multiple step process, hydraulic seed is applied first, followed by mulch or a Rolled Erosion Control Product (RECP).
  - In the one step process, hydraulic seed is applied with hydraulic mulch in a hydraulic matrix. When the one step process is used to apply the mixture of fiber, seed, etc., the seed rate should be increased to compensate for all seeds not having direct contact with the soil.
- All hydraulically seeded areas should have mulch, or alternate erosion control cover to keep seeds in place and to moderate soil moisture and temperature until the seeds germinate and grow.
- All seeds should be in conformance with the California State Seed Law of the Department of Agriculture. Each seed bag should be delivered to the site sealed and clearly marked as to species, purity, percent germination, dealer's guarantee, and dates of test. The container should be labeled to clearly reflect the amount of Pure Live Seed (PLS) contained. All legume seed should be pellet inoculated. Inoculant sources should be species specific and should be applied at a rate of 2 lb of inoculant per 100 lb seed.
- Commercial fertilizer should conform to the requirements of the California Food and Agricultural Code, which can be found at http://www.leginfo.ca.gov/.html/fac_table_of_contents.html. Fertilizer should be pelleted or granular form.
- Follow up applications should be made as needed to cover areas of poor coverage or germination/vegetation establishment and to maintain adequate soil protection.
- Avoid over spray onto roads, sidewalks, drainage channels, existing vegetation, etc.
- Additional guidance on the comparison and selection of temporary slope stabilization methods is provided in Appendix F of the Handbook.

Costs

Average cost for installation and maintenance may vary from as low as $1,900 per acre for flat slopes and stable soils, to $4,000 per acre for moderate to steep slopes and/or erosive soils. Cost of seed mixtures vary based on types of required vegetation.

BMP	Installed Cost per Acre
Hydraulic Seed	$1,900-$4,000

Source: Cost information received from individual product manufacturers solicited by Geosyntec Consultants (2004).

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Areas where erosion is evident should be repaired and BMPs re-applied as soon as possible. Care should be exercised to minimize the damage to protected areas while making repairs, as any area damaged will require re-application of BMPs.
- Where seeds fail to germinate, or they germinate and die, the area must be re-seeded, fertilized, and mulched within the planting season, using not less than half the original application rates.
- Irrigation systems, if applicable, should be inspected daily while in use to identify system malfunctions and line breaks. When line breaks are detected, the system must be shut down immediately and breaks repaired before the system is put back into operation.
- Irrigation systems should be inspected for complete coverage and adjusted as needed to maintain complete coverage.

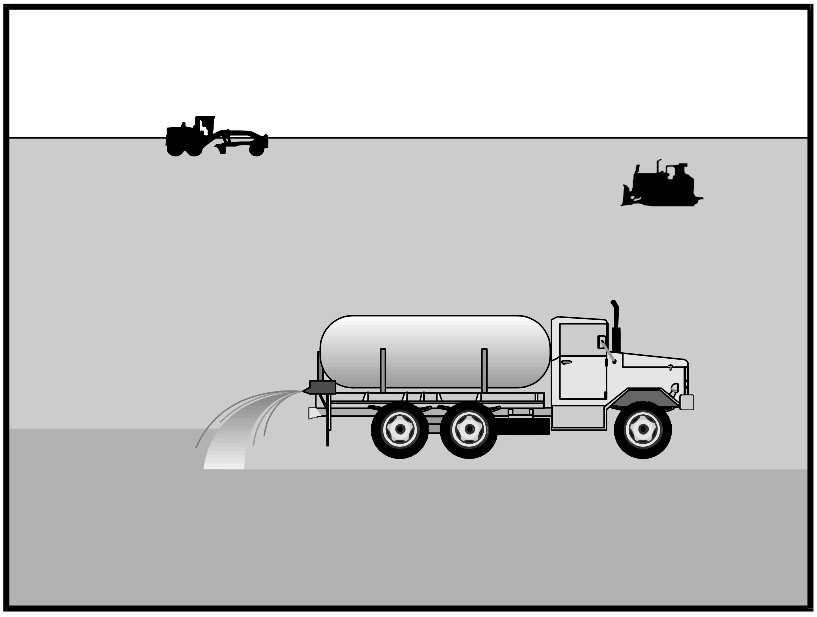
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Guidance Document: Soil Stabilization for Temporary Slopes, State of California Department of Transportation (Caltrans), November 1999.

Soil Binders EC-5



Categories

EC	Erosion Control	☑
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	☒
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ Primary Category
☒ Secondary Category

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

EC-3 Hydraulic Mulch
EC-4 Hydroseeding
EC-6 Straw Mulch
EC-7 Geotextiles and Mats
EC-8 Wood Mulching

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Description and Purpose

Soil binding consists of application and maintenance of a soil stabilizer to exposed soil surfaces. Soil binders are materials applied to the soil surface to temporarily prevent water and wind induced erosion of exposed soils on construction sites.

Suitable Applications

Soil binders are typically applied to disturbed areas requiring temporary protection. Because soil binders, when used as a stand-alone practice, can often be incorporated into the soil, they are a good alternative to mulches in areas where grading activities will soon resume. Soil binders are commonly used in the following areas:

- Rough graded soils that will be inactive for a short period of time
- Soil stockpiles
- Temporary haul roads prior to placement of crushed rock
- Compacted soil road base
- Construction staging, materials storage, and layout areas

Limitations

- Soil binders are temporary in nature and may need reapplication.
- Soil binders require a minimum curing time until fully effective, as prescribed by the manufacturer. Curing time

may be 24 hours or longer. Soil binders may need reapplication after a storm event.

- Soil binders will generally experience spot failures during heavy rainfall events. If runoff penetrates the soil at the top of a slope treated with a soil binder, it is likely that the runoff will undercut the stabilized soil layer and discharge at a point further down slope.
- Plant-material-based soil binders do not generally hold up to pedestrian or vehicular traffic across treated areas as well as polymeric emulsion blends or cementitious-based binders.
- Soil binders may not sufficiently penetrate compacted soils.
- Some soil binders are soil texture specific in terms of their effectiveness. For example, polyacrylamides (PAMs) work very well on silt and clayey soils but their performance decreases dramatically in sandy soils.
- Some soil binders may not perform well with low relative humidity. Under rainy conditions, some agents may become slippery or leach out of the soil.
- Soil binders may not cure if low temperatures occur within 24 hours of application.
- The water quality impacts of some chemical soil binders are relatively unknown and some may have water quality impacts due to their chemical makeup. Additionally, these chemical may require non-visible pollutant monitoring. Products should be evaluated for project-specific implementation by the SWPPP Preparer. Refer to the product Material Safety Data Sheet for chemical properties.

Implementation

General Considerations

- Soil binders should conform to local municipality specifications and requirements.
- Site soil types will dictate appropriate soil binders to be used.
- A soil binder must be environmentally benign (non-toxic to plant and animal life), easy to apply, easy to maintain, economical, and should not stain paved or painted surfaces. Soil binders should not pollute stormwater when cured. Obtain a Material Safety Data Sheet (MSDS) from the manufacturer to ensure non-toxicity.
- Stormwater runoff from PAM treated soils should pass through one of the following sediment control BMP prior to discharging to surface waters.
    - When the total drainage area is greater than or equal to 5 acres, PAM treated areas should drain to a sediment basin.
    - Areas less than 5 acres should drain to sediment control BMPs, such as a sediment trap, or a series of check dams. The total number of check dams used should be maximized to achieve the greatest amount of settlement of sediment prior to discharging from the site. Each check dam should be spaced evenly in the drainage channel through which stormwater flows are discharged off site.

- Performance of soil binders depends on temperature, humidity, and traffic across treated areas.
- Avoid over spray onto roads, sidewalks, drainage channels, existing vegetation, etc.
- Additional guidance on the comparison and selection of temporary slope stabilization methods is provided in Appendix F of the Handbook.

Selecting a Soil Binder

Properties of common soil binders used for erosion control are provided on Table 1 at the end of this Fact Sheet. Use Table 1 to select an appropriate soil binder. Refer to WE-1, Wind Erosion Control, for dust control soil binders.

Factors to consider when selecting a soil binder include the following:

- Suitability to situation - Consider where the soil binder will be applied, if it needs a high resistance to leaching or abrasion, and whether it needs to be compatible with any existing vegetation. Determine the length of time soil stabilization will be needed, and if the soil binder will be placed in an area where it will degrade rapidly. In general, slope steepness is not a discriminating factor for the listed soil binders.
- Soil types and surface materials - Fines and moisture content are key properties of surface materials. Consider a soil binder's ability to penetrate, likelihood of leaching, and ability to form a surface crust on the surface materials.
- Frequency of application - The frequency of application is related to the functional longevity of the binder, which can be affected by subgrade conditions, surface type, climate, and maintenance schedule.
- Frequent applications could lead to high costs. Application frequency may be minimized if the soil binder has good penetration, low evaporation, and good longevity. Consider also that frequent application will require frequent equipment clean up.

Plant-Material-Based (Short Lived, <6 months) Binders

Guar: Guar is a non-toxic, biodegradable, natural galactomannan-based hydrocolloid treated with dispersant agents for easy field mixing. It should be mixed with water at the rate of 11 to 15 lb per 1,000 gallons. Recommended minimum application rates are as follows:

Application Rates for Guar Soil Stabilizer

Slope (H:V):	Flat	4:1	3:1	2:1	1:1
lb/acre:	40	45	50	60	70

Psyllium: Psyllium is composed of the finely ground muciloid coating of plantago seeds that is applied as a dry powder or in a wet slurry to the surface of the soil. It dries to form a firm but rewettable membrane that binds soil particles together, but permits germination and growth of seed. Psyllium requires 12 to 18 hours drying time. Application rates should be from 80 to 200 lb/acre, with enough water in solution to allow for a uniform slurry flow.

Starch: Starch is non-ionic, cold water soluble (pre-gelatinized) granular cornstarch. The material is mixed with water and applied at the rate of 150 lb/acre. Approximate drying time is 9 to 12 hours.

Plant-Material-Based (Long Lived, 6-12 months) Binders

Pitch and Rosin Emulsion: Generally, a non-ionic pitch and rosin emulsion has a minimum solids content of 48%. The rosin should be a minimum of 26% of the total solids content. The soil stabilizer should be non-corrosive, water dilutable emulsion that upon application cures to a water insoluble binding and cementing agent. For soil erosion control applications, the emulsion is diluted and should be applied as follows:

- For clayey soil: 5 parts water to 1 part emulsion
- For sandy soil: 10 parts water to 1 part emulsion

Application can be by water truck or hydraulic seeder with the emulsion and product mixture applied at the rate specified by the manufacturer.

Polymeric Emulsion Blend Binders

Acrylic Copolymers and Polymers: Polymeric soil stabilizers should consist of a liquid or solid polymer or copolymer with an acrylic base that contains a minimum of 55% solids. The polymeric compound should be handled and mixed in a manner that will not cause foaming or should contain an anti-foaming agent. The polymeric emulsion should not exceed its shelf life or expiration date; manufacturers should provide the expiration date. Polymeric soil stabilizer should be readily miscible in water, non-injurious to seed or animal life, non-flammable, should provide surface soil stabilization for various soil types without totally inhibiting water infiltration, and should not re-emulsify when cured. The applied compound typically requires 12 to 24 hours drying time. Liquid copolymer should be diluted at a rate of 10 parts water to 1 part polymer and the mixture applied to soil at a rate of 1,175 gallons/acre.

Liquid Polymers of Methacrylates and Acrylates: This material consists of a tackifier/sealer that is a liquid polymer of methacrylates and acrylates. It is an aqueous 100% acrylic emulsion blend of 40% solids by volume that is free from styrene, acetate, vinyl, ethoxylated surfactants or silicates. For soil stabilization applications, it is diluted with water in accordance with the manufacturer's recommendations, and applied with a hydraulic seeder at the rate of 20 gallons/acre. Drying time is 12 to 18 hours after application.

Copolymers of Sodium Acrylates and Acrylamides: These materials are non-toxic, dry powders that are copolymers of sodium acrylate and acrylamide. They are mixed with water and applied to the soil surface for erosion control at rates that are determined by slope gradient:

Slope Gradient (H:V)	lb/acre
Flat to 5:1	3.0 – 5.0
5:1 to 3:1	5.0 – 10.0
2:1 to 1:1	10.0 – 20.0

Poly-Acrylamide (PAM) and Copolymer of Acrylamide**:** Linear copolymer polyacrylamide for use as a soil binder is packaged as a dry flowable solid, as a liquid. Refer to the manufacturer's recommendation for dilution and application rates as they vary based on liquid or dry form, site conditions and climate.

- Limitations specific to PAM are as follows:
  - Do not use PAM on a slope that flows into a water body without passing through a sediment trap or sediment basin.
  - The specific PAM copolymer formulation must be anionic. Cationic PAM should not be used in any application because of known aquatic toxicity problems. Only the highest drinking water grade PAM, certified for compliance with ANSI/NSF Standard 60 for drinking water treatment, should be used for soil applications.
  - PAM designated for erosion and sediment control should be "water soluble" or "linear" or "non-cross linked".
  - PAM should not be used as a stand-alone BMP to protect against water-based erosion. When combined with mulch, its effectiveness increases dramatically.

Hydro-Colloid Polymers: Hydro-Colloid Polymers are various combinations of dry flowable poly-acrylamides, copolymers and hydro-colloid polymers that are mixed with water and applied to the soil surface at rates of 55 to 60 lb/acre. Drying times are 0 to 4 hours.

Cementitious-Based Binders

Gypsum: This is a formulated gypsum based product that readily mixes with water and mulch to form a thin protective crust on the soil surface. It is composed of high purity gypsum that is ground, calcined and processed into calcium sulfate hemihydrate with a minimum purity of 86%. It is mixed in a hydraulic seeder and applied at rates 4,000 to 12,000 lb/acre. Drying time is 4 to 8 hours.

Applying Soil Binders

After selecting an appropriate soil binder, the untreated soil surface must be prepared before applying the soil binder. The untreated soil surface must contain sufficient moisture to assist the agent in achieving uniform distribution. In general, the following steps should be followed:

- Follow manufacturer's written recommendations for application rates, pre-wetting of application area, and cleaning of equipment after use.
- Prior to application, roughen embankment and fill areas.
- Consider the drying time for the selected soil binder and apply with sufficient time before anticipated rainfall. Soil binders should not be applied during or immediately before rainfall.
- Avoid over spray onto roads, sidewalks, drainage channels, sound walls, existing vegetation, etc.

- Soil binders should not be applied to frozen soil, areas with standing water, under freezing or rainy conditions, or when the temperature is below 40°F during the curing period.
- More than one treatment is often necessary, although the second treatment may be diluted or have a lower application rate.
- Generally, soil binders require a minimum curing time of 24 hours before they are fully effective. Refer to manufacturer's instructions for specific cure time.
- For liquid agents:
  - Crown or slope ground to avoid ponding.
  - Uniformly pre-wet ground at 0.03 to 0.3 gal/yd^2 or according to manufacturer's recommendations.
  - Apply solution under pressure. Overlap solution 6 to 12 in.
  - Allow treated area to cure for the time recommended by the manufacturer; typically at least 24 hours.
  - Apply second treatment before first treatment becomes ineffective, using 50% application rate.
  - In low humidities, reactivate chemicals by re-wetting with water at 0.1 to 0.2 gal/yd^2.

Costs

Costs vary according to the soil stabilizer selected for implementation. The following are approximate installed costs:

Soil Binder	Cost per Acre (2004)[1]	Estimated Cost per Acre (2009)[2]
Plant-Material-Based (Short Lived) Binders	$700-$900	$770-$990
Plant-Material-Based (Long Lived) Binders	$1,200-$1,500	$1,320-$1,650
Polymeric Emulsion Blend Binders	$700 -$1,500	$770-$1,650
Cementitious-Based Binders	$800-$1,200	$880-$1,350

1. Source: Cost information received from individual product manufacturers solicited by Geosyntec Consultants (2004).

2. 2009 costs reflect a 10% escalation over year 2004 costs. Escalation based on informal survey of industry trends. Note: Expected cost increase is offset by competitive economic conditions.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.

- Areas where erosion is evident should be repaired and BMPs re-applied as soon as possible. Care should be exercised to minimize the damage to protected areas while making repairs, as any area damaged will require re-application of BMPs.
- Reapply the selected soil binder as needed to maintain effectiveness.

Table 1 Properties of Soil Binders for Erosion Control

Evaluation Criteria	Binder Type			
	Plant Material Based (Short Lived)	**Plant Material Based (Long Lived)**	**Polymeric Emulsion Blends**	**Cementitious-Based Binders**
Relative Cost	Low	Moderate to High	Low to High	Low to Moderate
Resistance to Leaching	High	High	Low to Moderate	Moderate
Resistance to Abrasion	Moderate	Low	Moderate to High	Moderate to High
Longevity	Short to Medium	Medium	Medium to Long	Medium
Minimum Curing Time before Rain	9 to 18 hours	19 to 24 hours	0 to 24 hours	4 to 8 hours
Compatibility with Existing Vegetation	Good	Poor	Poor	Poor
Mode of Degradation	Biodegradable	Biodegradable	Photodegradable/ Chemically Degradable	Photodegradable/ Chemically Degradable
Labor Intensive	No	No	No	No
Specialized Application Equipment	Water Truck or Hydraulic Mulcher	Water Truck or Hydraulic Mulcher	Water Truck or Hydraulic Mulcher	Water Truck or Hydraulic Mulcher
Liquid/Powder	Powder	Liquid	Liquid/Powder	Powder
Surface Crusting	Yes, but dissolves on rewetting	Yes	Yes, but dissolves on rewetting	Yes
Clean Up	Water	Water	Water	Water
Erosion Control Application Rate	Varies (1)	Varies (1)	Varies (1)	4,000 to 12,000 lbs/acre

(1) See Implementation for specific rates.

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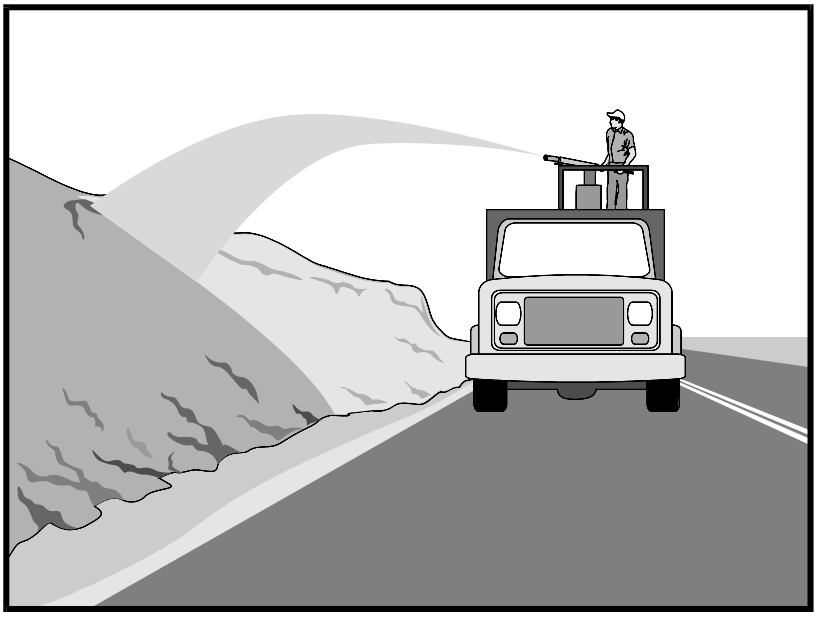
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Stormwater Management for Construction Activities, Developing Pollution Prevention Plans and Best Management Practices, EPA 832-R-92005; USEPA, April 1992.

Straw Mulch EC-6



Categories		
EC	Erosion Control	☑
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	☒
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ Primary Category
☒ Secondary Category

Description and Purpose

Straw mulch consists of placing a uniform layer of straw and incorporating it into the soil with a studded roller or crimper, or anchoring it with a tackifier or stabilizing emulsion. Straw mulch protects the soil surface from the impact of rain drops, preventing soil particles from becoming dislodged.

Suitable Applications

Straw mulch is suitable for disturbed areas requiring temporary protection until permanent stabilization is established. Straw mulch can be specified for the following applications:

- As a stand-alone BMP on disturbed areas until soils can be prepared for permanent vegetation. The longevity of straw mulch is typically less than six months.
- Applied in combination with temporary seeding strategies
- Applied in combination with permanent seeding strategies to enhance plant establishment and final soil stabilization
- Applied around containerized plantings to control erosion until the plants become established to provide permanent stabilization

Limitations

Availability of straw and straw blowing equipment may be limited just prior to the rainy season and prior to storms due to high demand.

Targeted Constituents	
Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives
EC-3 Hydraulic Mulch
EC-4 Hydroseeding
EC-5 Soil Binders
EC-7 Geotextiles and Mats
EC-8 Wood Mulching
EC-14 Compost Blanket

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- There is a potential for introduction of weed seed and unwanted plant material if weed-free agricultural straw is not specified.
- Straw mulch applied by hand is more time intensive and potentially costly.
- Wind may limit application of straw and blow straw into undesired locations.
- May have to be removed prior to permanent seeding or prior to further earthwork.
- "Punching" of straw does not work in sandy soils, necessitating the use of tackifiers.
- Potential fugitive dust control issues associated with straw applications can occur. Application of a stabilizing emulsion or a water stream at the same time straw is being blown can reduce this problem.
- Use of plastic netting should be avoided in areas where wildlife may be entrapped and may be prohibited for projects in certain areas with sensitive wildlife species, especially reptiles and amphibians.

Implementation

- Straw should be derived from weed-free wheat, rice, or barley. Where required by the plans, specifications, permits, or environmental documents, native grass straw should be used.
- Use tackifier to anchor straw mulch to the soil on slopes.
- Crimping, punch roller-type rollers, or track walking may also be used to incorporate straw mulch into the soil on slopes. Track walking can be used where other methods are impractical.
- Avoid placing straw onto roads, sidewalks, drainage channels, sound walls, existing vegetation, etc.
- Straw mulch with tackifier should not be applied during or immediately before rainfall.
- Additional guidance on the comparison and selection of temporary slope stabilization methods is provided in Appendix F of the Handbook.

Application Procedures

- When using a tackifier to anchor the straw mulch, roughen embankment or fill areas by rolling with a crimping or punching-type roller or by track walking before placing the straw mulch. Track walking should only be used where rolling is impractical.
- Apply straw at a rate of between 3,000 and 4,000 lb/acre, either by machine or by hand distribution and provide 100% ground cover. A lighter application is used for flat surfaces and a heavier application is used for slopes.
- Evenly distribute straw mulch on the soil surface.
- Anchoring straw mulch to the soil surface by "punching" it into the soil mechanically (incorporating) can be used in lieu of a tackifier.

- Methods for holding the straw mulch in place depend upon the slope steepness, accessibility, soil conditions, and longevity.

  - A tackifier acts to glue the straw fibers together and to the soil surface. The tackifier should be selected based on longevity and ability to hold the fibers in place. A tackifier is typically applied at a rate of 125 lb/acre. In windy conditions, the rates are typically 180 lb/acre.

  - On very small areas, a spade or shovel can be used to punch in straw mulch.

  - On slopes with soils that are stable enough and of sufficient gradient to safely support construction equipment without contributing to compaction and instability problems, straw can be "punched" into the ground using a knife blade roller or a straight bladed coulter, known commercially as a "crimper."

Costs

Average annual cost for installation and maintenance is included in the table below. Application by hand is more time intensive and potentially more costly.

BMP	Unit Cost per Acre
Straw mulch, crimped or punched	$2,458-$5,375
Straw mulch with tackifier	$1,823-$4,802

Source: Cost information received from individual product suppliers solicited by Geosyntec Consultants (2004).

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.

- Areas where erosion is evident should be repaired and BMPs re-applied as soon as possible. Care should be exercised to minimize the damage to protected areas while making repairs, as any area damaged will require re-application of BMPs.

- The key consideration in inspection and maintenance is that the straw needs to last long enough to achieve erosion control objectives. Straw mulch as a stand-alone BMP is temporary and is not suited for long-term erosion control.

- Maintain an unbroken, temporary mulched ground cover while disturbed soil areas are inactive. Repair any damaged ground cover and re-mulch exposed areas.

- Reapplication of straw mulch and tackifier may be required to maintain effective soil stabilization over disturbed areas and slopes.

References

Soil Stabilization BMP Research for Erosion and Sediment Controls: Cost Survey Technical Memorandum, State of California Department of Transportation (Caltrans), July 2007.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.

Controlling Erosion of Construction Sites, Agricultural Information Bulletin #347, U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) (formerly Soil Conservation Service – SCS).

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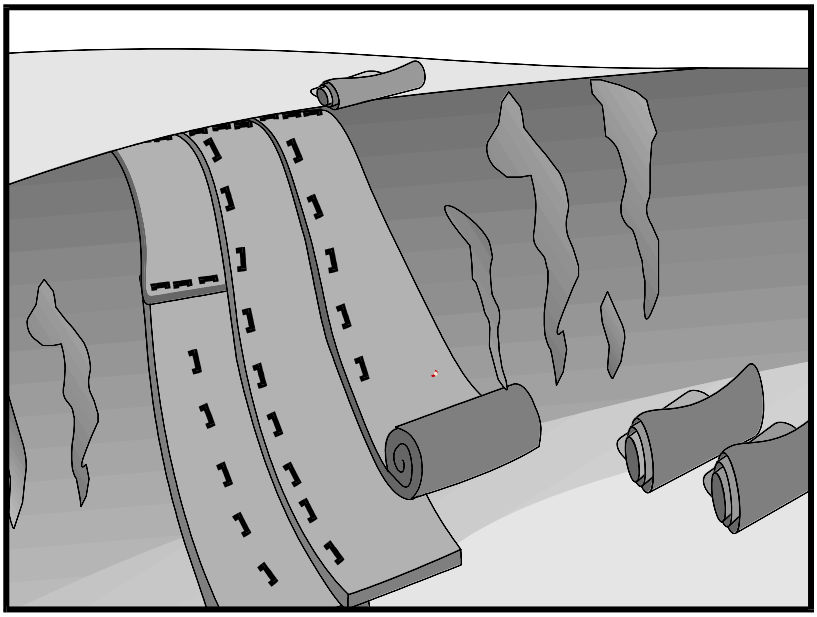
Soil Erosion by Water, Agricultural Information Bulletin #513, U.S. Department of Agriculture, Soil Conservation Service.

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Geotextiles and Mats EC-7



Categories		
EC	Erosion Control	☑
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	☒
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ **Primary Category**
☒ **Secondary Category**

Targeted Constituents	
Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

EC-3 Hydraulic Mulch

EC-4 Hydroseeding

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Description and Purpose

Mattings, or Rolled Erosion Control Products (RECPs), can be made of natural or synthetic materials or a combination of the two. RECPs are used to cover the soil surface to reduce erosion from rainfall impact, hold soil in place, and absorb and hold moisture near the soil surface. Additionally, RECPs may be used to stabilize soils until vegetation is established or to reinforce non-woody surface vegetation.

Suitable Applications

RECPs are typically applied on slopes where erosion hazard is high and vegetation will be slow to establish. Mattings are also used on stream banks, swales and other drainage channels where moving water at velocities between 3 ft/s and 6 ft/s are likely to cause scour and wash out new vegetation, and in areas where the soil surface is disturbed and where existing vegetation has been removed. RECPs may also be used when seeding cannot occur (e.g., late season construction and/or the arrival of an early rain season). RECPs should be considered when the soils are fine grained and potentially erosive. RECPs should be considered in the following situations.

- Steep slopes, generally steeper than 3:1 (H:V)
- Slopes where the erosion potential is high
- Slopes and disturbed soils where mulch must be anchored
- Disturbed areas where plants are slow to develop

- Channels with flows exceeding 3.3 ft/s
- Channels to be vegetated
- Stockpiles
- Slopes adjacent to water bodies

Limitations

- RECP installed costs are generally higher than other erosion control BMPs, limiting their use to areas where other BMPs are ineffective (e.g. channels, steep slopes).
- RECPs may delay seed germination, due to reduction in soil temperature.
- RECPs are generally not suitable for excessively rocky sites or areas where the final vegetation will be mowed (since staples and netting can catch in mowers). If a staple or pin cannot be driven into the soil because the underlying soil is too hard or rocky, then an alternative BMP should be selected.
- If used for temporary erosion control, RECPs should be removed and disposed of prior to application of permanent soil stabilization measures.
- The use of plastic should be limited to covering stockpiles or very small graded areas for short periods of time (such as through one imminent storm event) until more environmentally friendly measures, such as seeding and mulching, may be installed.
    - Plastic sheeting is easily vandalized, easily torn, photodegradable, and must be disposed of at a landfill.
    - Plastic sheeting results in 100% runoff, which may cause serious erosion problems in the areas receiving the increased flow.
- RECPs may have limitations based on soil type, slope gradient, or channel flow rate; consult the manufacturer for proper selection.
- Not suitable for areas that have foot traffic (tripping hazard) – e.g., pad areas around buildings under construction.
- RECPs that incorporate a plastic netting (e.g. straw blanket typically uses a plastic netting to hold the straw in place) may not be suitable near known wildlife habitat. Wildlife can become trapped in the plastic netting.
- RECPs may have limitations in extremely windy climates. However, when RECPs are properly trenched at the top and bottom and stapled in accordance with the manufacturer's recommendations, problems with wind can be minimized.

Implementation

Material Selection

- Natural RECPs have been found to be effective where re-vegetation will be provided by re-seeding. The choice of material should be based on the size of area, side slopes, surface conditions such as hardness, moisture, weed growth, and availability of materials.

- Additional guidance on the comparison and selection of temporary slope stabilization methods is provided in Appendix F of the Handbook.

- The following natural and synthetic RECPs are commonly used:

Geotextiles

- Material can be a woven or a non-woven polypropylene fabric with minimum thickness of 0.06 in., minimum width of 12 ft and should have minimum tensile strength of 150 lbs (warp), 80 lbs (fill) in conformance with the requirements in ASTM Designation: D 4632. The permittivity of the fabric should be approximately 0.07 sec^{-1} in conformance with the requirements in ASTM Designation: D4491. The fabric should have an ultraviolet (UV) stability of 70 percent in conformance with the requirements in ASTM designation: D4355. Geotextile blankets must be secured in place with wire staples or sandbags and by keying into tops of slopes to prevent infiltration of surface waters under geotextile. Staples should be made of minimum 11 gauge steel wire and should be U-shaped with 8 in. legs and 2 in. crown.

- Geotextiles may be reused if they are suitable for the use intended.

Plastic Covers

- Generally plastic sheeting should only be used as stockpile covering or for very small graded areas for short periods of time (such as through one imminent storm event). If plastic sheeting must be used, choose a plastic that will withstand photo degradation.

- Plastic sheeting should have a minimum thickness of 6 mils, and must be keyed in at the top of slope (when used as a temporary slope protection) and firmly held in place with sandbags or other weights placed no more than 10 ft apart. Seams are typically taped or weighted down their entire length, and there should be at least a 12 in. to 24 in. overlap of all seams. Edges should be embedded a minimum of 6 in. in soil (when used as a temporary slope protection).

- All sheeting must be inspected periodically after installation and after significant rainstorms to check for erosion, undermining, and anchorage failure. Any failures must be repaired immediately. If washout or breakages occur, the material should be re-installed after repairing the damage to the slope.

Erosion Control Blankets/Mats

- Biodegradable RECPs are typically composed of jute fibers, curled wood fibers, straw, coconut fiber, or a combination of these materials. In order for an RECP to be considered 100% biodegradable, the netting, sewing or adhesive system that holds the biodegradable mulch fibers together must also be biodegradable. See typical installation details at the end of this fact sheet.

- **Jute** is a natural fiber that is made into a yarn that is loosely woven into a biodegradable mesh. The performance of jute as a stand-alone RECP is low. Most other RECPs outperform jute as a temporary erosion control product and therefore jute is not commonly used. It is designed to be used in conjunction with vegetation. The material is supplied in rolled strips, which should be secured to the soil with U-shaped staples or stakes in accordance with manufacturers' recommendations.

- **Excelsior** (curled wood fiber) blanket material should consist of machine produced mats of curled wood excelsior with 80 percent of the fiber 6 in. or longer. The excelsior blanket should be of consistent thickness. The wood fiber must be evenly distributed over the entire area of the blanket. The top surface of the blanket should be covered with a photodegradable extruded plastic mesh. The blanket should be smolder resistant without the use of chemical additives and should be non-toxic and non-injurious to plant and animal life. Excelsior blankets should be furnished in rolled strips, a minimum of 48 in. wide, and should have an average weight of 0.8 lb/yd^2, ±10 percent, at the time of manufacture. Excelsior blankets must be secured in place with wire staples. Staples should be made of minimum 11 gauge steel wire and should be U-shaped with 8 in. legs and 2 in. crown.

- **Straw blanket** should be machine produced mats of straw with a lightweight biodegradable netting top layer. The straw should be attached to the netting with biodegradable thread or glue strips. The straw blanket should be of consistent thickness. The straw should be evenly distributed over the entire area of the blanket. Straw blanket should be furnished in rolled strips a minimum of 6.5 ft wide, a minimum of 80 ft long and a minimum of 0.5 lb/yd^2. Straw blankets must be secured in place with wire staples. Staples should be made of minimum 11 gauge steel wire and should be U-shaped with 8 in. legs and 2 in. crown.

- **Wood fiber blanket** is composed of biodegradable fiber mulch with extruded plastic netting held together with adhesives. The material is designed to enhance re-vegetation. The material is furnished in rolled strips, which must be secured to the ground with U-shaped staples or stakes in accordance with manufacturers' recommendations.

- **Coconut fiber blanket** should be a machine produced mat of 100 percent coconut fiber with biodegradable netting on the top and bottom. The coconut fiber should be attached to the netting with biodegradable thread or glue strips. The coconut fiber blanket should be of consistent thickness. The coconut fiber should be evenly distributed over the entire area of the blanket. Coconut fiber blanket should be furnished in rolled strips with a minimum of 6.5 ft wide, a minimum of 80 ft. long and a minimum of 0.5 lb/yd^2. Coconut fiber blankets must be secured in place with wire staples. Staples should be made of minimum 11 gauge steel wire and should be U-shaped with 8 in. legs and 2 in. crown.

- **Coconut fiber mesh** is a thin permeable membrane made from coconut or corn fiber that is spun into a yarn and woven into a biodegradable mat. It is designed to be used in conjunction with vegetation and typically has longevity of several years. The material is supplied in rolled strips, which must be secured to the soil with U-shaped staples or stakes in accordance with manufacturers' recommendations.

- **Straw coconut fiber blanket** should be machine produced mats of 70 percent straw and 30 percent coconut fiber with a biodegradable netting top layer and a biodegradable bottom net. The straw and coconut fiber should be attached to the netting with biodegradable thread or glue strips. The straw coconut fiber blanket should be of consistent thickness. The straw and coconut fiber should be evenly distributed over the entire area of the blanket. Straw coconut fiber blanket should be furnished in rolled strips a minimum of 6.5 ft wide, a minimum of 80 ft long and a minimum of 0.5 lb/yd^2. Straw coconut fiber blankets must be secured in place with wire staples. Staples should be made of minimum 11 gauge steel wire and should be U-shaped with 8 in. legs and 2 in. crown.

- Non-biodegradable RECPs are typically composed of polypropylene, polyethylene, nylon or other synthetic fibers. In some cases, a combination of biodegradable and synthetic fibers is used to construct the RECP. Netting used to hold these fibers together is typically non-biodegradable as well.

  - **Plastic netting** is a lightweight biaxially oriented netting designed for securing loose mulches like straw or paper to soil surfaces to establish vegetation. The netting is photodegradable. The netting is supplied in rolled strips, which must be secured with U-shaped staples or stakes in accordance with manufacturers' recommendations.

  - **Plastic mesh** is an open weave geotextile that is composed of an extruded synthetic fiber woven into a mesh with an opening size of less than ¼ in. It is used with re-vegetation or may be used to secure loose fiber such as straw to the ground. The material is supplied in rolled strips, which must be secured to the soil with U-shaped staples or stakes in accordance with manufacturers' recommendations.

  - **Synthetic fiber with netting** is a mat that is composed of durable synthetic fibers treated to resist chemicals and ultraviolet light. The mat is a dense, three dimensional mesh of synthetic (typically polyolefin) fibers stitched between two polypropylene nets. The mats are designed to be re-vegetated and provide a permanent composite system of soil, roots, and geomatrix. The material is furnished in rolled strips, which must be secured with U-shaped staples or stakes in accordance with manufacturers' recommendations.

  - **Bonded synthetic fibers** consist of a three dimensional geomatrix nylon (or other synthetic) matting. Typically it has more than 90 percent open area, which facilitates root growth. It's tough root reinforcing system anchors vegetation and protects against hydraulic lift and shear forces created by high volume discharges. It can be installed over prepared soil, followed by seeding into the mat. Once vegetated, it becomes an invisible composite system of soil, roots, and geomatrix. The material is furnished in rolled strips that must be secured with U-shaped staples or stakes in accordance with manufacturers' recommendations.

  - **Combination synthetic and biodegradable RECPs** consist of biodegradable fibers, such as wood fiber or coconut fiber, with a heavy polypropylene net stitched to the top and a high strength continuous filament geomatrix or net stitched to the bottom. The material is designed to enhance re-vegetation. The material is furnished in rolled strips,

which must be secured with U-shaped staples or stakes in accordance with manufacturers' recommendations.

Site Preparation

- Proper soil preparation is essential to ensure complete contact of the RECP with the soil. Soil Roughening is not recommended in areas where RECPs will be installed.
- Grade and shape the area of installation.
- Remove all rocks, clods, vegetation or other obstructions so that the installed blankets or mats will have complete, direct contact with the soil.
- Prepare seedbed by loosening 2 to 3 in. of topsoil.

Seeding/Planting

Seed the area before blanket installation for erosion control and re-vegetation. Seeding after mat installation is often specified for turf reinforcement application. When seeding prior to blanket installation, all areas disturbed during blanket installation must be re-seeded. Where soil filling is specified for turf reinforcement mats (TRMs), seed the matting and the entire disturbed area after installation and prior to filling the mat with soil.

Fertilize and seed in accordance with seeding specifications or other types of landscaping plans. The protective matting can be laid over areas where grass has been planted and the seedlings have emerged. Where vines or other ground covers are to be planted, lay the protective matting first and then plant through matting according to design of planting.

Check Slots

Check slots shall be installed as required by the manufacturer.

Laying and Securing Matting

- Before laying the matting, all check slots should be installed and the seedbed should be friable, made free from clods, rocks, and roots. The surface should be compacted and finished according to the requirements of the manufacturer's recommendations.
- Mechanical or manual lay down equipment should be capable of handling full rolls of fabric and laying the fabric smoothly without wrinkles or folds. The equipment should meet the fabric manufacturer's recommendations or equivalent standards.

Anchoring

- U-shaped wire staples, metal geotextile stake pins, or triangular wooden stakes can be used to anchor mats and blankets to the ground surface.
- Wire staples should be made of minimum 11 gauge steel wire and should be U-shaped with 8 in. legs and 2 in. crown.
- Metal stake pins should be 0.188 in. diameter steel with a 1.5 in. steel washer at the head of the pin, and 8 in. in length.
- Wire staples and metal stakes should be driven flush to the soil surface.

Installation on Slopes

Installation should be in accordance with the manufacturer's recommendations. In general, these will be as follows:

- Begin at the top of the slope and anchor the blanket in a 6 in. deep by 6 in. wide trench. Backfill trench and tamp earth firmly.
- Unroll blanket down slope in the direction of water flow.
- Overlap the edges of adjacent parallel rolls 2 to 3 in. and staple every 3 ft (or greater, per manufacturer's specifications).
- When blankets must be spliced, place blankets end over end (shingle style) with 6 in. overlap. Staple through overlapped area, approximately 12 in. apart.
- Lay blankets loosely and maintain direct contact with the soil. Do not stretch.
- Staple blankets sufficiently to anchor blanket and maintain contact with the soil. Staples should be placed down the center and staggered with the staples placed along the edges. Steep slopes, 1:1 (H:V) to 2:1 (H:V), require a minimum of 2 staples/yd^2. Moderate slopes, 2:1 (H:V) to 3:1 (H:V), require a minimum of 1 ½ staples/yd^2. Check manufacturer's specifications to determine if a higher density staple pattern is required.

Installation in Channels

Installation should be in accordance with the manufacturer's recommendations. In general, these will be as follows:

- Dig initial anchor trench 12 in. deep and 6 in. wide across the channel at the lower end of the project area.
- Excavate intermittent check slots, 6 in. deep and 6 in. wide across the channel at 25 to 30 ft intervals along the channels.
- Cut longitudinal channel anchor trenches 4 in. deep and 4 in. wide along each side of the installation to bury edges of matting, whenever possible extend matting 2 to 3 in. above the crest of the channel side slopes.
- Beginning at the downstream end and in the center of the channel, place the initial end of the first roll in the anchor trench and secure with fastening devices at 12 in. intervals. Note: matting will initially be upside down in anchor trench.
- In the same manner, position adjacent rolls in anchor trench, overlapping the preceding roll a minimum of 3 in.
- Secure these initial ends of mats with anchors at 12 in. intervals, backfill and compact soil.
- Unroll center strip of matting upstream. Stop at next check slot or terminal anchor trench. Unroll adjacent mats upstream in similar fashion, maintaining a 3 in. overlap.

- Fold and secure all rolls of matting snugly into all transverse check slots. Lay mat in the bottom of the slot then fold back against itself. Anchor through both layers of mat at 12 in. intervals, then backfill and compact soil. Continue rolling all mat widths upstream to the next check slot or terminal anchor trench.
- Alternate method for non-critical installations: Place two rows of anchors on 6 in. centers at 25 to 30 ft. intervals in lieu of excavated check slots.
- Staple shingled lap spliced ends a minimum of 12 in. apart on 12 in. intervals.
- Place edges of outside mats in previously excavated longitudinal slots; anchor using prescribed staple pattern, backfill, and compact soil.
- Anchor, fill, and compact upstream end of mat in a 12 in. by 6 in. terminal trench.
- Secure mat to ground surface using U-shaped wire staples, geotextile pins, or wooden stakes.
- Seed and fill turf reinforcement matting with soil, if specified.

Soil Filling (if specified for turf reinforcement mat (TRM))

Installation should be in accordance with the manufacturer's recommendations. Typical installation guidelines are as follows:

- After seeding, spread and lightly rake ½-3/4 inches of fine topsoil into the TRM apertures to completely fill TRM thickness. Use backside of rake or other flat implement.
- Alternatively, if allowed by product specifications, spread topsoil using lightweight loader, backhoe, or other power equipment. Avoid sharp turns with equipment.
- Always consult the manufacturer's recommendations for installation.
- Do not drive tracked or heavy equipment over mat.
- Avoid any traffic over matting if loose or wet soil conditions exist.
- Use shovels, rakes, or brooms for fine grading and touch up.
- Smooth out soil filling just exposing top netting of mat.

Temporary Soil Stabilization Removal

- Temporary soil stabilization removed from the site of the work must be disposed of if necessary.

Costs

Installed costs can be relatively high compared to other BMPs. Approximate costs for installed materials are shown below:

Rolled Erosion Control Products		Installed Cost per Acre (2004)[1]	Estimated Cost per Acre (2009)[2]
Biodegradable	Jute Mesh	$6,000-$7,000	$6,600-$7,700
	Curled Wood Fiber	$8,000-$10,500	$8,800-$11,050
	Straw	$8,000-$10,500	$8,800-$11,050
	Wood Fiber	$8,000-$10,500	$8,800-$11,050
	Coconut Fiber	$13,000-$14,000	$14,300-$15,400
	Coconut Fiber Mesh	$30,000-$33,000	$33,000-$36,300
	Straw Coconut Fiber	$10,000-$12,000	$11,000-$13,200
Non-Biodegradable	Plastic Netting	$2,000-$2,200	$2,200-$2,220
	Plastic Mesh	$3,000-$3,500	$3,300-$3,850
	Synthetic Fiber with Netting	$34,000-$40,000	$37,400-$44,000
	Bonded Synthetic Fibers	$45,000-$55,000	$49,500-$60,500
	Combination with Biodegradable	$30,000-$36,000	$33,000-$39,600

1. Source: Cost information received from individual product manufacturers solicited by Geosyntec Consultants (2004).
2. 2009 costs reflect a 10% escalation over year 2004 costs. Escalation based on informal survey of industry trends. Note: Expected cost increase is offset by competitive economic conditions.

Inspection and Maintenance

- RECPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Areas where erosion is evident shall be repaired and BMPs reapplied as soon as possible. Care should be exercised to minimize the damage to protected areas while making repairs, as any area damaged will require reapplication of BMPs.
- If washout or breakage occurs, re-install the material after repairing the damage to the slope or channel.
- Make sure matting is uniformly in contact with the soil.
- Check that all the lap joints are secure.
- Check that staples are flush with the ground.

References

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005

Erosion Control Pilot Study Report, State of California Department of Transportation (Caltrans), June 2000.

Guides for Erosion and Sediment Controls in California, USDA Soils Conservation Service, January 1991.

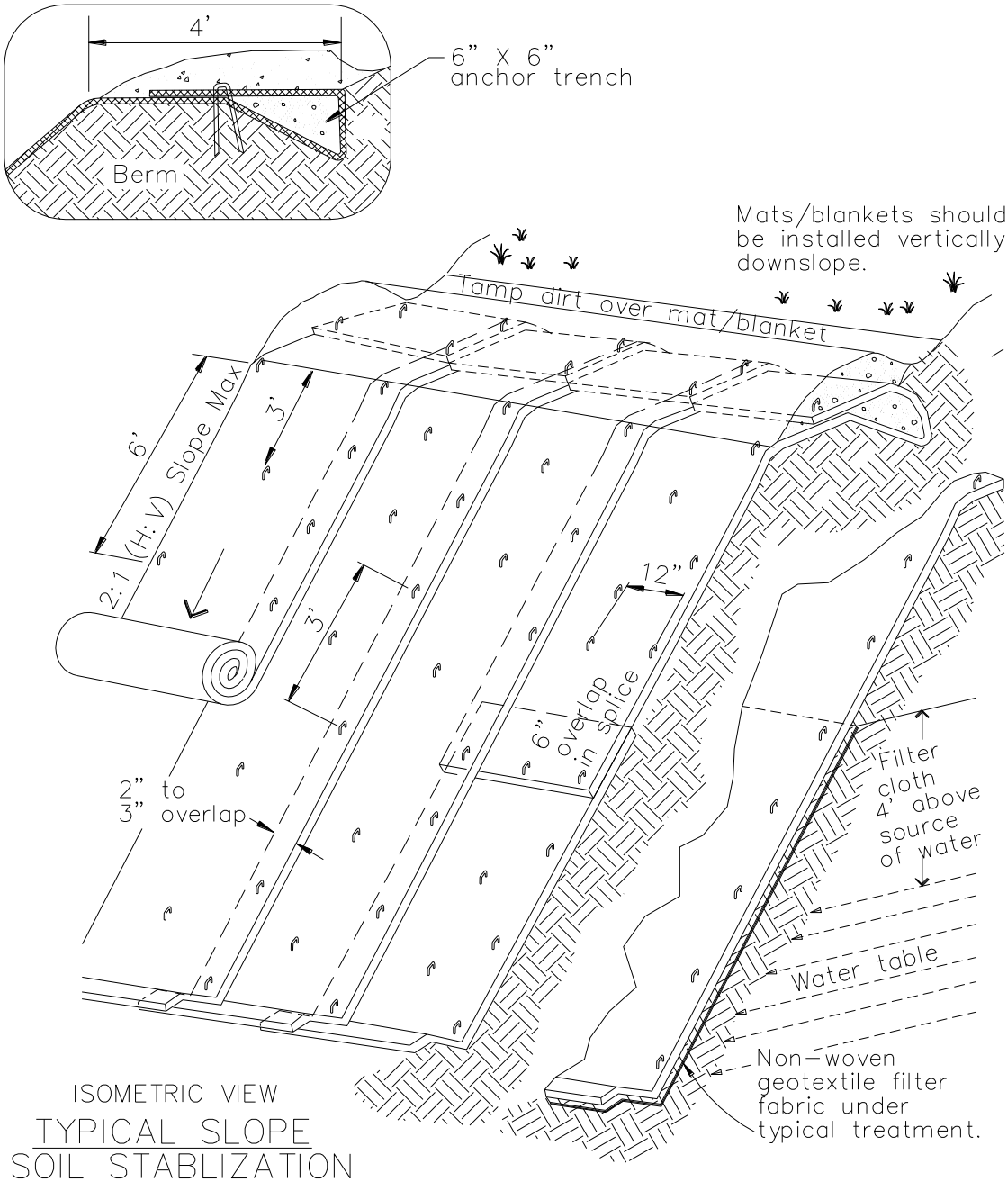
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ISOMETRIC VIEW

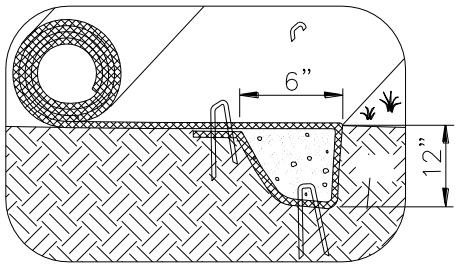
TYPICAL SLOPE
SOIL STABLIZATION
NTS

WET SLOPE LINING
NTS

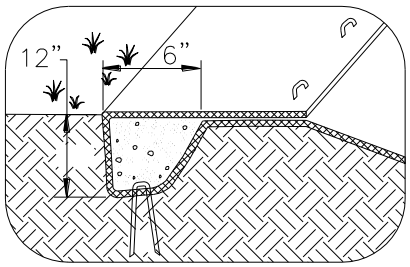
NOTES:

1. Slope surface shall be free of rocks, clods, sticks and grass. Mats/blankets shall have good soil contact.
2. Lay blankets loosely and stake or staple to maintain direct contact with the soil. Do not stretch.
3. Install per manufacturer's recommendations

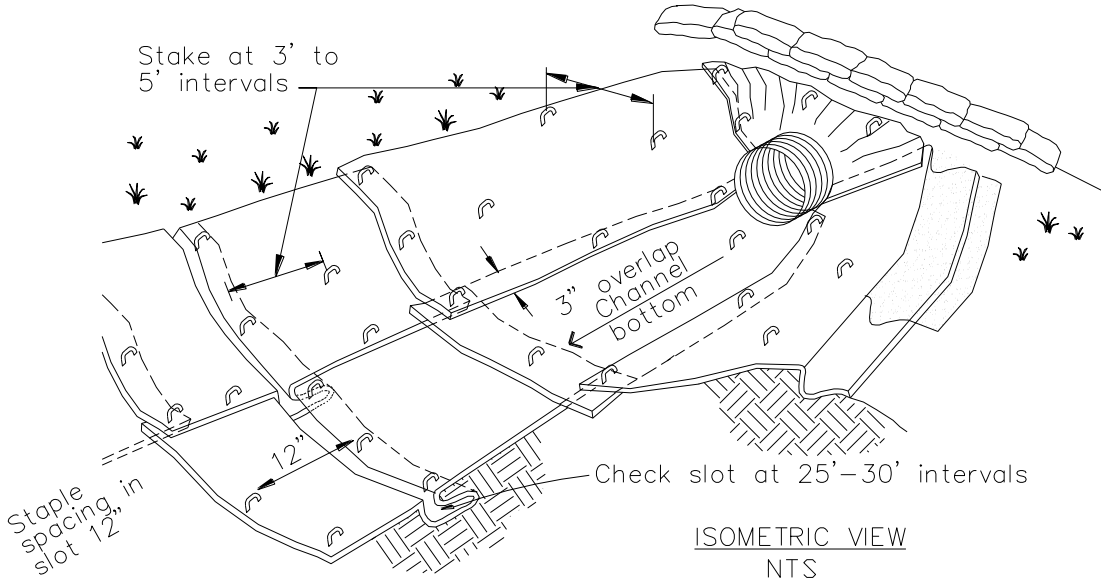
TYPICAL INSTALLATION DETAIL



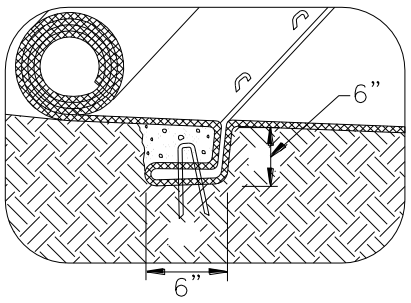
INITIAL CHANNEL ANCHOR TRENCH
NTS



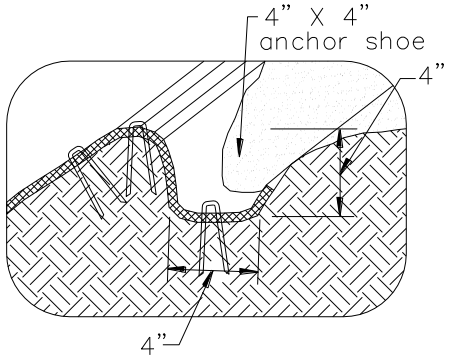
TERMINAL SLOPE AND CHANNEL ANCHOR TRENCH
NTS



ISOMETRIC VIEW
NTS



INTERMITTENT CHECK SLOT
NTS



LONGITUDINAL ANCHOR TRENCH
NTS

NOTES:
1. Check slots to be constructed per manufacturers specifications.
2. Staking or stapling layout per manufacturers specifications.
3. Install per manufacturer's recommendations

TYPICAL INSTALLATION DETAIL

Wood Mulching EC-8



Categories

EC	Erosion Control	☑
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	☒
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ Primary Objective
☒ Secondary Objective

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

EC-3 Hydraulic Mulch
EC-4 Hydroseeding
EC-5 Soil Binders
EC-6 Straw Mulch
EC-7 Geotextiles and Mats

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Description and Purpose

Wood mulching consists of applying a mixture of shredded wood mulch, bark or compost to disturbed soils. The primary function of wood mulching is to reduce erosion by protecting bare soil from rainfall impact, increasing infiltration, and reducing runoff.

Suitable Applications

Wood mulching is suitable for disturbed soil areas requiring temporary protection until permanent stabilization is established.

Limitations

- Not suitable for use on slopes steeper than 3:1 (H:V). Best suited to flat areas or gentle slopes or 5:1 (H:V) or flatter.
- Wood mulch and compost may introduce unwanted species.
- Not suitable for areas exposed to concentrated flows.
- May need to be removed prior to further earthwork.

Implementation

Mulch Selection

There are many types of mulches. Selection of the appropriate type of mulch should be based on the type of application, site conditions, and compatibility with planned or future uses.

Application Procedures

Prior to application, after existing vegetation has been removed, roughen embankment and fill areas by rolling with a device such as a punching type roller or by track walking. The construction application procedures for mulches vary significantly depending upon the type of mulching method specified. Two methods are highlighted here:

- Green Material: This type of mulch is produced by the recycling of vegetation trimmings such as grass, shredded shrubs, and trees. Methods of application are generally by hand although pneumatic methods are available.
  - Green material can be used as a temporary ground cover with or without seeding.
  - The green material should be evenly distributed on site to a depth of not more than 2 in.
- Shredded Wood: Suitable for ground cover in ornamental or revegetated plantings.
  - Shredded wood/bark is conditionally suitable. See note under limitations.
  - Distribute by hand or use pneumatic methods.
  - Evenly distribute the mulch across the soil surface to a depth of 2 to 3 in.
- Avoid mulch placement onto roads, sidewalks, drainage channels, existing vegetation, etc.

Costs

Average annual cost for installation and maintenance (3-4 months useful life) is around $4,000 per acre, but cost can increase if the source is not close to the project site.

Inspection and Maintenance

- Inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Areas where erosion is evident shall be repaired and BMPs reapplied as soon as possible. Care should be exercised to minimize the damage to protected areas while making repairs, as any area damaged will require reapplication of BMPs.
- Regardless of the mulching technique selected, the key consideration in inspection and maintenance is that the mulch needs to last long enough to achieve erosion control objectives. If the mulch is applied as a stand alone erosion control method over disturbed areas (without seed), it should last the length of time the site will remain barren or until final re-grading and revegetation.
- Where vegetation is not the ultimate cover, such as ornamental and landscape applications of bark or wood chips, inspection and maintenance should focus on longevity and integrity of the mulch.
- Reapply mulch when bare earth becomes visible.

References

Controlling Erosion of Construction Sites Agriculture Information Bulletin #347, U.S. Department of Agriculture (USDA), Natural Resources Conservation Service (NRCS) (formerly Soil Conservation Service – SCS).

Guides for Erosion and Sediment Control in California, USDA Soils Conservation Service, January 1991.

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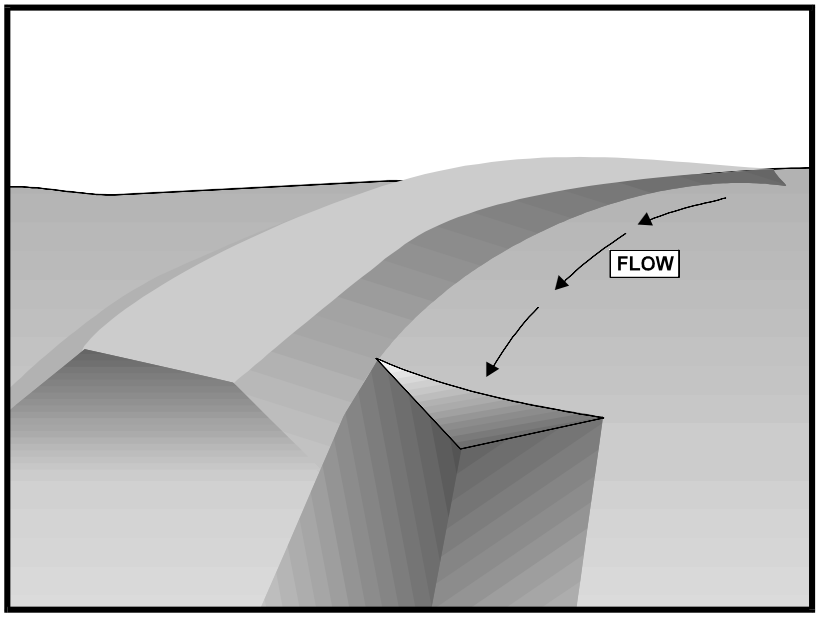
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Earth Dikes and Drainage Swales EC-9



Description and Purpose

An earth dike is a temporary berm or ridge of compacted soil used to divert runoff or channel water to a desired location. A drainage swale is a shaped and sloped depression in the soil surface used to convey runoff to a desired location. Earth dikes and drainage swales are used to divert off site runoff around the construction site, divert runoff from stabilized areas and disturbed areas, and direct runoff into sediment basins or traps.

Suitable Applications

Earth dikes and drainage swales are suitable for use, individually or together, where runoff needs to be diverted from one area and conveyed to another.

- Earth dikes and drainage swales may be used:
  - To convey surface runoff down sloping land
  - To intercept and divert runoff to avoid sheet flow over sloped surfaces
  - To divert and direct runoff towards a stabilized watercourse, drainage pipe or channel
  - To intercept runoff from paved surfaces
  - Below steep grades where runoff begins to concentrate
  - Along roadways and facility improvements subject to flood drainage

Categories

EC	Erosion Control	☑
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None

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- At the top of slopes to divert runon from adjacent or undisturbed slopes
- At bottom and mid slope locations to intercept sheet flow and convey concentrated flows
- Divert sediment laden runoff into sediment basins or traps

Limitations

Dikes should not be used for drainage areas greater than 10 acres or along slopes greater than 10 percent. For larger areas more permanent drainage structures should be built. All drainage structures should be built in compliance with local municipal requirements.

- Earth dikes may create more disturbed area on site and become barriers to construction equipment.
- Earth dikes must be stabilized immediately, which adds cost and maintenance concerns.
- Diverted stormwater may cause downstream flood damage.
- Dikes should not be constructed of soils that may be easily eroded.
- Regrading the site to remove the dike may add additional cost.
- Temporary drains and swales or any other diversion of runoff should not adversely impact upstream or downstream properties.
- Temporary drains and swales must conform to local floodplain management requirements.
- Earth dikes/drainage swales are not suitable as sediment trapping devices.
- It may be necessary to use other soil stabilization and sediment controls such as check dams, plastics, and blankets, to prevent scour and erosion in newly graded dikes, swales, and ditches.
- Sediment accumulation, scour depressions, and/or persistent non-stormwater discharges can result in areas of standing water suitable for mosquito production in drainage swales.

Implementation

The temporary earth dike is a berm or ridge of compacted soil, located in such a manner as to divert stormwater to a sediment trapping device or a stabilized outlet, thereby reducing the potential for erosion and offsite sedimentation. Earth dikes can also be used to divert runoff from off site and from undisturbed areas away from disturbed areas and to divert sheet flows away from unprotected slopes.

An earth dike does not itself control erosion or remove sediment from runoff. A dike prevents erosion by directing runoff to an erosion control device such as a sediment trap or directing runoff away from an erodible area. Temporary diversion dikes should not adversely impact adjacent properties and must conform to local floodplain management regulations, and should not be used in areas with slopes steeper than 10%.

Slopes that are formed during cut and fill operations should be protected from erosion by runoff. A combination of a temporary drainage swale and an earth dike at the top of a slope can divert

runoff to a location where it can be brought to the bottom of the slope (see EC-11, Slope Drains). A combination dike and swale is easily constructed by a single pass of a bulldozer or grader and compacted by a second pass of the tracks or wheels over the ridge. Diversion structures should be installed when the site is initially graded and remain in place until post construction BMPs are installed and the slopes are stabilized.

Diversion practices concentrate surface runoff, increasing its velocity and erosive force. Thus, the flow out of the drain or swale must be directed onto a stabilized area or into a grade stabilization structure. If significant erosion will occur, a swale should be stabilized using vegetation, chemical treatment, rock rip-rap, matting, or other physical means of stabilization. Any drain or swale that conveys sediment laden runoff must be diverted into a sediment basin or trap before it is discharged from the site.

General

- Care must be applied to correctly size and locate earth dikes, drainage swales. Excessively steep, unlined dikes, and swales are subject to erosion and gully formation.
- Conveyances should be stabilized.
- Use a lined ditch for high flow velocities.
- Select flow velocity based on careful evaluation of the risks due to erosion of the measure, soil types, overtopping, flow backups, washout, and drainage flow patterns for each project site.
- Compact any fills to prevent unequal settlement.
- Do not divert runoff onto other property without securing written authorization from the property owner.
- When possible, install and utilize permanent dikes, swales, and ditches early in the construction process.
- Provide stabilized outlets.

Earth Dikes

Temporary earth dikes are a practical, inexpensive BMP used to divert stormwater runoff. Temporary diversion dikes should be installed in the following manner:

- All dikes should be compacted by earth moving equipment.
- All dikes should have positive drainage to an outlet.
- All dikes should have 2:1 or flatter side slopes, 18 in. minimum height, and a minimum top width of 24 in. Wide top widths and flat slopes are usually needed at crossings for construction traffic.
- The outlet from the earth dike must function with a minimum of erosion. Runoff should be conveyed to a sediment trapping device such as a Sediment Trap (SE-3) or Sediment Basin

(SE-2) when either the dike channel or the drainage area above the dike are not adequately stabilized.

- Temporary stabilization may be achieved using seed and mulching for slopes less than 5% and either rip-rap or sod for slopes in excess of 5%. In either case, stabilization of the earth dike should be completed immediately after construction or prior to the first rain.
- If riprap is used to stabilize the channel formed along the toe of the dike, the following typical specifications apply:

Channel Grade	Riprap Stabilization
0.5-1.0%	4 in. Rock
1.1-2.0%	6 in. Rock
2.1-4.0%	8 in. Rock
4.1-5.0%	8 in. -12 in. Riprap

- The stone riprap, recycled concrete, etc. used for stabilization should be pressed into the soil with construction equipment.
- Filter cloth may be used to cover dikes in use for long periods.
- Construction activity on the earth dike should be kept to a minimum.

Drainage Swales

Drainage swales are only effective if they are properly installed. Swales are more effective than dikes because they tend to be more stable. The combination of a swale with a dike on the downhill side is the most cost effective diversion.

Standard engineering design criteria for small open channel and closed conveyance systems should be used (see the local drainage design manual). Unless local drainage design criteria state otherwise, drainage swales should be designed as follows:

- No more than 5 acres may drain to a temporary drainage swale.
- Place drainage swales above or below, not on, a cut or fill slope.
- Swale bottom width should be at least 2 ft
- Depth of the swale should be at least 18 in.
- Side slopes should be 2:1 or flatter.
- Drainage or swales should be laid at a grade of at least 1 percent, but not more than 15 percent.
- The swale must not be overtopped by the peak discharge from a 10-year storm, irrespective of the design criteria stated above.

- Remove all trees, stumps, obstructions, and other objectionable material from the swale when it is built.
- Compact any fill material along the path of the swale.
- Stabilize all swales immediately. Seed and mulch swales at a slope of less than 5 percent, and use rip-rap or sod for swales with a slope between 5 and 15 percent. For temporary swales, geotextiles and mats (EC-7) may provide immediate stabilization.
- Irrigation may be required to establish sufficient vegetation to prevent erosion.
- Do not operate construction vehicles across a swale unless a stabilized crossing is provided.
- Permanent drainage facilities must be designed by a professional engineer (see the local drainage design criteria for proper design).
- At a minimum, the drainage swale should conform to predevelopment drainage patterns and capacities.
- Construct the drainage swale with a positive grade to a stabilized outlet.
- Provide erosion protection or energy dissipation measures if the flow out of the drainage swale can reach an erosive velocity.

Costs

- Cost ranges from $15 to $55 per ft for both earthwork and stabilization and depends on availability of material, site location, and access.
- Small dikes: $2.50 - $6.50/linear ft; Large dikes: $2.50/$yd^3$.
- The cost of a drainage swale increases with drainage area and slope. Typical swales for controlling internal erosion are inexpensive, as they are quickly formed during routine earthwork.

Inspection and Maintenance

- Inspect BMPs prior to forecast rain, daily during extended rain events, after rain events, weekly during the rainy season, and at two-week intervals during the non-rainy season.
- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges occur.
- Inspect ditches and berms for washouts. Replace lost riprap, damaged linings or soil stabilizers as needed.
- Inspect channel linings, embankments, and beds of ditches and berms for erosion and accumulation of debris and sediment. Remove debris and sediment and repair linings and embankments as needed.
- Temporary conveyances should be completely removed as soon as the surrounding drainage area has been stabilized or at the completion of construction

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Erosion and Sediment Control Handbook, S.J. Goldman, K. Jackson, T.A. Bursetynsky, P.E., McGraw Hill Book Company, 1986.

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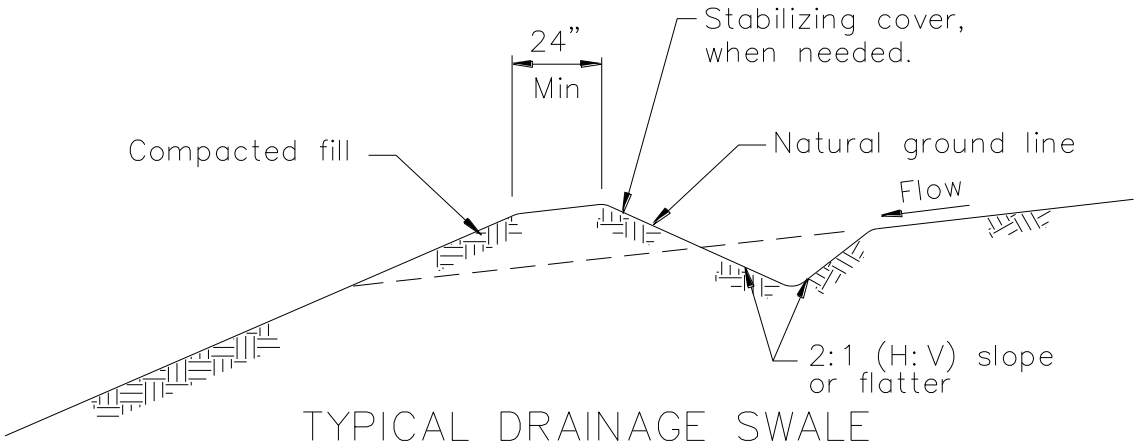
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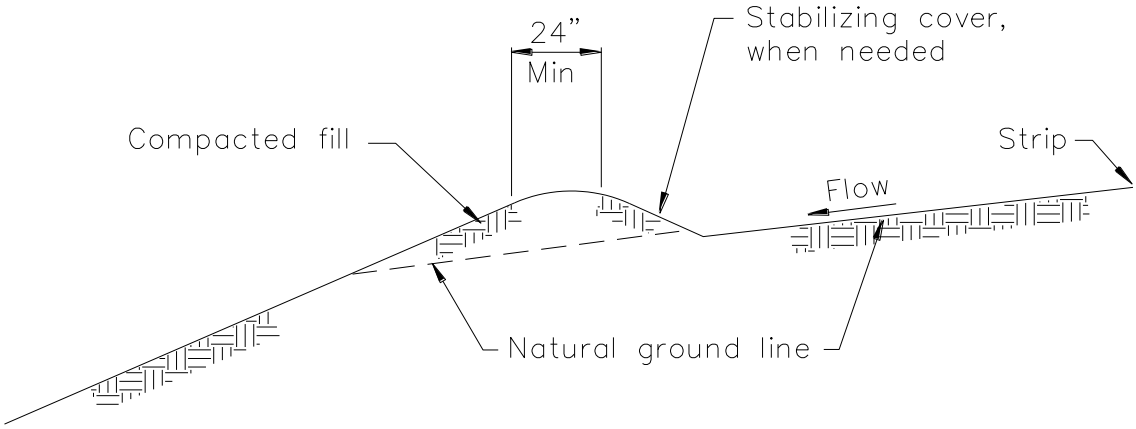
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TYPICAL DRAINAGE SWALE
NOT TO SCALE

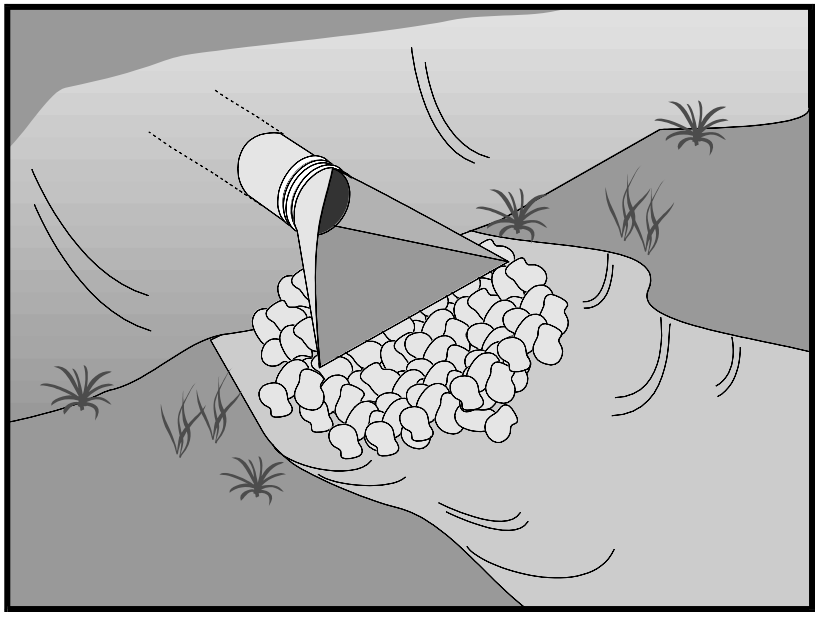
NOTES:

1. Stabilize inlet, outlets and slopes.
2. Properly compact the subgrade.



TYPICAL EARTH DIKE
NOT TO SCALE

Velocity Dissipation Devices EC-10



Description and Purpose

Outlet protection is a physical device composed of rock, grouted riprap, or concrete rubble, which is placed at the outlet of a pipe or channel to prevent scour of the soil caused by concentrated, high velocity flows.

Suitable Applications

Whenever discharge velocities and energies at the outlets of culverts, conduits, or channels are sufficient to erode the next downstream reach. This includes temporary diversion structures to divert runon during construction.

- These devices may be used at the following locations:
  - Outlets of pipes, drains, culverts, slope drains, diversion ditches, swales, conduits, or channels.
  - Outlets located at the bottom of mild to steep slopes.
  - Discharge outlets that carry continuous flows of water.
  - Outlets subject to short, intense flows of water, such as flash floods.
  - Points where lined conveyances discharge to unlined conveyances

Limitations

- Large storms or high flows can wash away the rock outlet protection and leave the area susceptible to erosion.

Categories

EC	Erosion Control	☑
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None

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- Sediment captured by the rock outlet protection may be difficult to remove without removing the rock.
- Outlet protection may negatively impact the channel habitat.
- Grouted riprap may break up in areas of freeze and thaw.
- If there is not adequate drainage, and water builds up behind grouted riprap, it may cause the grouted riprap to break up due to the resulting hydrostatic pressure.
- Sediment accumulation, scour depressions, and/or persistent non-stormwater discharges can result in areas of standing water suitable for mosquito production in velocity dissipation devices.

Implementation

General

Outlet protection is needed where discharge velocities and energies at the outlets of culverts, conduits or channels are sufficient to erode the immediate downstream reach. This practice protects the outlet from developing small eroded pools (plange pools), and protects against gully erosion resulting from scouring at a culvert mouth.

Design and Layout

As with most channel design projects, depth of flow, roughness, gradient, side slopes, discharge rate, and velocity should be considered in the outlet design. Compliance to local and state regulations should also be considered while working in environmentally sensitive streambeds. General recommendations for rock size and length of outlet protection mat are shown in the rock outlet protection figure in this BMP and should be considered minimums. The apron length and rock size gradation are determined using a combination of the discharge pipe diameter and estimate discharge rate: Select the longest apron length and largest rock size suggested by the pipe size and discharge rate. Where flows are conveyed in open channels such as ditches and swales, use the estimated discharge rate for selecting the apron length and rock size. Flows should be same as the culvert or channel design flow but never the less than the peak 5 year flow for temporary structures planned for one rainy season, or the 10 year peak flow for temporary structures planned for two or three rainy seasons.

- There are many types of energy dissipaters, with rock being the one that is represented in the attached figure.
- Best results are obtained when sound, durable, and angular rock is used.
- Install riprap, grouted riprap, or concrete apron at selected outlet. Riprap aprons are best suited for temporary use during construction. Grouted or wired tied rock riprap can minimize maintenance requirements.
- Rock outlet protection is usually less expensive and easier to install than concrete aprons or energy dissipaters. It also serves to trap sediment and reduce flow velocities.
- Carefully place riprap to avoid damaging the filter fabric.

- Stone 4 in. to 6 in. may be carefully dumped onto filter fabric from a height not to exceed 12 in.

- Stone 8 in. to 12 in. must be hand placed onto filter fabric, or the filter fabric may be covered with 4 in. of gravel and the 8 in. to 12 in. rock may be dumped from a height not to exceed 16 in.

- Stone greater than 12 in. shall only be dumped onto filter fabric protected with a layer of gravel with a thickness equal to one half the D_{50} rock size, and the dump height limited to twice the depth of the gravel protection layer thickness.

- For proper operation of apron: Align apron with receiving stream and keep straight throughout its length. If a curve is needed to fit site conditions, place it in upper section of apron.

- Outlets on slopes steeper than 10 percent should have additional protection.

Costs

Costs are low if material is readily available. If material is imported, costs will be higher. Average installed cost is $150 per device.

Inspection and Maintenance

- Inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.

- Inspect BMPs subjected to non-stormwater discharges daily while non-stormwater discharges occur. Minimize areas of standing water by removing sediment blockages and filling scour depressions.

- Inspect apron for displacement of the riprap and damage to the underlying fabric. Repair fabric and replace riprap that has washed away. If riprap continues to wash away, consider using larger material.

- Inspect for scour beneath the riprap and around the outlet. Repair damage to slopes or underlying filter fabric immediately.

- Temporary devices should be completely removed as soon as the surrounding drainage area has been stabilized or at the completion of construction.

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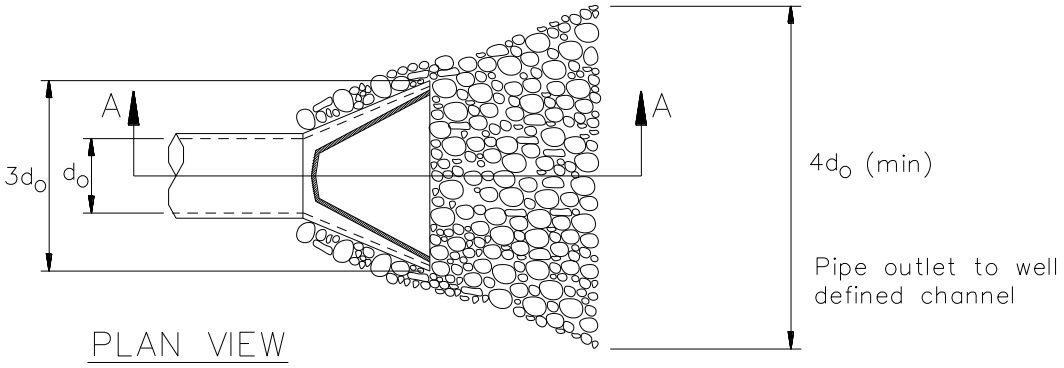
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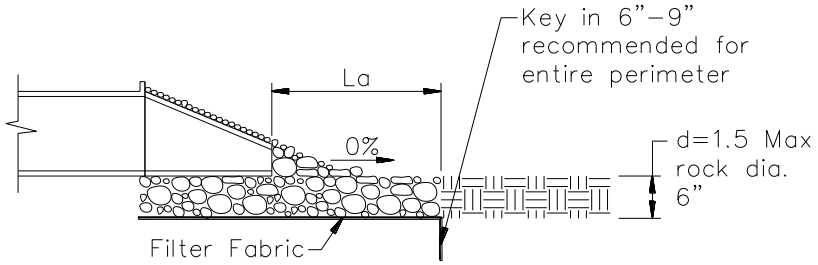
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PLAN VIEW

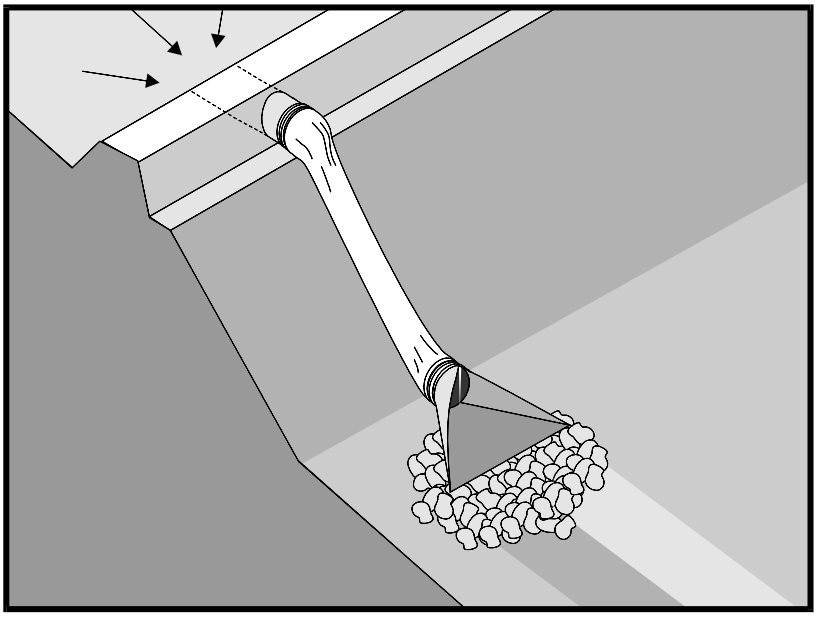


SECTION A–A

Pipe Diameter inches	Discharge ft³/s	Apron Length, La ft	Rip Rap D_{50} Diameter Min inches
12	5	10	4
	10	13	6
18	10	10	6
	20	16	8
	30	23	12
	40	26	16
24	30	16	8
	40	26	8
	50	26	12
	60	30	16

For larger or higher flows consult a Registered Civil Engineer
Source: USDA - SCS

Slope Drains EC-11



Categories

EC	Erosion Control	☑
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ Primary Objective
☒ Secondary Objective

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

EC-9 Earth Dike, Drainage Swales

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Description and Purpose

A slope drain is a pipe used to intercept and direct surface runoff or groundwater into a stabilized watercourse, trapping device, or stabilized area. Slope drains are used with earth dikes and drainage ditches to intercept and direct surface flow away from slope areas to protect cut or fill slopes.

Suitable Applications

- Where concentrated flow of surface runoff must be conveyed down a slope in order to prevent erosion.
- Drainage for top of slope diversion dikes or swales.
- Drainage for top of cut and fill slopes where water can accumulate.
- Emergency spillway for a sediment basin.

Limitations

Installation is critical for effective use of the pipe slope drain to minimize potential gully erosion.

- Maximum drainage area per slope drain is 10 acres. (For large areas use a paved chute, rock lined channel, or additional pipes.)
- Severe erosion may result when slope drains fail by overtopping, piping, or pipe separation.

  - During large storms, pipe slope drains may become clogged or over charged, forcing water around the pipe and causing extreme slope erosion.

  - If the sectional downdrain is not sized correctly, the runoff can spill over the drain sides causing gully erosion and potential failure of the structure.

- Dissipation of high flow velocities at the pipe outlet is required to avoid downstream erosion.

- Sediment accumulation, scour depressions, and/or persistent non-stormwater discharges can result in areas of standing water suitable for mosquito production in energy dissipaters associated with slope drain outlets.

Implementation

General

The slope drain is applicable for any construction site where concentrated surface runoff can accumulate and must be conveyed down the slope in order to prevent erosion. The slope drain is effective because it prevents the stormwater from flowing directly down the slope by confining all the runoff into an enclosed pipe or channel. Due to the time lag between grading slopes and installation of permanent stormwater collection systems and slope stabilization measures, temporary provisions to intercept runoff are sometimes necessary. Particularly in steep terrain, slope drains can protect unstabilized areas from erosion.

Installation

The slope drain may be a rigid pipe, such as corrugated metal, a flexible conduit, or a lined terrace drain with the inlet placed on the top of a slope and the outlet at the bottom of the slope. This BMP typically is used in combination with a diversion control, such as an earth dike or drainage swale at the top of the slope.

The following criteria must be considered when siting slope drains.

- Permanent structures included in the project plans can often serve as construction BMPs if implemented early. However, the permanent structure must meet or exceed the criteria for the temporary structure.

- Inlet structures must be securely entrenched and compacted to avoid severe gully erosion.

- Slope drains must be securely anchored to the slope and must be adequately sized to carry the capacity of the design storm and associated forces.

- Outlets must be stabilized with riprap, concrete or other type of energy dissipator, or directed into a stable sediment trap or basin. See EC-10, Velocity Dissipation Devices.

- Debris racks are recommended at the inlet. Debris racks located several feet upstream of the inlet can usually be larger than racks at the inlet, and thus provide enhanced debris protection and less plugging.

- Safety racks are also recommended at the inlet and outlet of pipes where children or animals could become entrapped.

- Secure inlet and surround with dikes to prevent gully erosion and anchor pipe to slope.

- When using slope drains, limit drainage area to 10 acres per pipe. For larger areas, use a rock lined channel or a series of pipes.
- Size to convey at least the peak flow of a 10-year storm. The design storm is conservative due to the potential impact of system failures.
- Maximum slope generally limited to 2:1 (H:V) as energy dissipation below steeper slopes is difficult.
- Direct surface runoff to slope drains with interceptor dikes. See BMP EC-9, Earth Dikes and Drainage Swales. Top of interceptor dikes should be 12 in. higher than the top of the slope drain.
- Slope drains can be placed on or buried underneath the slope surface.
- Recommended materials include both metal and plastic pipe, either corrugated or smooth wall. Concrete pipe can also be used.
- When installing slope drains:
  - Install slope drains perpendicular to slope contours.
  - Compact soil around and under entrance, outlet, and along length of pipe.
  - Securely anchor and stabilize pipe and appurtenances into soil.
  - Check to ensure that pipe connections are watertight.
  - Protect area around inlet with filter cloth. Protect outlet with riprap or other energy dissipation device. For high energy discharges, reinforce riprap with concrete or use reinforced concrete device.
  - Protect outlet of slope drains using a flared end section when outlet discharges to a flexible energy dissipation device.
  - A flared end section installed at the inlet will improve flow into the slope drain and prevent erosion at the pipe entrance. Use a flared end section with a 6 in. minimum toe plate to help prevent undercutting. The flared section should slope towards the pipe inlet.

Design and Layout

The capacity for temporary drains should be sufficient to convey at least the peak runoff from a 10-year rainfall event. The pipe size may be computed using the Rational Method or a method established by the local municipality. Higher flows must be safely stored or routed to prevent any offsite concentration of flow and any erosion of the slope. The design storm is purposely conservative due to the potential impacts associated with system failures.

As a guide, temporary pipe slope drains should not be sized smaller than shown in the following table:

Minimum Pipe Diameter (Inches)	Maximum Drainage Area (Acres)
12	1.0
18	3.0
21	5.0
24	7.0
30	10.0

Larger drainage areas can be treated if the area can be subdivided into areas of 10 acres or less and each area is treated as a separate drainage. Drainage areas exceeding 10 acres must be designed by a Registered Civil Engineer and approved by the agency that issued the grading permit.

Materials:

Soil type, rainfall patterns, construction schedule, local requirements, and available supply are some of the factors to be considered when selecting materials. The following types of slope drains are commonly used:

- **Rigid Pipe:** This type of slope drain is also known as a pipe drop. The pipe usually consists of corrugated metal pipe or rigid plastic pipe. The pipe is placed on undisturbed or compacted soil and secured onto the slope surface or buried in a trench. Concrete thrust blocks must be used when warranted by the calculated thrust forces. Collars should be properly installed and secured with metal strappings or watertight collars.

- **Flexible Pipe**: The flexible pipe slope drain consists of a flexible tube of heavy duty plastic, rubber, or composite material. The tube material is securely anchored onto the slope surface. The tube should be securely fastened to the metal inlet and outlet conduit sections with metal strappings or watertight collars.

- **Section Downdrains**: The section downdrain consists of pre-fabricated, section conduit of half round or third round material. The sectional downdrain performs similar to a flume or chute. The pipe must be placed on undisturbed or compacted soil and secured into the slope.

- **Concrete-lined Terrace Drain:** This is a concrete channel for draining water from a terrace on a slope to the next level. These drains are typically specified as permanent structures and if installed early, can serve as slope drains during construction, which should be designed according to local drainage design criteria.

Costs

- Cost varies based on pipe selection and selected outlet protection.

Corrugated Steel Pipes, Per Foot	
Size	Supplied and Installed Cost (No Trenching Included)
12”	$19.60 per LF
15”	$22.00
18”	$26.00
24”	$32.00
30”	$50.00
PVC Pipes, Per Foot	
Size	Supplied and Installed Cost (No Trenching Included)
12”	$24.50
14”	$49.00
16”	$51.00
18”	$54.00
20”	$66.00
24”	$93.00
30”	$130.00

Inspection and Maintenance

- Inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Inspect BMPs subjected to non-stormwater discharges daily while non-stormwater discharges occur. Minimize areas of standing water by removing sediment blockages and filling scour depressions.
- Inspect outlet for erosion and downstream scour. If eroded, repair damage and install additional energy dissipation measures. If downstream scour is occurring, it may be necessary to reduce flows being discharged into the channel unless other preventative measures are implemented.
- Insert inlet for clogging or undercutting. Remove debris from inlet to maintain flows. Repair undercutting at inlet and if needed, install flared section or rip rap around the inlet to prevent further undercutting.
- Inspect pipes for leakage. Repair leaks and restore damaged slopes.
- Inspect slope drainage for accumulations of debris and sediment.

- Remove built up sediment from entrances and outlets as required. Flush drains if necessary; capture and settle out sediment from discharge.
- Make sure water is not ponding onto inappropriate areas (e.g., active traffic lanes, material storage areas, etc.).
- Pipe anchors must be checked to ensure that the pipe remains anchored to the slope. Install additional anchors if pipe movement is detected.

References

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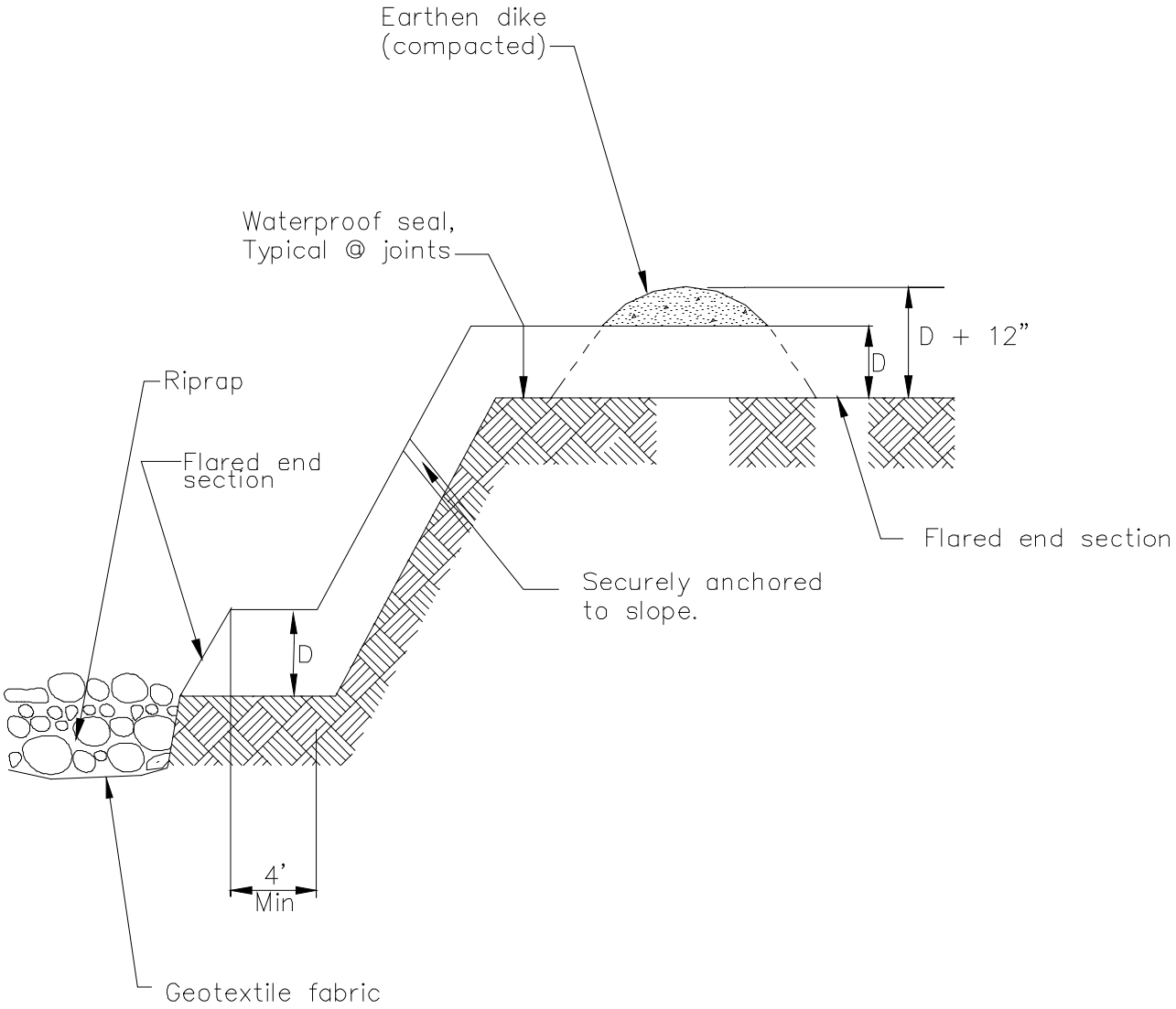
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TYPICAL SLOPE DRAIN
NOT TO SCALE

Streambank Stabilization EC-12



Categories

EC	Erosion Control	☑
SE	Sediment Control	☒
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	☒
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Objective**

☒ **Secondary Objective**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

Combination of erosion and sediment controls.

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Description and Purpose

Stream channels, streambanks, and associated riparian areas are dynamic and sensitive ecosystems that respond to changes in land use activity. Streambank and channel disturbance resulting from construction activities can increase the stream's sediment load, which can cause channel erosion or sedimentation and have adverse affects on the biotic system. BMPs can reduce the discharge of sediment and other pollutants to minimize the impact of construction activities on watercourses. Streams on the 303(d) list and listed for sediment may require numerous measures to prevent any increases in sediment load to the stream.

Suitable Applications

These procedures typically apply to all construction projects that disturb or occur within stream channels and their associated riparian areas.

Limitations

Specific permit requirements or mitigation measures such as Regional Water Quality Control Board (RWQCB) 401 Certification, U.S. Army Corps of Engineers 404 permit and approval by California Department of Fish and Game supercede the guidance in this BMP.

- If numerical based water quality standards are mentioned in any of these and other related permits, testing and sampling may be required. Streams listed as 303(d) impaired for sediment, silt, or turbidity, are required to

conduct sampling to verify that there is no net increase in sediment load due to construction activities.

Implementation

Planning

- Proper planning, design, and construction techniques can minimize impacts normally associated with in stream construction activities. Poor planning can adversely affect soil, fish, wildlife resources, land uses, or land users. Planning should take into account: scheduling; avoidance of in-stream construction; minimizing disturbance area and construction time period; using pre-disturbed areas; selecting crossing location; and selecting equipment.

Scheduling

- Construction activities should be scheduled according to the relative sensitivity of the environmental concerns and in accordance with EC-1, Scheduling. Scheduling considerations will be different when working near perennial streams vs. ephemeral streams and are as follows.

- When in-stream construction is conducted in a perennial stream, work should optimally be performed during the rainy season. This is because in the summer, any sediment-containing water that is discharged into the watercourse will cause a large change in both water clarity and water chemistry. During the rainy season, there is typically more and faster flowing water in the stream so discharges are diluted faster. However, should in-stream work be scheduled for summer, establishing an isolation area, or diverting the stream, will significantly decrease the amount of sediment stirred up by construction work. Construction work near perennial streams should optimally be performed during the dry season (see below).

- When working in or near ephemeral streams, work should be performed during the dry season. By their very nature, ephemeral streams are usually dry in the summer, and therefore, in-stream construction activities will not cause significant water quality problems. However, when tying up the site at the end of the project, wash any fines (see Washing Fines) that accumulated in the channel back into the bed material, to decrease pollution from the first rainstorm of the season.

- When working near ephemeral or perennial streams, erosion and sediment controls (see silt fences, straw bale barriers, etc.) should be implemented to keep sediment out of stream channel.

Minimize Disturbance

- Minimize disturbance through: selection of the narrowest crossing location; limiting the number of equipment trips across a stream during construction; and, minimizing the number and size of work areas (equipment staging areas and spoil storage areas). Place work areas at least 50 ft from stream channel. Field reconnaissance should be conducted during the planning stage to identify work areas.

Use of Pre-Disturbed Areas

- Locate project sites and work areas in areas disturbed by prior construction or other activity when possible.

Selection of Project Site

- Avoid steep and unstable banks, highly erodible or saturated soils, or highly fractured rock.
- Select project site that minimizes disturbance to aquatic species or habitat.

Equipment Selection

- Select equipment that reduces the amount of pressure exerted on the ground surface, and therefore, reduces erosion potential and/or use overhead or aerial access for transporting equipment across drainage channels. Use equipment that exerts ground pressures of less than 5 or 6 lb/in^2, where possible. Low ground pressure equipment includes: wide or high flotation tires (34 to 72 in. wide); dual tires; bogie axle systems; tracked machines; lightweight equipment; and, central tire inflation systems.

Streambank Stabilization

Preservation of Existing Vegetation

- Preserve existing vegetation in accordance with EC-2, Preservation of Existing Vegetation. In a streambank environment, preservation of existing vegetation provides the following benefits.

Water Quality Protection

- Vegetated buffers on slopes trap sediment and promote groundwater recharge. The buffer width needed to maintain water quality ranges from 15 to 100 ft. On gradual slopes, most of the filtering occurs within the first 30 ft. Steeper slopes require a greater width of vegetative buffer to provide water quality benefits.

Streambank Stabilization

- The root system of riparian vegetation stabilizes streambanks by increasing tensile strength in the soil. The presence of vegetation modifies the moisture condition of slopes (infiltration, evapo transpiration, interception) and increases bank stability.

Riparian Habitat

- Buffers of diverse riparian vegetation provide food and shelter for riparian and aquatic organisms. Minimizing impacts to fisheries habitat is a major concern when working near streams and rivers. Riparian vegetation provides shade, shelter, organic matter (leaf detritus and large woody debris), and other nutrients that are necessary for fish and other aquatic organisms. Buffer widths for habitat concerns are typically wider than those recommended for water quality concerns (100 to 1500 ft).
- When working near watercourses, it is important to understand the work site's placement in the watershed. Riparian vegetation in headwater streams has a greater impact on overall water quality than vegetation in downstream reaches. Preserving existing vegetation upstream is necessary to maintain water quality, minimize bank failure, and maximize riparian habitat, downstream of the work site.

Limitations

- Local county and municipal ordinances regarding width, extent and type of vegetative buffer required may exceed the specifications provided here; these ordinances should be investigated prior to construction.

Streambank Stabilization Specific Installation

- As a general rule, the width of a buffer strip between a road and the stream is recommended to be 50 ft plus four times the percent slope of the land, measured between the road and the top of stream bank.

Hydraulic Mulch

- Apply hydraulic mulch on disturbed streambanks above mean high water level in accordance with EC-3, Hydraulic Mulch to provide temporary soil stabilization.

Limitations

- Do not place hydraulic mulch or tackifiers below the mean high water level, as these materials could wash into the channel and impact water quality or possibly cause eutrophication (eutrophication is an algal bloom caused by excessively high nutrient levels in the water).

Hydroseeding

- Hydroseed disturbed streambanks in accordance with EC-4, Hydroseeding.

Limitations

- Do not place tackifiers or fertilizers below the mean high water level, as these materials could wash into the channel and impact water quality or possibly cause eutrophication.

Soil Binders

- Apply soil binders to disturbed streambanks in accordance with EC-5, Soil Binders.

Limitations

- Do not place soil binders below the mean high water level. Soil binder must be environmentally benign and non-toxic to aquatic organisms.

Straw Mulch

- Apply straw mulch to disturbed streambanks in accordance with EC-6, Straw Mulch.

Limitations

- Do not place straw mulch below the mean high water level, as this material could wash into the channel and impact water quality or possibly cause eutrophication.

Geotextiles and Mats

- Install geotextiles and mats as described in EC-7, Geotextiles and Mats, to stabilize disturbed channels and streambanks. Not all applications should be in the channel, for example, certain geotextile netting may snag fish gills and are not appropriate in fish bearing streams. Geotextile fabrics that are not biodegradable are not appropriate for in stream use. Additionally, geotextile fabric or blankets placed in channels must be adequate to sustain anticipated hydraulic forces.

Earth Dikes, Drainage Swales, and Lined Ditches

- Convey, intercept, or divert runoff from disturbed streambanks using EC-9, Earth Dikes and Drainage Swales.

Limitations

- Do not place earth dikes in watercourses, as these structures are only suited for intercepting sheet flow, and should not be used to intercept concentrated flow.
- Appropriately sized velocity dissipation devices (EC-10) must be placed at outlets to minimize erosion and scour.

Velocity Dissipation Devices

- Place velocity dissipation devices at outlets of pipes, drains, culverts, slope drains, diversion ditches, swales, conduits or channels in accordance with EC-10, Velocity Dissipation Devices.

Slope Drains

- Use slope drains to intercept and direct surface runoff or groundwater into a stabilized watercourse, trapping device or stabilized area in accordance with EC-11, Slope Drains.

Limitations

- Appropriately sized outlet protection and velocity dissipation devices (EC-10) must be placed at outlets to minimize erosion and scour.

Streambank Sediment Control

Silt Fences

- Install silt fences in accordance with SE-1, Silt Fence, to control sediment. Silt fences should only be installed where sediment laden water can pond, thus allowing the sediment to settle out.

Fiber Rolls

- Install fiber rolls in accordance with SE-5, Fiber Rolls, along contour of slopes above the high water level to intercept runoff, reduce flow velocity, release the runoff as sheet flow and provide removal of sediment from the runoff. In a stream environment, fiber rolls should be used in conjunction with other sediment control methods such as SE-1, Silt Fence or SE-9 Straw Bale Barrier. Install silt fence, straw bale barrier, or other erosion control method along toe of slope above the high water level.

Gravel Bag Berm

- A gravel bag berm or barrier can be utilized to intercept and slow the flow of sediment laden sheet flow runoff in accordance with SE-6, Gravel Bag Berm. In a stream environment gravel bag barriers can allow sediment to settle from runoff before water leaves the construction site and can be used to isolate the work area from the live stream.

Limitations

- Gravel bag barriers are not recommended as a perimeter sediment control practice around streams.

Straw Bale Barrier

- Install straw bale barriers in accordance with SE-9, Straw Bale Barrier, to control sediment. Straw bale barriers should only be installed where sediment laden water can pond, thus allowing the sediment to settle out. Install a silt fence in accordance with SE-1, Silt Fence,

on down slope side of straw bale barrier closest to stream channel to provide added sediment control.

Rock Filter

Description and Purpose

Rock filters are temporary erosion control barriers composed of rock that is anchored in place. Rock filters detain the sediment laden runoff, retain the sediment, and release the water as sheet flow at a reduced velocity. Typical rock filter installations are illustrated at the end of this BMP.

Applications

- Near the toe of slopes that may be subject to flow and rill erosion.

Limitations

- Inappropriate for contributing drainage areas greater than 5 acres.
- Requires sufficient space for ponded water.
- Ineffective for diverting runoff because filters allow water to slowly seep through.
- Rock filter berms are difficult to remove when construction is complete.
- Unsuitable in developed areas or locations where aesthetics is a concern.

Specifications

- Rock: open graded rock, 0.75 to 5 in. for concentrated flow applications.
- Woven wire sheathing: 1 in. diameter, hexagonal mesh, galvanized 20gauge (used with rock filters in areas of concentrated flow).
- In construction traffic areas, maximum rock berm heights should be 12 in. Berms should be constructed every 300 ft on slopes less than 5%, every 200 ft on slopes between 5% and 10%, and every 100 ft on slopes greater than 10%.

Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect weekly during the rainy season and at two-week intervals in the non-rainy season to verify continued BMP implementation.
- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges occur.
- Reshape berms as needed and replace lost or dislodged rock, and filter fabric.
- Sediment that accumulates in the BMP must be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when the sediment accumulation reaches one third of the barrier height. Sediment removed during maintenance may be incorporated into earthwork on the site or disposed at an appropriate location.

K-rail

Description and Purpose

This is temporary sediment control that uses K-rails to form the sediment deposition area, or to isolate the near bank construction area. Install K-rails at toe of slope in accordance with procedures described in NS-5, Clear Water Diversion.

Barriers are placed end to end in a pre-designed configuration and gravel filled bags are used at the toe of the barrier and at their abutting ends to seal and prevent movement of sediment beneath or through the barrier walls.

Appropriate Applications

- This technique is useful at the toe of embankments, cuts or fills slopes.

Limitations

- The K-rail method should not be used to dewater a project site, as the barrier is not watertight.

Implementation

- Refer to NS-5, Clear Water Diversion, for implementation requirements.

Instream Construction Sediment Control

There are three different options currently available for reducing turbidity while working in a stream or river. The stream can be isolated from the area in which work is occurring by means of a water barrier, the stream can be diverted around the work site through a pipe or temporary channel, or one can employ construction practices that minimize sediment suspension.

Whatever technique is implemented, an important thing to remember is that dilution can sometimes be the solution. A probable "worst time" to release high TSS into a stream system might be when the stream is very low; summer low flow, for example. During these times, the flow may be low while the biological activity in the stream is very high. Conversely, the addition of high TSS or sediment during a big storm discharge might have a relatively low impact, because the stream is already turbid, and the stream energy is capable of transporting both suspended solids, and large quantities of bedload through the system. The optimum time to "pull" in-stream structures may be during the rising limb of a storm hydrograph.

Techniques to minimize Total Suspended Solids (TSS)

- **Padding** - Padding laid in the stream below the work site may trap some solids that are deposited in the stream during construction. After work is done, the padding is removed from the stream, and placed on the bank to assist in re-vegetation.

- **Clean, washed gravel** - Using clean, washed gravel decreases solid suspension, as there are fewer small particles deposited in the stream.

- **Excavation using a large bucket** - Each time a bucket of soil is placed in the stream, a portion is suspended. Approximately the same amount is suspended whether a small amount of soil is placed in the stream, or a large amount. Therefore, using a large excavator bucket instead of a small one, will reduce the total amount of soil that washes downstream.

- **Use of dozer for backfilling** - Using a dozer for backfilling instead of a backhoe follows the same principles – the fewer times soil is deposited in the stream, the less soil will be suspended.

- **Partial dewatering with a pump** - Partially dewatering a stream with a pump reduces the amount of water, and thus the amount of water that can suspend sediment.

Washing Fines

Definition and Purpose

- Washing fines is an "in-channel" sediment control method, which uses water, either from a water truck or hydrant, to wash stream fines that were brought to the surface of the channel bed during restoration, back into the interstitial spaces of the gravel and cobbles.

- The purpose of this technique is to reduce or eliminate the discharge of sediment from the channel bottom during the first seasonal flow. Sediment should not be allowed into stream channels; however, occasionally in-channel restoration work will involve moving or otherwise disturbing fines (sand and silt sized particles) that are already in the stream, usually below bankfull discharge elevation. Subsequent re-watering of the channel can result in a plume of turbidity and sedimentation.

- This technique washes the fines back into the channel bed. Bedload materials, including gravel cobbles, boulders and those fines, are naturally mobilized during higher storm flows. This technique is intended to delay the discharge until the fines would naturally be mobilized.

Appropriate Applications

- This technique should be used when construction work is required in channels. It is especially useful in intermittent or ephemeral streams in which work is performed "in the dry", and which subsequently become re-watered.

Limitations

- The stream must have sufficient gravel and cobble substrate composition.

- The use of this technique requires consideration of time of year and timing of expected stream flows.

- The optimum time for the use of this technique is in the fall, prior to winter flows.

- Consultation with, and approval from the Department of Fish and Game and the Regional Water Quality Control Board may be required.

Implementation

- Apply sufficient water to wash fines, but not cause further erosion or runoff.

- Apply water slowly and evenly to prevent runoff and erosion.

- Consult with Department of Fish and Game and the Regional Water Quality Control Board for specific water quality requirements of applied water (e.g. chlorine).

Inspection and Maintenance

- None necessary

Costs

Cost may vary according to the combination of practices implemented.

Inspection and Maintenance

- Inspect and verify that activity-based BMPs are in place prior to the commencement of associated activities. While activities associated with the BMP are under way, inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events until final stabilization is achieved.

- Inspect BMPs subject to non-stormwater discharges daily while non-stormwater discharges occur.

- Inspect and repair equipment (for damaged hoses, fittings, and gaskets).

References

Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, May 1995.

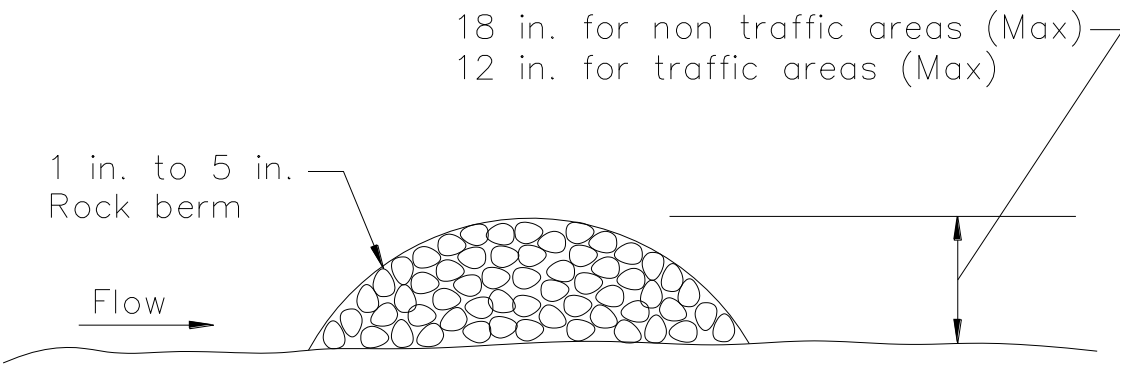
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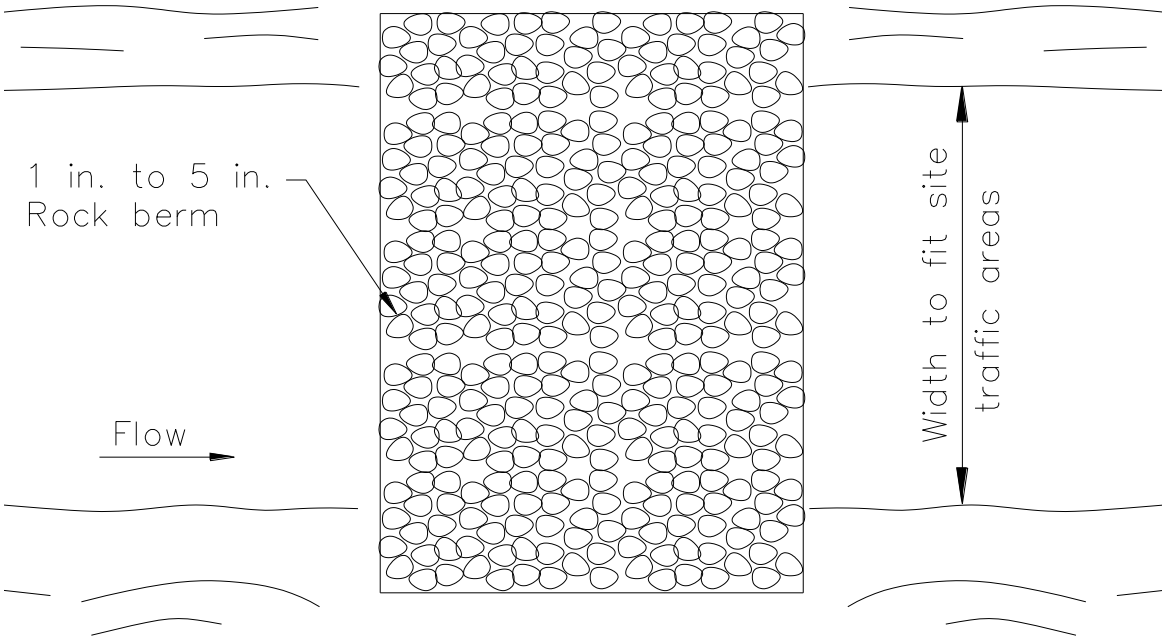
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SECTION



PLAN

TYPICAL ROCK FILTER
NOT TO SCALE

Reserved EC-13

BMP Factsheet removed in 2009.
Formerly PAM. See SE-11, Active Treatment Systems.

Categories

EC	Erosion Control
SE	Sediment Control
TC	Tracking Control
WE	Wind Erosion Control
NS	Non-Stormwater Management Control
WM	Waste Management and Materials Pollution Control

Legend:
☑ Primary Category
☒ Secondary Category

Targeted Constituents

Sediment
Nutrients
Trash
Metals
Bacteria
Oil and Grease
Organics

Potential Alternatives

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Compost Blanket EC-14



Categories

EC	Erosion Control	☑
SE	Sediment Control	
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ Primary Category
☒ Secondary Category

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

EC-3 Hydraulic Mulch
EC-4 Hydroseeding
EC-5 Soil Binders
EC-7 Geotextiles and Mats
EC-8 Wood Mulching

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Description and Purpose

A compost blanket is applied to slopes and earth disturbed areas to prevent erosion, and in some cases, increase infiltration and/or establish vegetation. The compost blanket can be applied by hand, conveyor system, compost spreader, or pneumatic delivery (blower) system. The blanket thickness is determined from the slope steepness and anticipated precipitation. A compost blanket protects the soil surface from raindrop erosion, particularly rills and gullies that may form under other methods of erosion control.

A compost blanket, if properly installed, can be very successful at vegetation establishment, weed suppression and erosion control. The compost blanket comes into direct contact with the underlying soil, reducing rill formation. Furthermore, compost provides organic matter and nutrients important for vegetation growth. The compost blanket provides soil structure that allows water to infiltrate the soil surface and retain moisture, which also promotes seed germination and vegetation growth, in addition to reducing runoff.

Compost is typically derived from combinations of feedstocks, biosolids, leaf and yard trimmings, manure, wood, or mixed solid waste. Many types of compost are products of municipal recycle or "Greenwaste" programs. Compost is organic and biodegradable and can be left onsite. There are many types of compost with a variety of properties with specific functions, and accordingly, compost selection is an important design consideration in the application of this type of erosion control.

Suitable Applications

A compost blanket is appropriate for slopes and earth disturbed areas requiring protection until permanent stabilization is established. A compost blanket can also used in combination with temporary and/or permanent seeding strategies to enhance plant establishment. Examples include:

- Rough-graded areas that will remain inactive for longer than 14 days
- Soil stockpiles
- Slopes with exposed soil between existing vegetation such as trees or shrubs
- Slopes planted with live, container-grown vegetation
- Disturbed areas where plants are slow to develop

A compost blanket is typically used on slopes of 2:1 (H:V) or gentler. However, a compost blanket can be effective when applied to slopes as steep as 1:1 (H:V) with appropriate design considerations including slope length, blanket thickness, adding components such as a tackifier, or using compost blankets in conjunction with other techniques, such as compost socks and berms or fiber rolls.

Compost can be pre-seeded prior to application to the soil (recommended by the EPA for construction site stormwater runoff control) or seeded after the blanket has been installed. The compost medium can also remove pollutants in stormwater including heavy metals; oil and grease; and hydrocarbons (USEPA, 1998).

Limitations

- Compost can potentially leach nutrients (dissolved phosphorus and nitrogen) into runoff and potentially impact water quality. Compost should not be used directly upstream from nutrient impaired waterbodies (Adams et. al, 2008).
- Compost may also contain other undesirable constituents that are detrimental to water quality. Carefully consider the qualifications and experience of any compost producer/supplier.
- A compost blanket applied by hand is more time intensive and potentially costly. Using a pneumatic blower truck is the recommended cost effective method of application.
- When blowers are used, the treatment areas should be within 300 ft of a road or surface capable of supporting trucks.
- Wind may limit application of compost and result in application to undesired locations.
- Compost blankets should not be applied in areas of concentrated flows.
- Steeper slopes may require additional blanket thickness and other stability measures such as using tackifiers or slope interruption devices (compost socks and berms, or fiber rolls). The same applies for sites with high precipitation totals or during the rainy season.

Implementation

- Additional guidance on the comparison and selection of temporary slope stabilization methods is provided in Appendix F of the Handbook.

Compost Materials

- California Compost Regulations (Title 14, California Code of Regulations, Division 7, Chapter 3.1, Article 7, Section 17868.3) define and require a quality of compost for application. Compost should comply with all physical and chemical requirements. Specific requirements are provided in Table 1 below, taken from Caltrans Standard Special Provision 10-1 (SSP 10-1), Erosion Control (Compost Blanket).

- The compost producer should be fully permitted as specified under the California Integrated Waste Management Board, Local Enforcement Agencies and any other State and Local Agencies that regulate Solid Waste Facilities. If exempt from State permitting requirements, the composting facility should certify that it follows guidelines and procedures for production of compost meeting the environmental health standards of Title 14, California Code of Regulations, Division 7, Chapter 3.1, Article 7.

- The compost producer should be a participant in United States Composting Council's Seal of Testing Assurance program.

- Compost moisture should be considered for composition quality and application purposes. A range of 30-50% is typical. Compost that is too dry is hard to apply and compost that is too wet is more difficult (and more expensive) to transport. For arid or semi-arid areas, or for application during the dry season, use compost with greater moisture content than areas with wetter climates. For wetter or more humid climates or for application during the wet season, drier composts can be used as the compost will absorb moisture from the ambient air.

- Organic content of the compost is also important and should range from 30 to 65% depending on site conditions.

- Compost should be high-quality mature compost. Immature compost can potentially leach nutrients.

- Compost should not be derived from mixed municipal solid waste and should be free of visible contaminants.

- Compost should not contain paint, petroleum products, pesticides or any other chemical residues harmful to animal life or plant growth. Metal concentrations in compost should not exceed the maximum metal concentrations listed under Title 14, California Code of Regulations, Division 7, Chapter 3.1, Section 17868.2.

- Compost should not possess objectionable odors.

- Compost should be weed free.

Table 1. Physical/Chemical Requirements of Compost
Reference - Caltrans SSP-10 Erosion Control Blanket (Compost)

Property	Test Method	Requirement
pH	*TMECC 04.11-A Elastometric pH 1:5 Slurry Method pH Units	6.0–8.0
Soluble Salts	TMECC 04.10-A Electrical Conductivity 1:5 Slurry Method dS/m (mmhos/cm)	0-10.0
Moisture Content	TMECC 03.09-A Total Solids & Moisture at 70+/- 5 deg C % Wet Weight Basis	30-60
Organic Matter Content	TMECC 05.07-A Loss-On-Ignition Organic Matter Method (LOI) % Dry Weight Basis	30–65
Maturity	TMECC 05.05-A Germination and Vigor Seed Emergence Seedling Vigor % Relative to Positive Control	 80 or Above 80 or Above
Stability	TMECC 05.08-B Carbon Dioxide Evolution Rate mg CO_2-C/g OM per day	8 or below
Particle Size	TMECC 02.02-B Sample Sieving for Aggregate Size Classification % Dry Weight Basis	100% Passing, 3 inch 90-100% Passing, 1 inch 65-100% Passing, 3/4 inch 0 - 75% Passing, 1/4 inch Maximum length 6 inches
Pathogen	TMECC 07.01-B Fecal Coliform Bacteria < 1000 MPN/gram dry wt.	Pass
Pathogen	TMECC 07.01-B Salmonella < 3 MPN/4 grams dry wt.	Pass
Physical Contaminants	TMECC 02.02-C Man Made Inert Removal and Classification: Plastic, Glass and Metal % > 4mm fraction	Combined Total: < 1.0
Physical Contaminants	TMECC 02.02-C Man Made Inert Removal and Classification: Sharps (Sewing needles, straight pins and hypodermic needles) % > 4mm fraction	None Detected

*TMECC refers to "Test Methods for the Examination of Composting and Compost," published by the United States Department of Agriculture and the United States Compost Council (USCC).

Installation

- Prior to compost application, prepare the slope by removing loose rocks, roots, stumps, and other debris greater than 2" in diameter. Prepare the slope area surface by scarifying or track walking/roughening if necessary.
- Select method to apply the compost blanket. A pneumatic blower is most cost effective and most adaptive in applying compost to steep, rough terrain, and hard to reach locations.
- A compost blanket thickness of 1" to 4" should be applied to slopes of 2:1 (H:V) or gentler, based on site-specific conditions. Increase blanket thickness with increased slope steepness and/or during installation during the rainy season (for example, 2" to 3" should be used for a

3:1 slope, while 1" to 2" can be used for a 4:1 slope). Erosion control using a compost blanket is not recommended for slopes greater than 1:1 (H:V).

- For steeper slopes, tackifiers should be utilized and/or other stabilization techniques employed. For example, compost socks or berms can be installed at intervals over the compost blanket (in a similar manner as Fiber Rolls, SE-5).
- Compost socks or berms (or equivalent linear sediment control BMP) should be placed at the top and/or bottom of the slope for additional erosion control performance.
- For optimum vegetation establishment, a blanket thickness of 1" to 2" is recommended. If vegetation establishment is not the primary function of the compost blanket, a thicker blanket may be recommended based on slope or rainfall conditions.
- Evenly distribute compost on the soil surface to the desired blanket thickness (1/2" to 4" as calculated prior based on site conditions and objectives). Even distribution is an important factor in preventing future rill and gully erosion.
- The compost blanket should extend 3 to 6 feet over the top of the shoulder of the slope. A compost sock or compost berm can be used at the top of the slope as an auxiliary technique to prevent runoff from flowing underneath the compost blanket.
- Use additional anchoring and erosion control BMPs in conjunction of the compost blanket as needed.

Costs

The cost associated with a compost blanket is similar to that of a straw mat and generally less expensive than a geotextile blanket (USEPA, 2009). Caltrans has provided a recent estimate for $5,000 to $8,000 per acre for application of an unseeded 1 inch compost blanket (Caltrans Compost Specifications, 2009). Recently obtained vendor costs indicate that proprietary blends of compost that are seeded and contain a nutrient rich "tackifier" can cost approximately $0.35 per square foot, or approximately $15,000 per acre for a 2 inch blanket. Application by hand is more time intensive and likely more costly.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Areas where erosion is evident, another layer of compost should be reapplied as soon as possible. It may be necessary to install an additional type of stormwater BMP at the top of slope or as a slope interrupter to control flow, such as a fiber roll (SE-5) or compost sock (SE-11).
- Care should be exercised to minimize the damage to protected areas while making repairs, as any area damaged will require reapplication of BMPs.
- Limit or prohibit foot traffic to minimize damage to BMP or impede vegetation establishment.

References

An Analysis of Composting as an Environmental Remediation Technology, U.S. Environmental Protection Agency (USEPA), Solid Waste and Emergency Response (5305W), EPA530-R-8-008, 1998.

Characteristics of Compost: Moisture Holding and Water Quality Improvement, Center for Research in Water Resources, Kirchoff, C., Malina, J., and Barrett, M., 2003.

Compost Utilization for Erosion Control, The University of Georgia College of Agricultural and Environmental Sciences, pubs.caes.uga.edu/caespubs/pubcd/B1200.htm, Faucette, B. and Risse, M., 2009.

Demonstration Project Using Yard Debris Compost for Erosion Control, Final Report, presented to Metropolitan Service District, W&H Pacific, 1993.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, 2005.

Standard Special Provision 10-1, Erosion Control (Compost Blanket), California Department of Transportation (Caltrans). 2007 Update.

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Filter Sock Presentation provided at Erosion, Sediment Control and Stormwater Management with Compost BMPs Workshop, U.S. Composting Council 13th Annual Conference and Trade Show, McCoy, S., 2005.

National Pollutant Discharge Elimination System (NPDES), Compost Blankets, U.S. Environmental Protection Agency (USEPA). http://cfpub.epa.gov/npdes/stormwater/menuofbmps/index.cfm?action=factsheet_results&view=specific&bmp=118, 2009.

Standard Specifications for Transportation Materials and Methods of Sampling and Testing Designation M10-03, Compost for Erosion/Sediment Control (Compost Blankets), Provisional, American Association of State Highway Transportation Officials (AASHTO), 2003.

Stormwater Best Management Practices (BMPs) Field Trials of Erosion Control Compost in Reclamation of Rock Quarry Operations, Nonpoint Source Protection Program CWA §319(h), Texas Commission on Environmental Quality, Adams, T., McFarland, A., Hauck, L., Barrett, M., and Eck, B., 2008.

Soil Preparation/Roughening EC-15



Description and Purpose

Soil Preparation/Roughening involves assessment and preparation of surface soils for BMP installation. This can include soil testing (for seed base, soil characteristics, or nutrients), as well as roughening surface soils by mechanical methods (including sheepsfoot rolling, track walking, scarifying, stair stepping, and imprinting) to prepare soil for additional BMPs, or to break up sheet flow. Soil Preparation can also involve tilling topsoil to prepare a seed bed and/or incorporation of soil amendments, to enhance vegetative establishment.

Suitable Applications

Soil preparation: Soil preparation is essential to proper vegetative establishment. In particular, soil preparation (i.e. tilling, raking, and amendment) is suitable for use in combination with any soil stabilization method, including RECPs or sod. Soil preparation should not be confused with roughening.

Roughening: Soil roughening is generally referred to as track walking (sometimes called imprinting) a slope, where treads from heavy equipment run parallel to the contours of the slope and act as mini terraces. Soil preparation is most effective when used in combination with erosion controls. Soil Roughening is suitable for use as a complementary process for controlling erosion on a site. Roughening is not intended to be used as a stand-alone BMP, and should be used with perimeter controls, additional erosion control measures, grade breaks, and vegetative establishment for maximum effectiveness. Roughening is intended to only affect surface soils and should not compromise slope stability or overall compaction. Suitable applications for soil roughening include:

Categories

EC	Erosion Control	☑
SE	Sediment Control	☒
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ Primary Category
☒ Secondary Category

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

EC-3 Hydraulic Mulch

EC-5 Soil Binders

EC-7 Geotextiles and Mats

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- Along any disturbed slopes, including temporary stockpiles, sediment basins, or compacted soil diversion berms and swales.

- Roughening should be used in combination with hydraulically applied stabilization methods, compost blanket, or straw mulch; but should not be used in combination with RECPs or sod because roughening is intended to leave terraces on the slope.

Limitations

- Preparation and roughening must take place prior to installing other erosion controls (such as hydraulically applied stabilizers) or sediment controls (such as fiber rolls) on the faces of slopes.

- In such cases where slope preparation is minimal, erosion control/revegetation BMPs that do not require extensive soil preparation - such as hydraulic mulching and seeding applications - should be employed.

- Consideration should be given to the type of erosion control BMP that follows surface preparation, as some BMPs are not designed to be installed over various types of tillage/roughening, i.e., RECPs (erosion control blankets) should not be used with soil roughening due to a "bridging" effect, which suspends the blanket above the seed bed.

- Surface roughness has an effect on the amount of mulch material that needs to be applied, which shows up as a general increase in mulch material due to an increase in surface area (Topographic Index -see EC-3 Hydraulic Mulching).

Implementation

- Additional guidance on the comparison and selection of temporary slope stabilization methods is provided in Appendix F of the Handbook.

General

A roughened surface can significantly reduce erosion. Based on tests done at the San Diego State Erosion Research Laboratory, various roughening techniques on slopes can result in a 12 - 76% reduction in the erosion rate versus smooth slopes.

Materials

Minimal materials are required unless amendments and/or seed are added to the soil. The majority of soil roughening/preparation can be done with equipment that is on hand at a normal construction site, such as bull dozers and compaction equipment.

Installation Guidelines

Soil Preparation

- Where appropriate or feasible, soil should be prepared to receive the seed by disking or otherwise scarifying the surface to eliminate crust, improve air and water infiltration and create a more favorable environment for germination and growth.

- Based upon soil testing conducted, apply additional soil amendments (e.g. fertilizers, additional seed) to the soil to help with germination. Follow EC-4, Hydroseeding, when selecting and applying seed and fertilizers.

Cut Slope Roughening:

- Stair-step grade or groove the cut slopes that are steeper than 3:1.
- Use stair-step grading on any erodible material soft enough to be ripped with a bulldozer. Slopes consisting of soft rock with some subsoil are particularly suited to stair-step grading.
- Make the vertical cut distance less than the horizontal distance, and slightly slope the horizontal position of the "step" in toward the vertical wall.
- Do not make individual vertical cuts more than 2 feet (0.6 m) high in soft materials or more than 3 feet (0.9 m) high in rocky materials.
- Groove the slope using machinery to create a series of ridges and depressions that run across the slope, on the contour.

Fill Slope Roughening:

- Place on fill slopes with a gradient steeper than 3:1 in lifts not to exceed 8 inches (0.2 m), and make sure each lift is properly compacted.
- Ensure that the face of the slope consists of loose, uncompacted fill 4-6 inches (0.1-0.2 m) deep.
- Use grooving or tracking to roughen the face of the slopes, if necessary.
- Do not blade or scrape the final slope face.

Roughening for Slopes to be Mowed:

- Slopes which require mowing activities should not be steeper than 3:1.
- Roughen these areas to shallow grooves by track walking, scarifying, sheepsfoot rolling, or imprinting.
- Make grooves close together (less than 10 inches), and not less than 1 inch deep, and perpendicular to the direction of runoff (i.e., parallel to the slope contours).
- Excessive roughness is undesirable where mowing is planned.

Roughening With Tracked Machinery:

- Limit roughening with tracked machinery to soils with a sandy textural component to avoid undue compaction of the soil surface.
- Operate tracked machinery up and down the slope to leave horizontal depressions in the soil. Do not back-blade during the final grading operation.
- Seed and mulch roughened areas as soon as possible to obtain optimum seed germination and growth.

Costs

Costs are based on the additional labor of tracking or preparation of the slope plus the cost of any required soil amendment materials.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Check the seeded slopes for signs of erosion such as rills and gullies. Fill these areas slightly above the original grade, then reseed and mulch as soon as possible.
- Inspect BMPs weekly during normal operations, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.

References

Soil Stabilization BMP Research for Erosion and Sediment Controls: Cost Survey Technical Memorandum, State of California Department of Transportation (Caltrans), July 2007.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.

Non-Vegetative Stabilization EC-16



Categories

EC	Erosion Control	☑
SE	Sediment Control	☒
TR	Tracking Control	
WE	Wind Erosion Control	☒
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ Primary Category
☒ Secondary Category

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

None

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Description and Purpose

Non-vegetative stabilization methods are used for temporary or permanent stabilization of areas prone to erosion and should be used only where vegetative options are not feasible; examples include:

- Areas of vehicular or pedestrian traffic such as roads or paths;
- Arid environments where vegetation would not provide timely ground coverage, or would require excessive irrigation;
- Rocky substrate, infertile or droughty soils where vegetation would be difficult to establish; and
- Areas where vegetation will not grow adequately within the construction time frame.

There are several non-vegetative stabilization methods and selection should be based on site-specific conditions.

Decomposed Granite (DG) is a permanent erosion protection method that consists of a layer of stabilized decomposed granite placed over an erodible surface.

Degradable Mulches of various types (see EC-3, EC-6, EC-8) can be used for temporary non-vegetative stabilization; examples include straw mulch, compost, wood chips or hydraulic mulch.

Geotextiles and Mats can be used for temporary non-vegetative stabilization (see EC-7). These BMPs are typically manufactured from degradable or synthetic materials and are

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designed and specified based on their functional longevity, i.e., how long they will persist and provide erosion protection. All geotextiles and mats should be replaced when they exceed their functional longevity or when permanent stabilization methods are instituted.

Gravel Mulch is a non-degradable erosion control product that is composed of washed and screened coarse to very coarse gravel, 16 mm to 64 mm (0.6" - 2.5"), similar to an AASHTO No. 3 coarse aggregate.

Rock Slope Protection consists of utilizing large rock or rip-rap (4"- 24") to stabilize slopes with a high erosion potential and those subject to scour along waterways.

Soil Binders can be used for temporary non-vegetative stabilization (see EC-5). The key to their use is functional longevity. In most cases, the soil binder will need to be routinely monitored and re-applied to maintain an erosion-resistant coverage.

Suitable Applications

Non-vegetated stabilization methods are suitable for use on disturbed soil areas and on material stockpiles that need to be temporarily or permanently protected from erosion by water and wind. Non-vegetated stabilization should only be utilized when vegetation cannot be established in the required timeframe, due to soil or climactic conditions, or where vegetation may be a potential fire hazard.

Decomposed Granite (DG) and Gravel Mulch are suitable for use in areas where vegetation establishment is difficult, on flat surfaces, trails and pathways, and when used in conjunction with a stabilizer or tackifier, on shallow slopes (i.e., 10:1 [H:V]). DG and gravel can also be used on shallow rocky slopes where vegetation cannot be established for permanent erosion control.

Degradable Mulches can be used to cover and protect soil surfaces from erosion both in temporary and permanent applications. In many cases, the use of mulches by themselves requires routine inspection and re-application. See EC-3 Hydraulic Mulch, EC-6 Straw Mulch, EC-8 Wood Mulch, or EC-14 Compost Blankets for more information.

Geotextiles and Mats can be used as a temporary stand-alone soil stabilization method. Depending on material selection, geotextiles and mats can be a short-term (3 mos – 1 year) or long-term (1-2 years) temporary stabilization method. For more information on geotextiles and mats see EC-7 Geotextiles and Mats.

Rock Slope Protection can be used when the slopes are subject to scour or have a high erosion potential, such as slopes adjacent to flowing waterways or slopes subject to overflow from detention facilities (spillways).

Soil Binders can be used for temporary stabilization of stockpiles and disturbed areas not subject to heavy traffic. See EC-5 Soil Binders for more information.

Limitations

General

- Refer to EC-3, EC-6, EC-8, and EC-14 for limitations on use of mulches. Refer to EC-7 for limitations on use of geotextiles and mats. Refer to EC-5 for limitations on use of Soil Binders.

Decomposed Granite

- Not available in some geographic regions.
- If not tackified, material may be susceptible to erosion even on slight slopes (e.g., 30:1 [H:V]).
- Installed costs may be more expensive than vegetative stabilization methods.

Gravel Mulch

- Availability is limited in some geographic regions.
- If not properly screened and washed, can contain fine material that can erode and/or create dust problems.
- If inadequately sized, material may be susceptible to erosion on sloped areas.
- Pore spaces fill with dirt and debris over time; may provide a growing medium for weeds.

Rock Slope Protection

- Installation is labor intensive.
- Installed costs can be significantly higher than vegetative stabilization methods.
- Rounded stones may not be used on slopes greater than 2:1 [H:V].

Implementation

General

Non-vegetated stabilization should be used in accordance with the following general guidance:

- Should be used in conjunction with other BMPs, including drainage, erosion controls and sediment controls.
- Refer to EC-3, EC-6, EC-8, and EC-14 for implementation details for mulches. Refer to EC-7 for implementation details for geotextiles and mats. Refer to EC-5 for implementation details for soil binders.
- Non-vegetated stabilization measures should be implemented as soon as the disturbance in the areas they are intended to protect has ceased.
- Additional guidance on the comparison and selection of temporary slope stabilization methods is provided in Appendix F of the Handbook.

Decomposed Granite Stabilization

- If used for a road or path should be installed on a prepared base.
- Should be mixed with a stabilizer if used for roads or pathways, or on slope applications.
- Though porous it is recommended to prevent standing water on or next to a decomposed granite road or pathway.

Gravel Mulch

- Should be sized based on slope, rainfall, and upgradient run-on conditions. Stone size should be increased as potential for erosion increases (steeper slopes, high intensity rainfall).
- If permanent, a weed control fabric should be placed prior to installation.
- Should be installed at a minimum 2" depth.
- Should completely cover all exposed surfaces.

Rock Slope Protection

- Rock slope protection installation should follow Caltrans Standard Specification 72-2: Rock Slope Protection. Refer to the specification for rock conformity requirements and installation methods.
- When using rock slope protection, rock size and installation method should be specified by an Engineer.
- A geotextile fabric should be placed prior to installation.

Costs

- Costs are highly variable depending not only on technique chosen, but also on materials chosen within specific techniques. In addition, availability of certain materials will vary by region/location, which will also affect the cost. Costs of mulches, geotextiles and mats, and soil binders are presented in their respective fact sheets. Costs for decomposed granite, gravel mulch stabilization and rock slope protection may be higher depending on location and availability of materials. Caltrans has provided an estimate for gravel mulch of \$10 - \$15/yd^2 in flat areas and \$11 - \$23/yd^2 on side slopes.

Inspection and Maintenance

General

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- For permanent installation, require inspection periodically and after major storm events to look for signs of erosion or damage to the stabilization.
- All damage should be repaired immediately.
- Refer to EC-3, EC-6, EC-8, and EC-14 for inspection and maintenance requirements for mulches. Refer to EC-7 for inspection and maintenance requirements for geotextiles and mats. Refer to EC-5 for inspection and maintenance requirements for soil binders.

Decomposed Granite and Gravel Mulch Stabilization

- Rake out and add decomposed granite or gravel as needed to areas subject to rill erosion. Inspect upgradient drainage controls and repair/modify as necessary.

- Should remain stable under loose surface material. Any significant problem areas should be repaired to restore uniformity to the installation.

References

Arid Zone Forestry: A Guide for Field Technicians. Food and Agriculture Organization of the United Nations, 1989.

Design of Roadside Channels with Flexible Linings, Hydraulic Engineering Circular Number 15, Third Edition, Federal Highway Administration, 2007.

Design Standards for Urban Infrastructure - Soft Landscape Design, Department of Territory and Municipal Services - Australian Capital Territory http://www.tams.act.gov.au/work/standards_and_procedures/design_standards_for_urban_infrastructure

Erosion and Sediment Control Handbook: A Guide for Protection of State Waters through the use of Best Management Practices during Land Disturbing Activities, Tennessee Department of Environment and Conservation, 2002.

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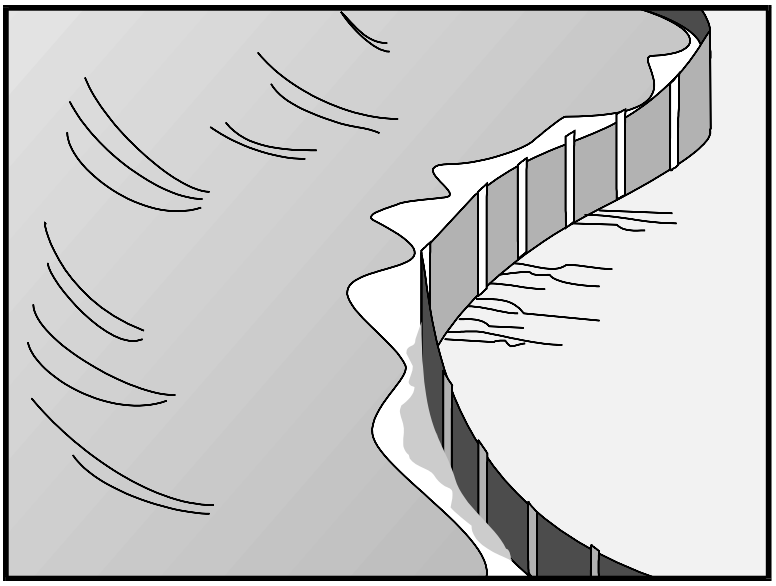
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National Menu of Best Management Practices, US Environmental Protection Agency, 2006.

Standard Specification 72-2: Rock Slope Protection. California Department of Transportation, 2006.

Stormwater Quality Handbooks Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Silt Fence SE-1



Categories		
EC	Erosion Control	
SE	Sediment Control	☑
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ **Primary Category**
☒ **Secondary Category**

Description and Purpose

A silt fence is made of a woven geotextile that has been entrenched, attached to supporting poles, and sometimes backed by a plastic or wire mesh for support. The silt fence detains water, promoting sedimentation of coarse sediment behind the fence. Silt fence does not retain soil fine particles like clays or silts.

Suitable Applications

Silt fences are suitable for perimeter control, placed below areas where sheet flows discharge from the site. They could also be used as interior controls below disturbed areas where runoff may occur in the form of sheet and rill erosion and around inlets within disturbed areas (SE-10). Silt fences should not be used in locations where the flow is concentrated. Silt fences should always be used in combination with erosion controls. Suitable applications include:

- At perimeter of a project.
- Below the toe or down slope of exposed and erodible slopes.
- Along streams and channels.
- Around temporary spoil areas and stockpiles.
- Around inlets.
- Below other small cleared areas.

Targeted Constituents	
Sediment (coarse sediment)	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

SE-5 Fiber Rolls

SE-6 Gravel Bag Berm SE-12 Manufactured Linear Sediment Controls

SE-13 Compost Socks and Berms

SE-14 Biofilter Bags

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Limitations

- Do not use in streams, channels, drain inlets, or anywhere flow is concentrated.
- Do not use in locations where ponded water may cause a flooding hazard.
- Do not use silt fence to divert water flows or place across any contour line.
- Improperly installed fences are subject to failure from undercutting, overtopping, or collapsing.
- Must be trenched and keyed in.
- Not intended for use as a substitute for Fiber Rolls (SE-5), when fiber rolls are being used as a slope interruption device.
- Do not use on slopes subject to creeping, slumping, or landslides.

Implementation

General

A silt fence is a temporary sediment barrier consisting of woven geotextile stretched across and attached to supporting posts, trenched-in, and, depending upon the strength of fabric used, supported with plastic or wire mesh fence. Silt fences trap coarse sediment by intercepting and detaining sediment-laden runoff from disturbed areas in order to promote sedimentation behind the fence.

The following layout and installation guidance can improve performance and should be followed:

- Silt fence should be used in combination with erosion controls up-slope in order to provide the most effective sediment control.
- Silt fence alone is not effective at reducing turbidity. (Barrett and Malina, 2004)
- Designers should consider diverting sediment laden water to a temporary sediment basin or trap. (EPA, 2012)
- Use principally in areas where sheet flow occurs.
- Install along a level contour, so water does not pond more than 1.5 ft at any point along the silt fence.
- Provide sufficient room for runoff to pond behind the fence and to allow sediment removal equipment to pass between the silt fence and toes of slopes or other obstructions. About 1200 ft^2 of ponding area should be provided for every acre draining to the fence.
- Efficiency of silt fences is primarily dependent on the detention time of the runoff behind the control. (Barrett and Malina, 2004)
- The drainage area above any fence should not exceed a quarter of an acre. (Rule of Thumb-100-feet of silt fence per 10,000 square feet of disturbed area.) (EPA 2012)

- The maximum length of slope draining to any point along the silt fence should be 100 ft per foot of silt fence.
- Turn the ends of the filter fence uphill to prevent stormwater from flowing around the fence.
- Leave an undisturbed or stabilized area immediately down slope from the fence where feasible.
- Silt fences should remain in place until the disturbed area draining to the silt fence is permanently stabilized, after which, the silt fence fabric and posts should be removed and properly disposed.
- J-Hooks, which have ends turning up the slope to break up long runs of fence and provide multiple storage areas that work like mini-retention areas, may be used to increase the effectiveness of silt fence.
- Be aware of local regulations regarding the type and installation requirements of silt fence, which may differ from those presented in this fact sheet.

Design and Layout

In areas where high winds are anticipated the fence should be supported by a plastic or wire mesh. The geotextile fabric of the silt fence should contain ultraviolet inhibitors and stabilizers to provide longevity equivalent to the project life or replacement schedule.

- Layout in accordance with the attached figures.
- For slopes that contain a high number of rocks or large dirt clods that tend to dislodge, it may be necessary to protect silt fence from rocks (e.g., rockfall netting) ensure the integrity of the silt fence installation.

Standard vs. Heavy Duty Silt Fence

Standard Silt Fence

- Generally applicable in cases where the area draining to fence produces moderate sediment loads.

Heavy Duty Silt Fence

- Heavy duty silt fence usually has 1 or more of the following characteristics, not possessed by standard silt fence.
  - Fabric is reinforced with wire backing or additional support.
  - Posts are spaced closer than pre-manufactured, standard silt fence products.
- Use is generally limited to areas affected by high winds.
- Area draining to fence produces moderate sediment loads.

Materials

Standard Silt Fence

- Silt fence material should be woven geotextile with a minimum width of 36 in. The fabric should conform to the requirements in ASTM designation D6461.
- Wooden stakes should be commercial quality lumber of the size and shape shown on the plans. Each stake should be free from decay, splits or cracks longer than the

thickness of the stake or other defects that would weaken the stakes and cause the stakes to be structurally unsuitable.

- Staples used to fasten the fence fabric to the stakes should be not less than 1.75 in. long and should be fabricated from 15 gauge or heavier wire. The wire used to fasten the tops of the stakes together when joining two sections of fence should be 9 gauge or heavier wire. Galvanizing of the fastening wire will not be required.

Heavy-Duty Silt Fence

- Some silt fence has a wire backing to provide additional support, and there are products that may use prefabricated plastic holders for the silt fence and use metal posts instead of wood stakes.

Installation Guidelines – Traditional Method

Silt fences are to be constructed on a level contour. Sufficient area should exist behind the fence for ponding to occur without flooding or overtopping the fence.

- A trench should be excavated approximately 6 in. wide and 6 in. deep along the line of the proposed silt fence (trenches should not be excavated wider or deeper than necessary for proper silt fence installation).
- Bottom of the silt fence should be keyed-in a minimum of 12 in.
- Posts should be spaced a maximum of 6 ft apart and driven securely into the ground a minimum of 18 in. or 12 in. below the bottom of the trench.
- When standard strength geotextile is used, a plastic or wire mesh support fence should be fastened securely to the upslope side of posts using heavy–duty wire staples at least 1 in. long. The mesh should extend into the trench.
- When extra-strength geotextile and closer post spacing are used, the mesh support fence may be eliminated.
- Woven geotextile should be purchased in a long roll, then cut to the length of the barrier. When joints are necessary, geotextile should be spliced together only at a support post, with a minimum 6 in. overlap and both ends securely fastened to the post.
- The trench should be backfilled with native material and compacted.
- Construct the length of each reach so that the change in base elevation along the reach does not exceed 1/3 the height of the barrier; in no case should the reach exceed 500 ft.
- Cross barriers should be a minimum of 1/3 and a maximum of ½ the height of the linear barrier.
- See typical installation details at the end of this fact sheet.

Installation Guidelines - Static Slicing Method

- Static Slicing is defined as insertion of a narrow blade pulled behind a tractor, similar to a plow blade, at least 10 inches into the soil while at the same time pulling silt geotextile fabric into the ground through the opening created by the blade to the depth of the blade. Once the geotextile is installed, the soil is compacted using tractor tires.
- This method will not work with pre-fabricated, wire backed silt fence.
- Benefits:
    - Ease of installation (most often done with a 2 person crew).
    - Minimal soil disturbance.
    - Better level of compaction along fence, less susceptible to undercutting
    - Uniform installation.
- Limitations:
    - Does not work in shallow or rocky soils.
    - Complete removal of geotextile material after use is difficult.
    - Be cautious when digging near potential underground utilities.

Costs

- It should be noted that costs vary greatly across regions due to available supplies and labor costs.
- Average annual cost for installation using the traditional silt fence installation method (assumes 6 month useful life) is $7 per linear foot based on vendor research. Range of cost is $3.50 - $9.10 per linear foot.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Repair undercut silt fences.
- Repair or replace split, torn, slumping, or weathered fabric. The lifespan of silt fence fabric is generally 5 to 8 months.
- Silt fences that are damaged and become unsuitable for the intended purpose should be removed from the site of work, disposed, and replaced with new silt fence barriers.
- Sediment that accumulates in the BMP should be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when the sediment accumulation reaches 1/3 of the barrier height.
- Silt fences should be left in place until the upgradient area is permanently stabilized. Until then, the silt fence should be inspected and maintained regularly.

- Remove silt fence when upgradient areas are stabilized. Fill and compact post holes and anchor trench, remove sediment accumulation, grade fence alignment to blend with adjacent ground, and stabilize disturbed area.

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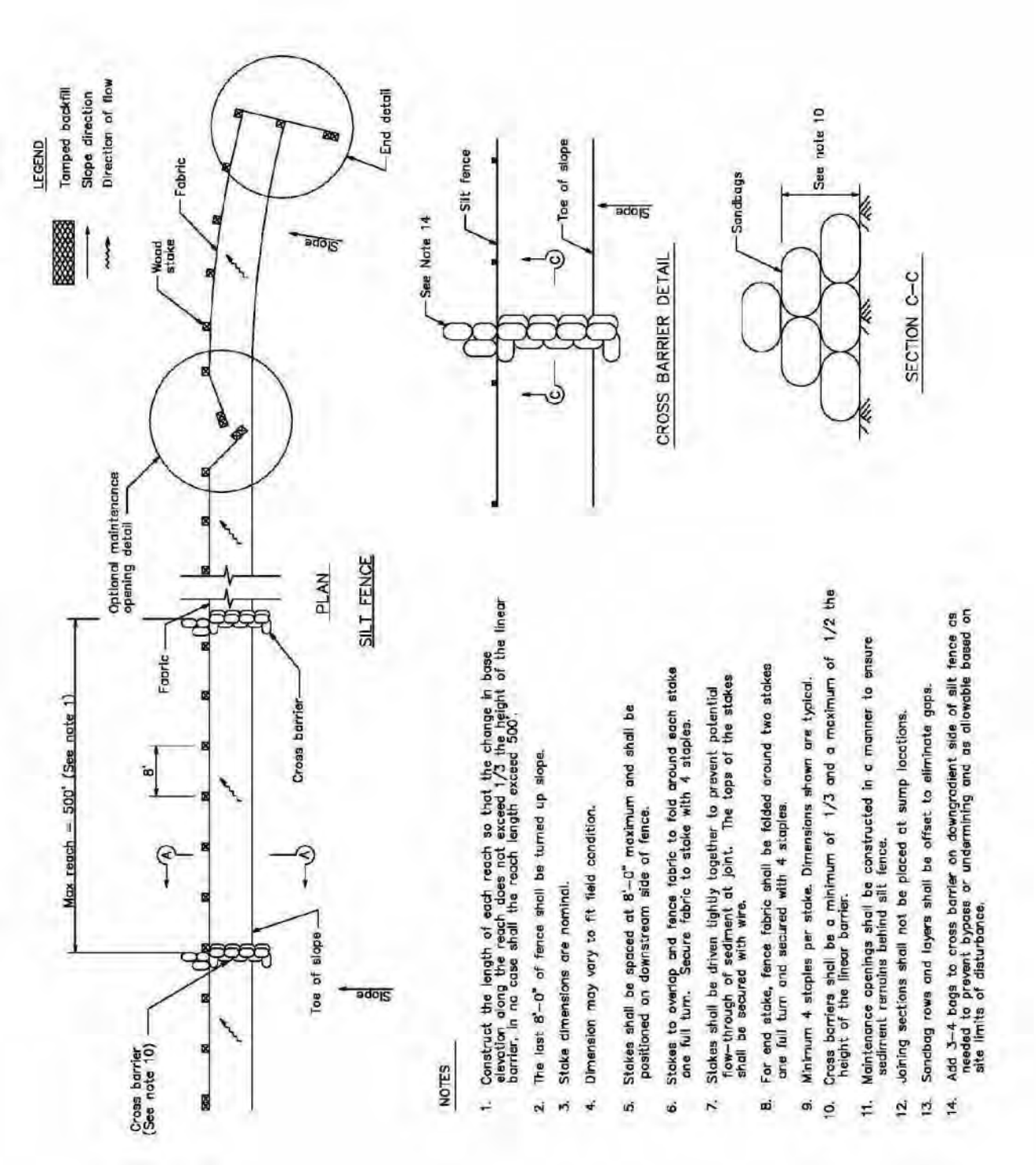
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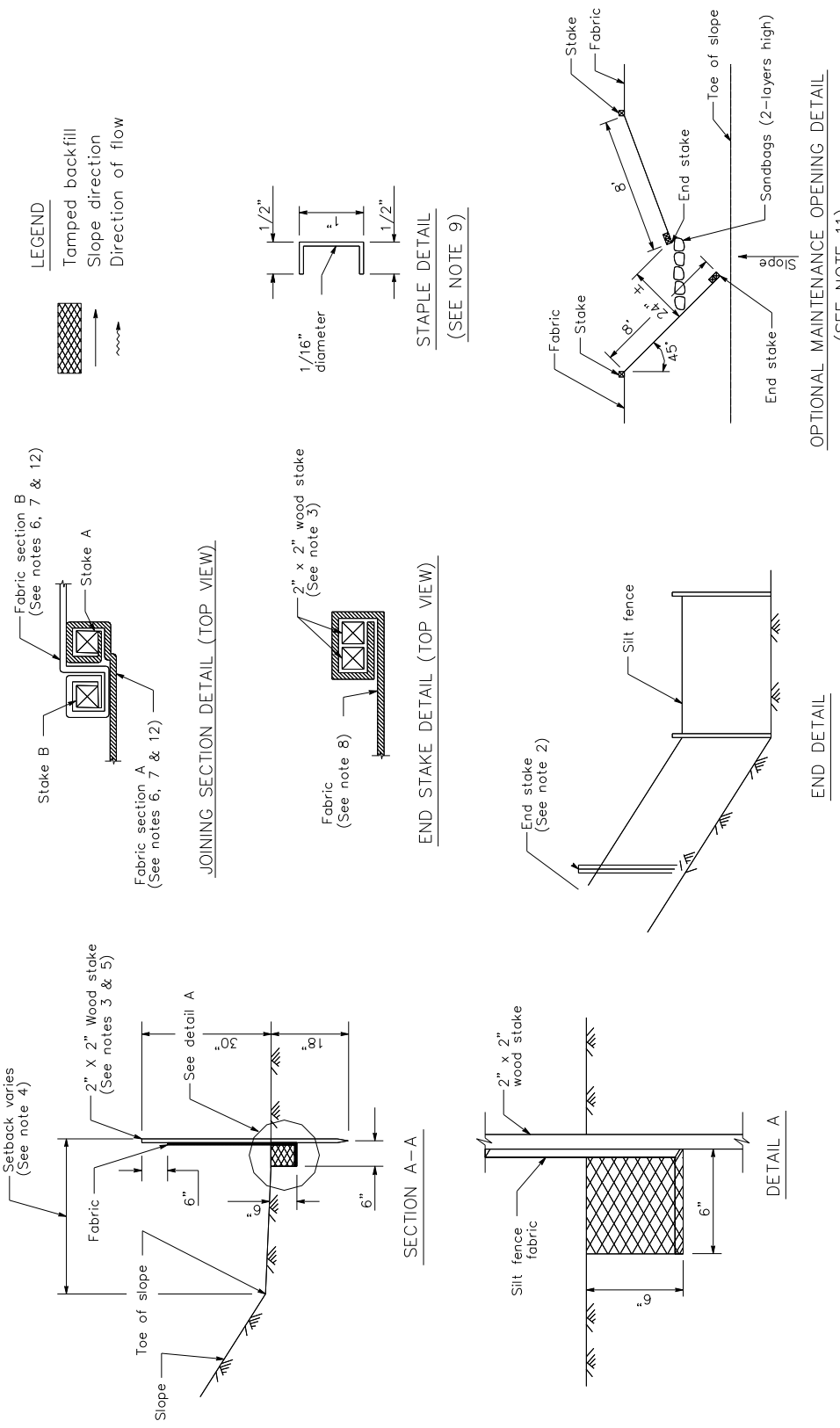
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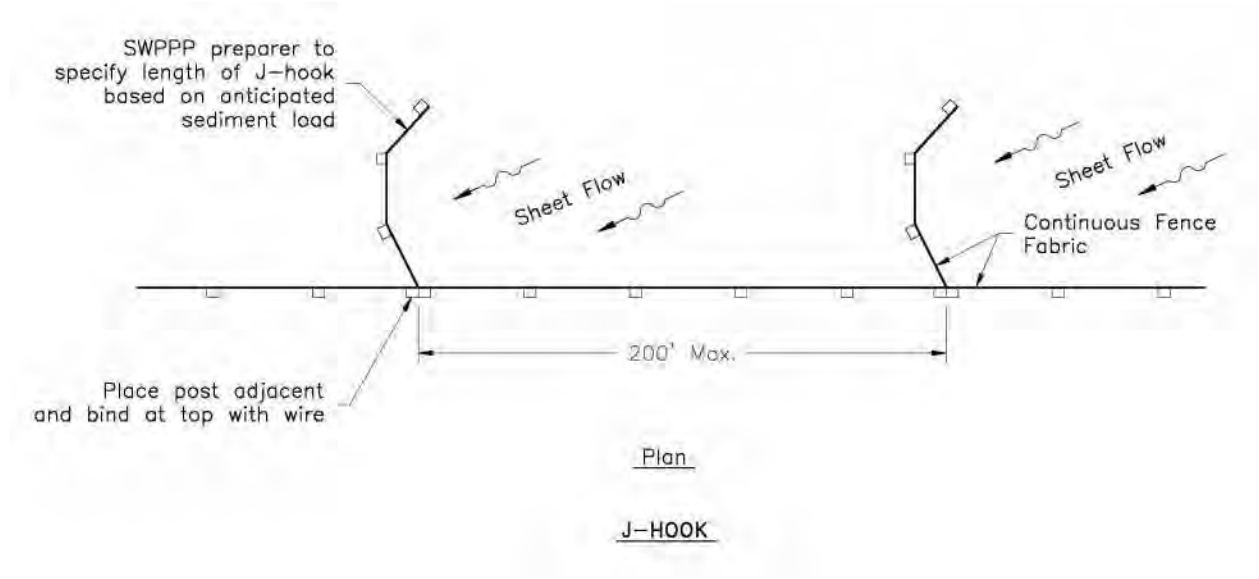
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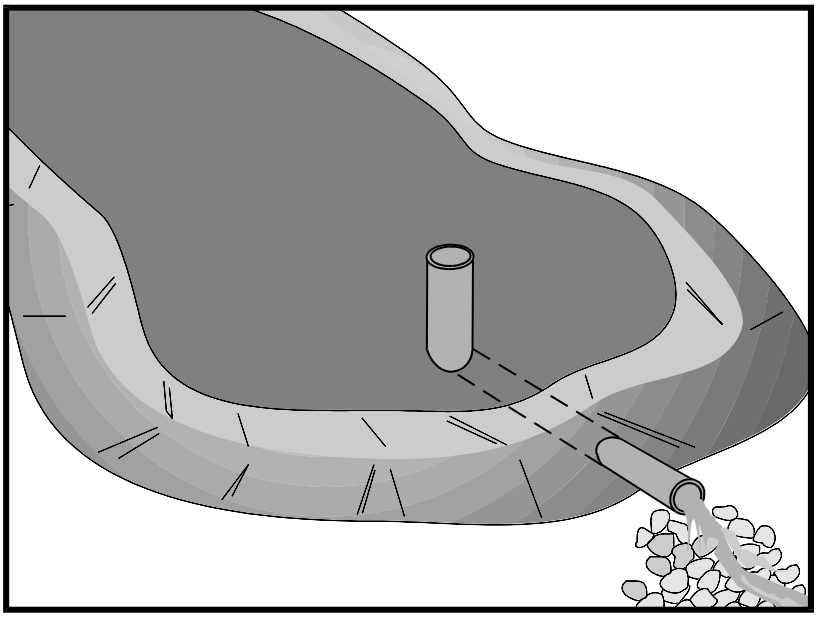
NOTES

1. Construct the length of each reach so that the change in base elevation along the reach does not exceed 1/3 the height of the linear barrier, in no case shall the reach length exceed 500'.
2. The last 8'-0" of fence shall be turned up slope.
3. Stake dimensions are nominal.
4. Dimension may vary to fit field condition.
5. Stakes shall be spaced at 8'-0" maximum and shall be positioned on downstream side of fence.
6. Stakes to overlap and fence fabric to fold around each stake one full turn. Secure fabric to stake with 4 staples.
7. Stakes shall be driven tightly together to prevent potential flow-through of sediment at joint. The tops of the stakes shall be secured with wire.
8. For end stake, fence fabric shall be folded around two stakes one full turn and secured with 4 staples.
9. Minimum 4 staples per stake. Dimensions shown are typical.
10. Cross barriers shall be a minimum of 1/3 and a maximum of 1/2 the height of the linear barrier.
11. Maintenance openings shall be constructed in a manner to ensure sediment remains behind silt fence.
12. Joining sections shall not be placed at sump locations.
13. Sandbag rows and layers shall be offset to eliminate gaps.
14. Add 3-4 bags to cross barrier on downgradient side of silt fence as needed to prevent bypass or undermining and as allowable based on site limits of disturbance.


LEGEND
Tamped backfill
Slope direction
Direction of flow
1/2"
1"
1/2"
1/16" diameter
STAPLE DETAIL
(SEE NOTE 9)
Stake
Fabric
Toe of slope
8'
End stake
Sandbags (2-layers high)
Slope
Fabric
Stake
8'
4'
2'
45°
End stake
OPTIONAL MAINTENANCE OPENING DETAIL
(SEE NOTE 11)
Fabric section B
(See notes 6, 7 & 12)
Stake A
Stake B
Fabric section A
(See notes 6, 7 & 12)
JOINING SECTION DETAIL (TOP VIEW)
2" x 2" wood stake
(See note 3)
Fabric
(See note 8)
END STAKE DETAIL (TOP VIEW)
Silt fence
End stake
(See note 2)
END DETAIL
Setback varies
(See note 4)
2" X 2" Wood stake
(See notes 3 & 5)
See detail A
30"
18"
Fabric
6"
6"
6"
Toe of slope
Slope
SECTION A-A
2" x 2"
wood stake
Silt fence
fabric
6"
6"
DETAIL A


SWPPP preparer to specify length of J-hook based on anticipated sediment load
Sheet Flow
Sheet Flow
Continuous Fence Fabric
200' Max.
Place post adjacent and bind at top with wire
Plan
J-HOOK

Sediment Basin SE-2



Description and Purpose

A sediment basin is a temporary basin formed by excavation or by constructing an embankment so that sediment-laden runoff is temporarily detained under quiescent conditions, allowing sediment to settle out before the runoff is released.

Sediment basin design guidance presented in this fact sheet is intended to provide options, methods, and techniques to optimize temporary sediment basin performance and basin sediment removal. Basin design guidance provided in this fact sheet is not intended to guarantee basin effluent compliance with numeric discharge limits (numeric action levels or numeric effluent limits for turbidity). Compliance with discharge limits requires a thoughtful approach to comprehensive BMP planning, implementation, and maintenance. Therefore, optimally designed and maintained sediment basins should be used in conjunction with a comprehensive system of BMPs that includes:

- Diverting runoff from undisturbed areas away from the basin
- Erosion control practices to minimize disturbed areas on-site and to provide temporary stabilization and interim sediment controls (e.g., stockpile perimeter control, check dams, perimeter controls around individual lots) to reduce the basin's influent sediment concentration.

At some sites, sediment basin design enhancements may be required to adequately remove sediment. Traditional

Categories

EC	Erosion Control	
SE	Sediment Control	☑
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Category**

☒ **Secondary Category**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	☑
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

SE-3 Sediment Trap (for smaller areas)

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(a.k.a. "physical") enhancements such as alternative outlet configurations or flow deflection baffles increase detention time and other techniques such as outlet skimmers preferentially drain flows with lower sediment concentrations. These "physical" enhancement techniques are described in this fact sheet. To further enhance sediment removal particularly at sites with fine soils or turbidity sensitive receiving waters, some projects may need to consider implementing Active Treatment Systems (ATS) whereby coagulants and flocculants are used to enhance settling and removal of suspended sediments. Guidance on implementing ATS is provided in SE-11.

Suitable Applications

Sediment basins may be suitable for use on larger projects with sufficient space for constructing the basin. Sediment basins should be considered for use:

- Where sediment-laden water may enter the drainage system or watercourses
- On construction projects with disturbed areas during the rainy season
- At the outlet of disturbed watersheds between 5 acres and 75 acres and evaluated on a site by site basis
- Where post construction detention basins are required
- In association with dikes, temporary channels, and pipes used to convey runoff from disturbed areas

Limitations

Sediment basins must be installed only within the property limits and where failure of the structure will not result in loss of life, damage to homes or buildings, or interruption of use or service of public roads or utilities. In addition, sediment basins are attractive to children and can be very dangerous. Local ordinances regarding health and safety must be adhered to. If fencing of the basin is required, the type of fence and its location should be shown in the SWPPP and in the construction specifications.

- As a general guideline, sediment basins are suitable for drainage areas of 5 acres or more, but not appropriate for drainage areas greater than 75 acres. However, the tributary area should be evaluated on a site by site basis.
- Sediment basins may become an "attractive nuisance" and care must be taken to adhere to all safety practices. If safety is a concern, basin may require protective fencing.
- Sediment basins designed according to this fact sheet are only effective in removing sediment down to about the silt size fraction. Sediment-laden runoff with smaller size fractions (fine silt and clay) may not be adequately treated unless chemical (or other appropriate method) treatment is used in addition to the sediment basin.
- Basins with a height of 25 ft or more or an impounding capacity of 50 ac-ft or more must obtain approval from California Department of Water Resources Division of Safety of Dams (http://www.water.ca.gov/damsafety/).

- Water that stands in sediment basins longer than 96 hours may become a source of mosquitoes (and midges), particularly along perimeter edges, in shallow zones, in scour or below-grade pools, around inlet pipes, along low-flow channels, and among protected habitats created by emergent or floating vegetation (e.g. cattails, water hyacinth), algal mats, riprap, etc.

- Basins require large surface areas to permit settling of sediment. Size may be limited by the available area.

Implementation

General

A sediment basin is a controlled stormwater release structure formed by excavation or by construction of an embankment of compacted soil across a drainage way, or other suitable location. It is intended to trap sediment before it leaves the construction site. The basin is a temporary measure expected to be used during active construction in most cases and is to be maintained until the site area is permanently protected against erosion or a permanent detention basin is constructed.

Sediment basins are suitable for nearly all types of construction projects. Whenever possible, construct the sediment basins before clearing and grading work begins. Basins should be located at the stormwater outlet from the site but not in any natural or undisturbed stream. A typical application would include temporary dikes, pipes, and/or channels to convey runoff to the basin inlet.

Many development projects in California are required by local ordinances to provide a stormwater detention basin for post-construction flood control, desilting, or stormwater pollution control. A temporary sediment basin may be constructed by rough grading the post-construction control basins early in the project.

Sediment basins if properly designed and maintained can trap a significant amount of the sediment that flows into them. However, traditional basins do not remove all inflowing sediment. Therefore, they should be used in conjunction with erosion control practices such as temporary seeding, mulching, diversion dikes, etc., to reduce the amount of sediment flowing into the basin.

Planning

To improve the effectiveness of the basin, it should be located to intercept runoff from the largest possible amount of disturbed area. Locations best suited for a sediment basin are generally in lower elevation areas of the site (or basin tributary area) where site drainage would not require significant diversion or other means to direct water to the basin but outside jurisdictional waterways. However, as necessary, drainage into the basin can be improved by the use of earth dikes and drainage swales (see BMP EC-9). . The basin should not be located where its failure would result in the loss of life or interruption of the use or service of public utilities or roads.

Construct before clearing and grading work begins when feasible.

- Do not locate the basin in a jurisdictional stream.

- Basin sites should be located where failure of the structure will not cause loss of life, damage to homes or buildings, or interruption of use or service of public roads or utilities.
- Basins with a height of 25 ft or more or an impounding capacity of 50 ac-ft must obtain approval from the Division of Dam Safety. Local dam safety requirements may be more stringent.
- Limit the contributing area to the sediment basin to only the runoff from the disturbed soil areas. Use temporary concentrated flow conveyance controls to divert runoff from undisturbed areas away from the sediment basin.
- The basin should be located: (1) by excavating a suitable area or where a low embankment can be constructed across a swale, (2) where post-construction (permanent) detention basins will be constructed, and (3) where the basins can be maintained on a year-round basis to provide access for maintenance, including sediment removal and sediment stockpiling in a protected area, and to maintain the basin to provide the required capacity.

Design

When designing a sediment basin, designers should evaluate the site constraints that could affect the efficiency of the BMP. Some of these constraints include: the relationship between basin capacity, anticipated sediment load, and freeboard, available footprint for the basin, maintenance frequency and access, and hydraulic capacity and efficiency of the temporary outlet infrastructure. Sediment basins should be designed to maximize sediment removal and to consider sediment load retained by the basin as it affects basin performance.

Three Basin Design Options (Part A) are presented below along with a Typical Sediment/Detention Basin Design Methodology (Part B). Regardless of the design option that is selected, designers also need to evaluate the sediment basin capacity with respect to sediment accumulation (See "*Step 3. Evaluate the Capacity of the Sediment Basin"),* and should incorporate approaches identified in "*Step 4. Other Design Considerations*" to enhance basin performance.

A) Basin Design Options:

Option 1:

Design sediment basin(s) using the standard equation:

$$A_s = \frac{1.2Q}{V_s} \qquad \text{(Eq. 1)}$$

Where:

A_s = Minimum surface area for trapping soil particles of a certain size

V_s = Settling velocity of the design particle size chosen (V_s = 0.00028 ft/s for a design particle size of 0.01 mm at 68°F)

1.2 = Factor of safety recommended by USEPA to account for the reduction in basin efficiency caused due to turbulence and other non ideal conditions.

$Q = CIA$ (Eq.2)

Where

Q = Peak basin influent flow rate measured in cubic feet per second (ft^3/s)

C = Runoff coefficient (unitless)

I = Peak rainfall intensity for the 10-year, 6-hour rain event (in/hr)

A = Area draining into the sediment basin in acres

The design particle size should be the smallest soil grain size determined by wet sieve analysis, or the fine silt sized (0.01 mm [or 0.0004 in.]) particle, and the Vs used should be 100 percent of the calculated settling velocity.

This sizing basin method is dependent on the outlet structure design or the total basin length with an appropriate outlet. If the designer chooses to utilize the outlet structure to control the flow duration in the basin, the basin length (distance between the inlet and the outlet) should be a minimum of twice the basin width; the depth should not be less than 3 ft nor greater than 5 ft for safety reasons and for maximum efficiency (2 ft of sediment storage, 2 ft of capacity). If the designer chooses to utilize the basin length (with appropriate basin outlet) to control the flow duration in the basin, the basin length (distance between the inlet and the outlet) should be a specifically designed to capture 100% of the design particle size; the depth should not be less than 3 ft nor greater than 5 ft for safety reasons and for maximum efficiency (2 ft of sediment storage, 2 ft of capacity).

Basin design guidance provided herein assumes standard water properties (e.g., estimated average water temperature, kinematic viscosity, etc.) as a basis of the design. Designers can use an alternative design (Option 3) with site specific water properties as long as the design is as protective as Option 1.

The design guidance uses the peak influent flow rate to size sediment basins. Designers can use an alternative design (Option 3) with site specific average flow rates as long as the design is as protective as Option 1.

The basin should be located on the site where it can be maintained on a year-round basis and should be maintained on a schedule to retain the 2 ft of capacity.

Option 2:

Design pursuant to local ordinance for sediment basin design and maintenance, provided that the design efficiency is as protective or more protective of water quality than Option 1.

Option 3:

The use of an equivalent surface area design or equation provided that the design efficiency is as protective or more protective of water quality than Option 1.

B) Typical Sediment/Detention Basin Design Methodology:

Design of a sediment basin requires the designer to have an understanding of the site constraints, knowledge of the local soil (e.g., particle size distribution of potentially contributing soils), drainage area of the basin, and local hydrology. Designers should not assume that a sediment basin for location A is applicable to location B. Therefore, designers can use this factsheet as guidance but will need to apply professional judgment and knowledge of the site to design an effective and efficient sediment basin. The following provides a general overview of typical design methodologies:

Step 1. Hydrologic Design

- Evaluate the site constraints and assess the drainage area for the sediment basin. Designers should consider on- and off-site flows as well as changes in the drainage area associated with site construction/disturbance. To minimize additional construction during the course of the project, the designer should consider identifying the maximum drainage area when calculating the basin dimensions.

- If a local hydrology manual is not available it is recommended to follow standard rational method procedures to estimate the flow rate. The references section of this factsheet provides a reference to standard hydrology textbooks that can provide standard methodologies. If local rainfall depths are not available, values can be obtained from standard precipitation frequency maps from NOAA (downloaded from http://www.wrcc.dri.edu/pcpnfreq.html).

Step 2. Hydraulic Design

- Calculate the surface area required for the sediment basin using Equation 1. In which the flow rate is estimated for a 10-yr 6-hr event using rational method procedure listed in local hydrology manual and Vs is estimated using Stokes Law presented in Equation 3.

$$V_s = 2.81d^2 \qquad \text{(Eq.3)}$$

Where

V_s = Settling velocity in feet per second at 68°F

d = diameter of sediment particle in millimeters (smallest soil grain size determined by wet sieve analysis or fine silt (0.01 mm [or 0.0004 in.])

- In general the basin outlet design requires an iterative trial and error approach that considered the maximum water surface elevation, the elevation versus volume (stage-storage) relationship, the elevation verses basin outflow (a.k.a.-discharge) relationship, and the estimated inflow hydrograph. To adequately design the basins to settle sediment, the outlet configuration and associated outflow rates can be estimated by numerous methodologies. The following provides some guidance for design the basin outlet:

  - An outlet should have more than one orifice.

  - An outlet design typically utilizes multiple horizontal rows of orifices (approximately 3 or more) with at least 2 orifices per row (see Figures 1 and 2 at the end of this fact sheet).

- Orifices can vary in shape.
- Select the appropriate orifice diameter and number of perforations per row with the objective of minimizing the number of rows while maximizing the detention time.
- The diameter of each orifice is typically a maximum of 3-4 inches and a minimum of 0.25-0.5 inches.
- If a rectangular orifice is used, it is recommended to have minimum height of 0.5 inches and a maximum height of 6 inches.
- Rows are typically spaced at three times the diameter center to center vertically with a minimum distance of approximately 4 inches on center and a maximum distance of 1 foot on center.
- To estimate the outflow rate, each row is calculated separately based on the flow through a single orifice then multiplied by the number of orifices in the row. This step is repeated for each of the rows. Once all of the orifices are estimated, the total outflow rate versus elevation (stage-discharge curve) is developed to evaluate the detention time within the basin.
- Flow through a single orifice can be estimated using an Equation 4:

$$Q = BC'A(2gH)^{0.5} \qquad \text{(Eq.4)}$$

Where
Q = Outflow rate in ft^3/s
C′ = Orifice coefficient (unitless)
A = Area of the orifice (ft^2)
g = acceleration due to gravity (ft^3/s)
H = Head above the orifice (ft)
B = Anticipated Blockage or clogging factor (unitless), It is dependent on anticipated sediment and debris load, trash rack configuration etc, so the value is dependent on design engineers professional judgment and/or local requirements (B is never greater than 1 and a value of 0.5 is generally used)

  - Care must be taken in the selection of orifice coefficient ("C′"); 0.60 is most often recommended and used. However, based on actual tests, Young and Graziano (1989), "Outlet Hydraulics of Extended Detention Facilities for Northern Virginia Planning District Commission", recommends the following:
    - C′ = 0.66 for thin materials; where the thickness is equal to or less than the orifice diameter, or
    - C′ = 0.80 when the material is thicker than the orifice diameter
- If different sizes of orifices are used along the riser then they have to be sized such that not more than 50 percent of the design storm event drains in one-third of the drawdown time (to provide adequate settling time for events smaller than the design storm event)

and the entire volume drains within 96 hours or as regulated by the local vector control agency. If a basin fails to drain within 96 hours, the basin must be pumped dry.

- Because basins are not maintained for infiltration, water loss by infiltration should be disregarded when designing the hydraulic capacity of the outlet structure.

- Floating Outlet Skimmer: The floating skimmer (see Figure 3 at the end of this fact sheet is an alternative outlet configuration (patented) that drains water from upper portion of the water column. This configuration has been used for temporary and permanent basins and can improve basin performance by eliminating bottom orifices which have the potential of discharging solids. Some design considerations for this alternative outlet device includes the addition of a sand filter or perforated under drain at the low point in the basin and near the floating skimmer. These secondary drains allow the basin to fully drain. More detailed guidelines for sizing the skimmer can be downloaded from http://www.fairclothskimmer.com/.

- Hold and Release Valve: An ideal sediment/detention basin would hold all flows to the design storm level for sufficient time to settle solids, and then slowly release the storm water. Implementing a reliable valve system for releasing detention basins is critical to eliminate the potential for flooding in such a system. Some variations of hold and release valves include manual valves, bladder devices or electrically operated valves. When a precipitation event is forecast, the valve would be close for the duration of the storm and appropriate settling time. When the settling duration is met (approximately 24 or 48 hours), the valve would be opened and allow the stormwater to be released at a rate that does not resuspend settled solids and in a non-erosive manner. If this type of system is used the valve should be designed to empty the entire basin within 96 hours or as stipulated by local vector control regulations.

Step 3. Evaluate the Capacity of the Sediment Basin

- Typically, sediment basins do not perform as designed when they are not properly maintained or the sediment yield to the basin is larger than expected. As part of a good sediment basin design, designers should consider maintenance cycles, estimated soil loss and/or sediment yield, and basin sediment storage volume. The two equations below can be used to quantify the amount of soil entering the basin.

- The Revised Universal Soil Loss Equation (RUSLE, Eq.5) can be used to estimate annual soil loss and the Modified Universal Soil Equation (MUSLE, Eq.6) can be used to estimate sediment yield from a single storm event.

$$A = R \times K \times LS \times C \times P \qquad \text{(Eq.5)}$$

$$Y = 95(Q \times q_p)^{0.56} \times K \times LS \times C \times P \qquad \text{(Eq.6)}$$

Where:

A = annual soil loss, tons/acre-year

R = rainfall erosion index, in 100 ft.tons/acre.in/hr

K = soil erodibility factor, tons/acre per unit of R

LS = slope length and steepness factor (unitless)

C = vegetative cover factor (unitless)

P = erosion control practice factor (unitless)

Y = single storm sediment yield in tons

Q = runoff volume in acre-feet

q_p = peak flow in cfs

- Detailed descriptions and methodologies for estimating the soil loss can be obtained from standard hydrology text books (See References section).
- Determination of the appropriate equation should consider construction duration and local environmental factors (soils, hydrology, etc.). For example, if a basin is planned for a project duration of 1 year and the designer specifies one maintenance cycle, RUSLE could be used to estimate the soil loss and thereby the designer could indicate that the sediment storage volume would be half of the soil loss value estimated. As an example for use of MUSLE, a project may have a short construction duration thereby requiring fewer maintenance cycles and a reduced sediment storage volume. MUSLE would be used to estimate the anticipated soil loss based on a specific storm event to evaluate the sediment storage volume and appropriate maintenance frequency.
- The soil loss estimates are an essential step in the design and it is essential that the designer provide construction contractors with enough information to understand maintenance frequency and/or depths within the basin that would trigger maintenance. Providing maintenance methods, frequency and specification should be included in design bid documents such as the SWPPP Site Map.
- Once the designer has quantified the amount of soil entering the basin, the depth required for sediment storage can be determined by dividing the estimated sediment loss by the surface area of the basin.

Step 4. Other Design Considerations

- Consider designing the volume of the settling zone for the total storm volume associated with the 2-year event or other appropriate design storms specified by the local agency. This volume can be used as a guide for sizing the basin without iterative routing calculations. The depth of the settling zone can be estimated by dividing the estimated 2-yr storm volume by the surface area of the basin.
- The basin volume consists of two zones:
  - A sediment storage zone at least 1 ft deep.
  - A settling zone at least 2 ft deep.

- The basin depth must be no less than 3 ft (not including freeboard).

- Proper hydraulic design of the outlet is critical to achieving the desired performance of the basin. The outlet should be designed to drain the basin within 24 to 96 hours (also referred to as "drawdown time"). The 24-hour limit is specified to provide adequate settling time; the 96-hour limit is specified to mitigate vector control concerns.

- Confirmation of the basin performance can be evaluated by routing the design storm (10-yr 6-hr, or as directed by local regulations) through the basin based on the basin volume (stage-storage curve) and the outlet design (stage-discharge curve based on the orifice configuration or equivalent outlet design).

- Sediment basins, regardless of size and storage volume, should include features to accommodate overflow or bypass flows that exceed the design storm event.

  - Include an emergency spillway to accommodate flows not carried by the principal spillway. The spillway should consist of an open channel (earthen or vegetated) over undisturbed material (not fill) or constructed of a non-erodible riprap (or equivalent protection) on fill slopes.

  - The spillway control section, which is a level portion of the spillway channel at the highest elevation in the channel, should be a minimum of 20 ft in length.

- Rock, vegetation or appropriate erosion control should be used to protect the basin inlet, outlet, and slopes against erosion.

- The total depth of the sediment basin should include the depth required for sediment storage, depth required for settling zone and freeboard of at least 1 foot or as regulated by local flood control agency for a flood event specified by the local agency.

- The basin alignment should be designed such that the length of the basin is more than twice the width of the basin; the length should be determined by measuring the distance between the inlet and the outlet. If the site topography does not allow for this configuration baffles should be installed so that the ratio is satisfied. If a basin has more than one inflow point, any inflow point that conveys more than 30 percent of the total peak inflow rate has to meet the required length to width ratio.

- An alternative basin sizing method proposed by Fifield (2004) can be consulted to estimate an alternative length to width ratio and basin configuration. These methods can be considered as part of Option 3 which allows for alternative designs that are protective or more protective of water quality.

- Baffles (see Figure 4 at the end of this fact sheet) can be considered at project sites where the existing topography or site constraints limit the length to width ratio. Baffles should be constructed of earthen berms or other structural material within the basin to divert flow in the basin, thus increasing the effective flow length from the basin inlet to the outlet riser. Baffles also reduce the change of short circuiting and allows for settling throughout the basin.

- Baffles are typically constructed from the invert of the basin to the crest of the emergency spillway (i.e., design event flows are meant to flow around the baffles and flows greater than the design event would flow over the baffles to the emergency spillway).
- Use of other materials for construction of basin baffles (such as silt fence) may not be appropriate based on the material specifications and will require frequent maintenance (maintain after every storm event). Maintenance may not be feasible when required due to flooded conditions resulting from frequent (i.e., back to back) storm events. Use of alternative baffle materials should not deviate from the intended purpose of the material, as described by the manufacturer.
- Sediment basins are best used in conjunction with erosion controls.
- Basins with an impounding levee greater than 4.5 ft tall, measured from the lowest point to the impounding area to the highest point of the levee, and basins capable of impounding more than 35,000 ft^3, should be designed by a Registered Civil Engineer. The design should include maintenance requirements, including sediment and vegetation removal, to ensure continuous function of the basin outlet and bypass structures.
- A forebay, constructed upstream of the basin, may be provided to remove debris and larger particles.
- The outflow from the sediment basin should be provided with velocity dissipation devices (see BMP EC-10) to prevent erosion and scouring of the embankment and channel.
- The principal outlet should consist of a corrugated metal, high density polyethylene (HDPE), or reinforced concrete riser pipe with dewatering holes and an anti-vortex device and trash rack attached to the top of the riser, to prevent floating debris from flowing out of the basin or obstructing the system. This principal structure should be designed to accommodate the inflow design storm.
- A rock pile or rock-filled gabions can serve as alternatives to the debris screen, although the designer should be aware of the potential for extra maintenance involved should the pore spaces in the rock pile clog.
- The outlet structure should be placed on a firm, smooth foundation with the base securely anchored with concrete or other means to prevent floatation.
- Attach riser pipe (watertight connection) to a horizontal pipe (barrel). Provide anti-seep collars on the barrel.
- Cleanout level should be clearly marked on the riser pipe.

Installation

- Securely anchor and install an anti-seep collar on the outlet pipe/riser and provide an emergency spillway for passing major floods (see local flood control agency).
- Areas under embankments must be cleared and stripped of vegetation.

- Chain link fencing should be provided around each sediment basin to prevent unauthorized entry to the basin or if safety is a concern.

Costs

The cost of a sediment basin is highly variable and is dependent of the site configuration. To decrease basin construction costs, designers should consider using existing site features such as berms or depressed area to site the sediment basin. Designers should also consider potential savings associated with designing the basin to minimize the number of maintenance cycles and siting the basin in a location where a permanent BMP (e.g., extended detention basin) is required for the project site.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level and as required by local requirements. It is recommended that at a minimum, basins be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Examine basin banks for seepage and structural soundness.
- Check inlet and outlet structures and spillway for any damage or obstructions. Repair damage and remove obstructions as needed.
- Check inlet and outlet area for erosion and stabilize if required.
- Check fencing for damage and repair as needed.
- Sediment that accumulates in the basin must be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when sediment accumulation reaches one-half the designated sediment storage volume. Sediment removed during maintenance should be managed properly. The sediment should be appropriately evaluated and used or disposed of accordingly. Options include: incorporating sediment into earthwork on the site (only if there is no risk that sediment is contaminated); or off-site export/disposal at an appropriate location (e.g., sediment characterization and disposal to an appropriate landfill).
- Remove standing water from basin within 96 hours after accumulation.
- If the basin does not drain adequately (e.g., due to storms that are more frequent or larger than the design storm or other unforeseen site conditions), dewatering should be conducted in accordance with appropriate dewatering BMPs (see NS-2) and in accordance with local permits as applicable.
- To minimize vector production:
  - Remove accumulation of live and dead floating vegetation in basins during every inspection.
  - Remove excessive emergent and perimeter vegetation as needed or as advised by local or state vector control agencies.

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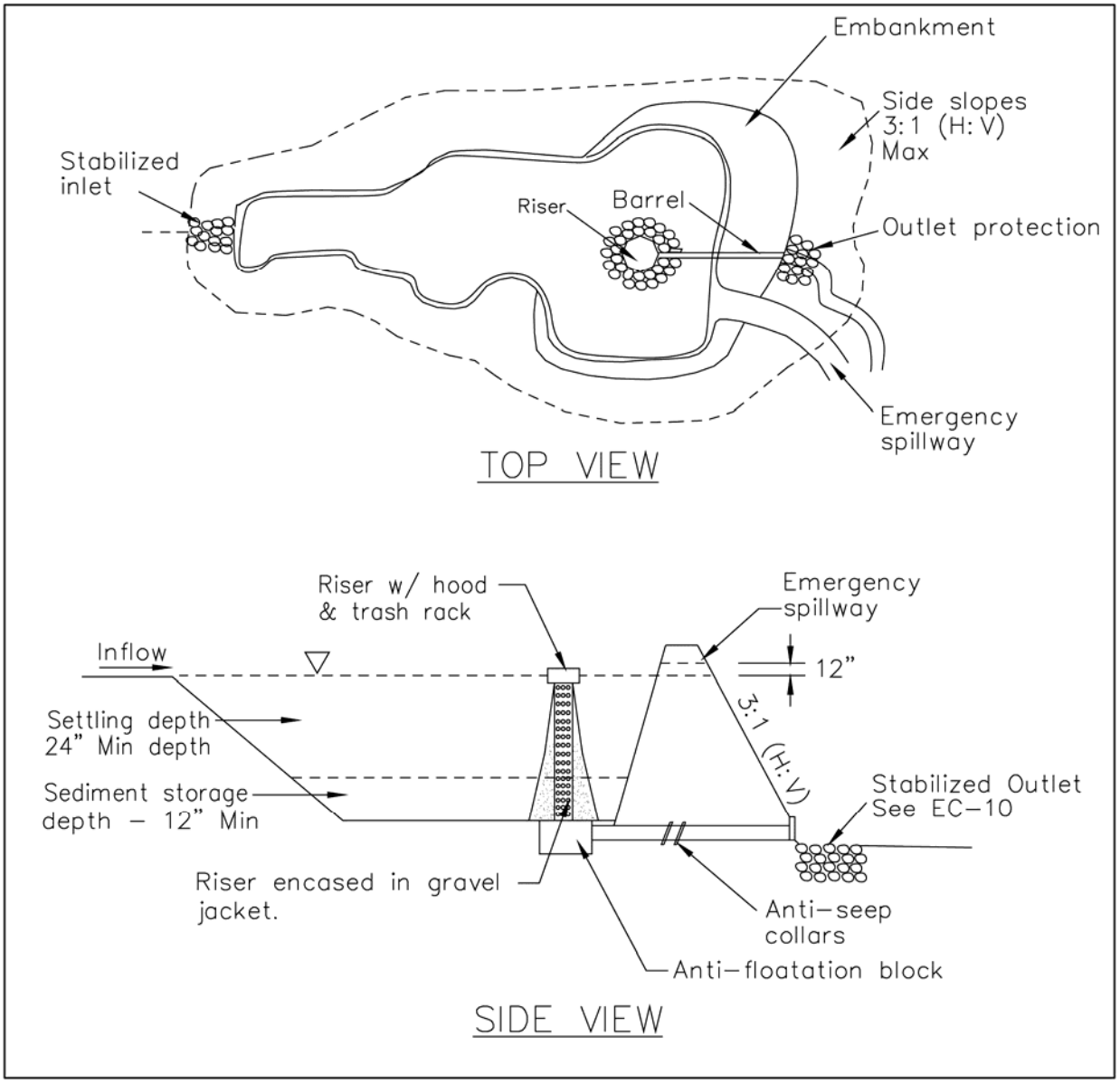


FIGURE 1: TYPICAL TEMPORARY SEDIMENT BASIN
MULTIPLE ORIFICE DESIGN
NOT TO SCALE

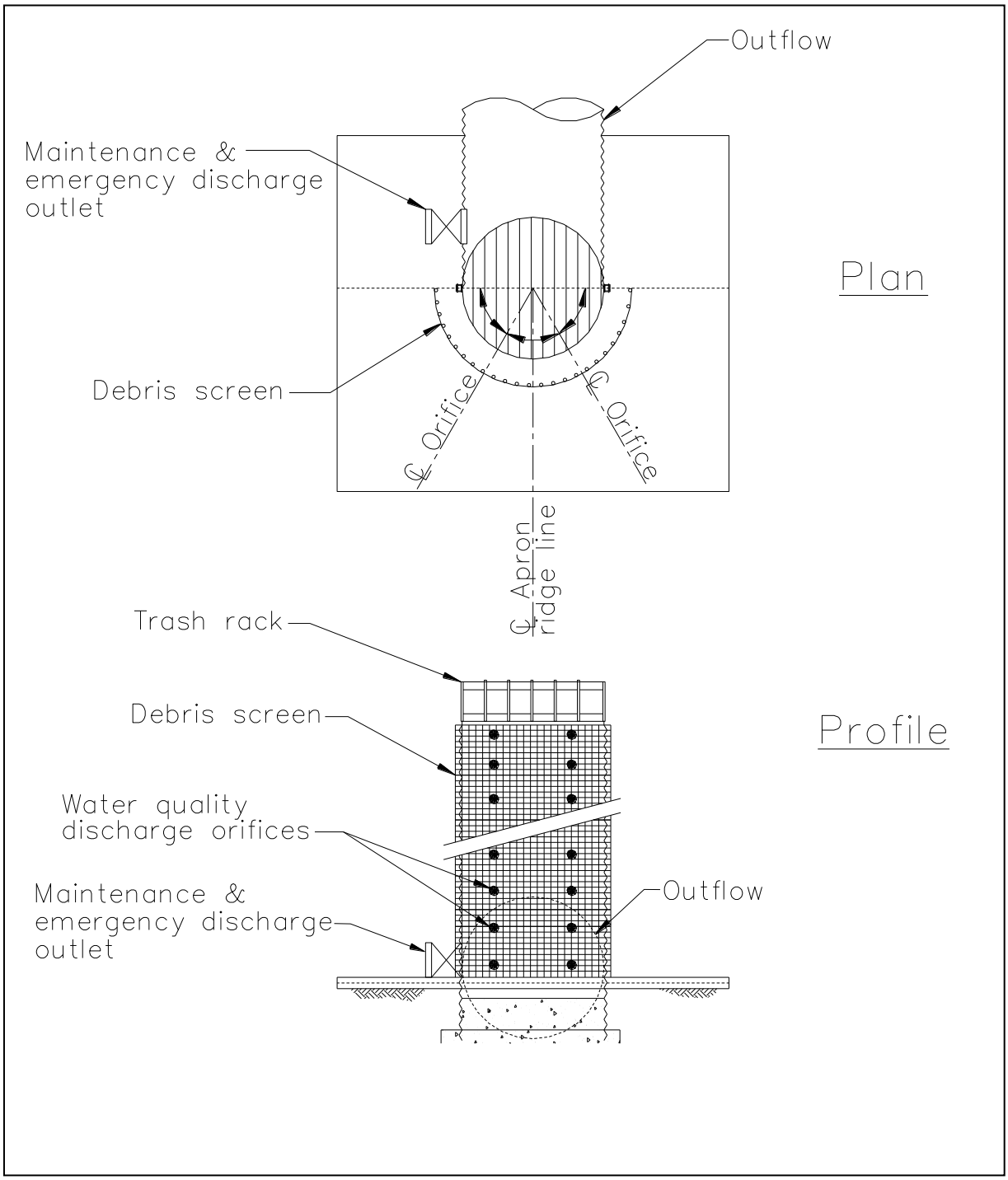


FIGURE 2: MULTIPLE ORIFICE OUTLET RISER

NOT TO SCALE

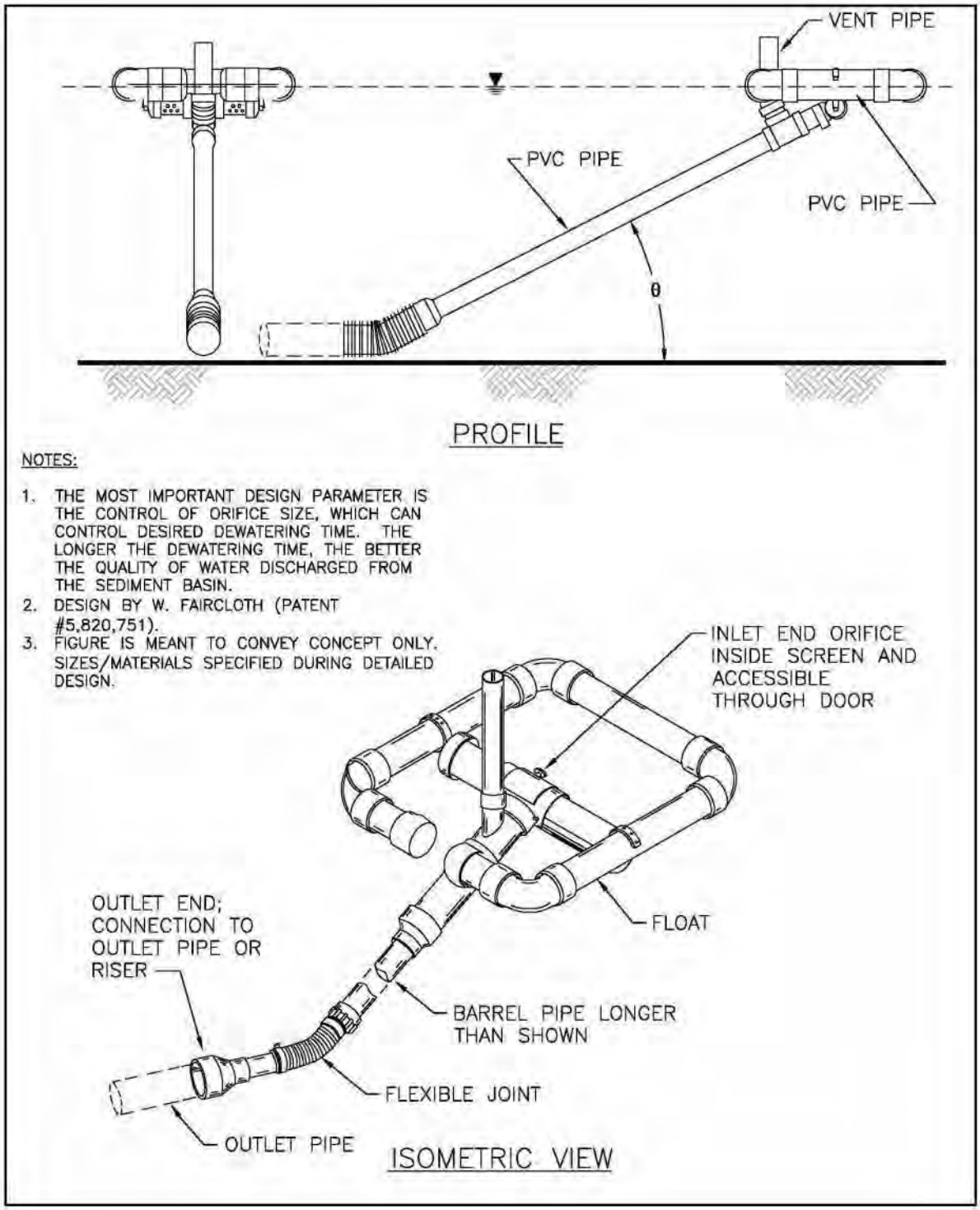


FIGURE 3: TYPICAL SKIMMER
NOT TO SCALE

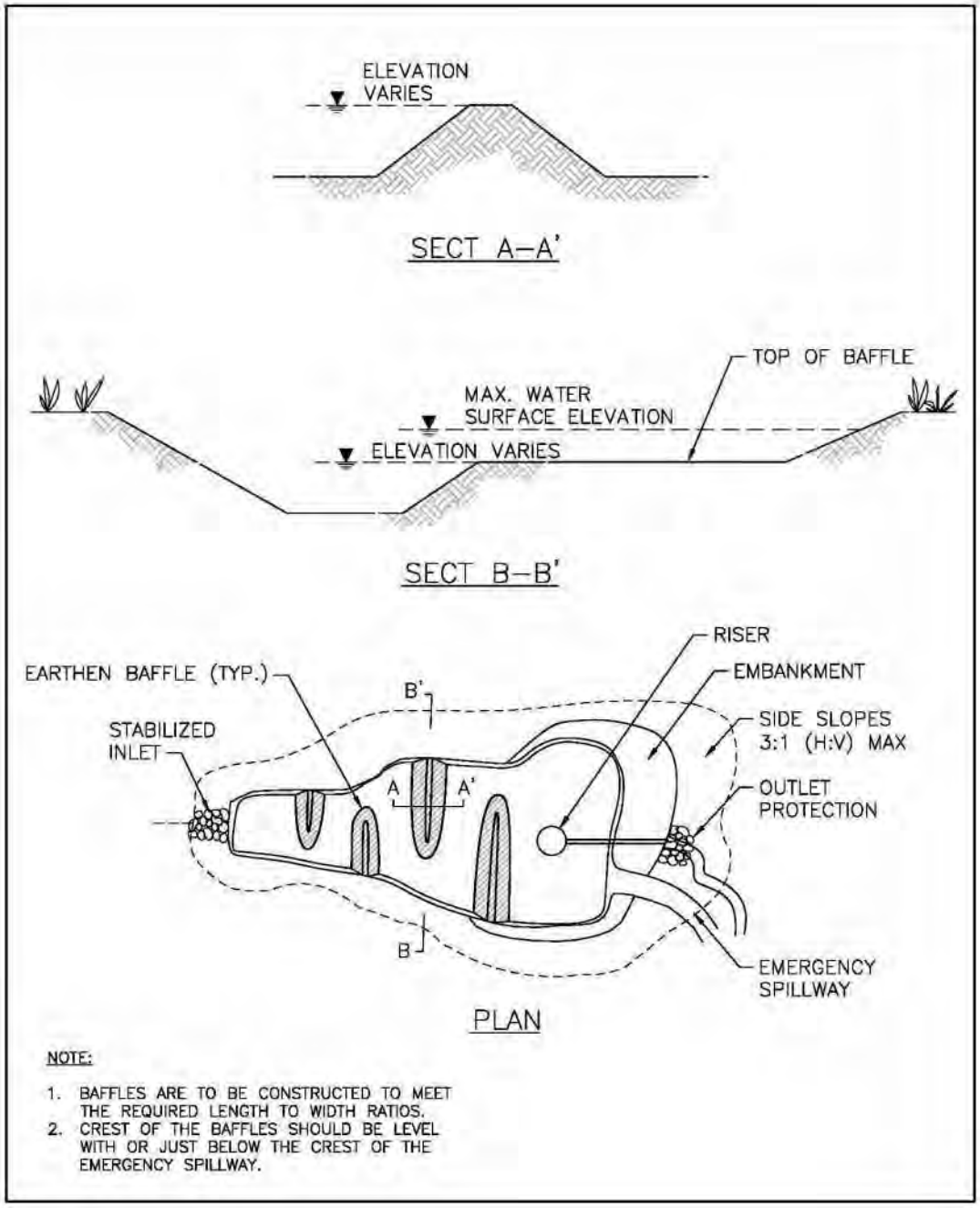
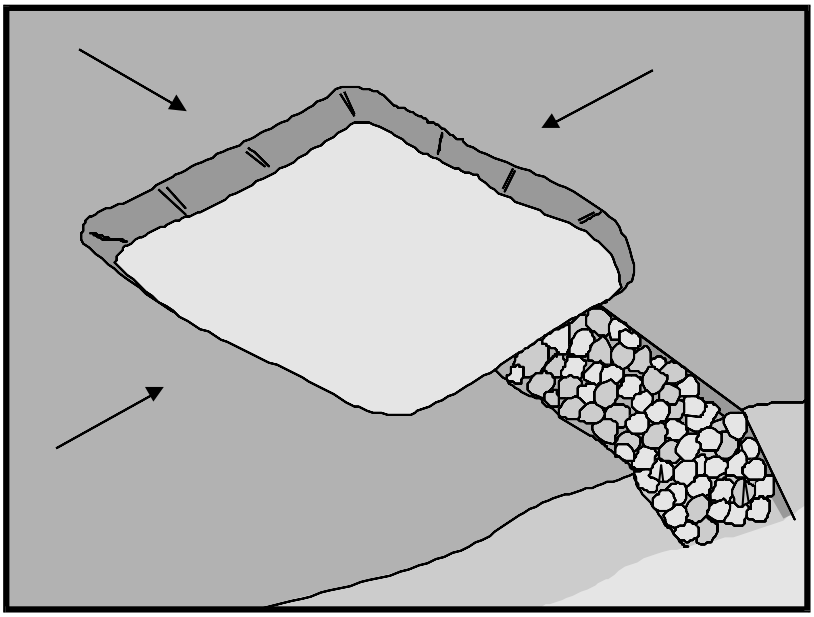


FIGURE 4: TYPICAL TEMPORARY SEDIMENT BASIN WITH BAFFLES
NOT TO SCALE

Sediment Trap SE-3



Categories		
EC	Erosion Control	
SE	Sediment Control	☑
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ **Primary Objective**
☒ **Secondary Objective**

Targeted Constituents	
Sediment	☑
Nutrients	
Trash	☑
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

SE-2 Sediment Basin (for larger areas)

Description and Purpose

A sediment trap is a containment area where sediment-laden runoff is temporarily detained under quiescent conditions, allowing sediment to settle out or before the runoff is discharged by gravity flow. Sediment traps are formed by excavating or constructing an earthen embankment across a waterway or low drainage area.

Trap design guidance provided in this fact sheet is not intended to guarantee compliance with numeric discharge limits (numeric action levels or numeric effluent limits for turbidity). Compliance with discharge limits requires a thoughtful approach to comprehensive BMP planning, implementation, and maintenance. Therefore, optimally designed and maintained sediment traps should be used in conjunction with a comprehensive system of BMPs.

Suitable Applications

Sediment traps should be considered for use:

- At the perimeter of the site at locations where sediment-laden runoff is discharged offsite.
- At multiple locations within the project site where sediment control is needed.
- Around or upslope from storm drain inlet protection measures.
- Sediment traps may be used on construction projects where the drainage area is less than 5 acres. Traps would be

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placed where sediment-laden stormwater may enter a storm drain or watercourse. SE-2, Sediment Basins, must be used for drainage areas greater than 5 acres.

- As a supplemental control, sediment traps provide additional protection for a water body or for reducing sediment before it enters a drainage system.

Limitations

- Requires large surface areas to permit infiltration and settling of sediment.
- Not appropriate for drainage areas greater than 5 acres.
- Only removes large and medium sized particles and requires upstream erosion control.
- Attractive and dangerous to children, requiring protective fencing.
- Conducive to vector production.
- Should not be located in live streams.

Implementation

Design

A sediment trap is a small temporary ponding area, usually with a gravel outlet, formed by excavation or by construction of an earthen embankment. Its purpose is to collect and store sediment from sites cleared or graded during construction. It is intended for use on small drainage areas with no unusual drainage features and projected for a quick build-out time. It should help in removing coarse sediment from runoff. The trap is a temporary measure with a design life of approximately six months to one year and is to be maintained until the site area is permanently protected against erosion by vegetation and/or structures.

Sediment traps should be used only for small drainage areas. If the contributing drainage area is greater than 5 acres, refer to SE-2, Sediment Basins, or subdivide the catchment area into smaller drainage basins.

Sediment usually must be removed from the trap after each rainfall event. The SWPPP should detail how this sediment is to be disposed, such as in fill areas onsite, or removal to an approved offsite dump. Sediment traps used as perimeter controls should be installed before any land disturbance takes place in the drainage area.

Sediment traps are usually small enough that a failure of the structure would not result in a loss of life, damage to home or buildings, or interruption in the use of public roads or utilities. However, sediment traps are attractive to children and can be dangerous. The following recommendations should be implemented to reduce risks:

- Install continuous fencing around the sediment trap or pond. Consult local ordinances regarding requirements for maintaining health and safety.
- Restrict basin side slopes to 3:1 or flatter.

Sediment trap size depends on the type of soil, size of the drainage area, and desired sediment removal efficiency (see SE-2, Sediment Basin). As a rule of thumb, the larger the basin volume

the greater the sediment removal efficiency. Sizing criteria are typically established under the local grading ordinance or equivalent. The runoff volume from a 2-year storm is a common design criteria for a sediment trap. The sizing criteria below assume that this runoff volume is 0.042 acre-ft/acre (0.5 in. of runoff). While the climatic, topographic, and soil type extremes make it difficult to establish a statewide standard, the following criteria should trap moderate to high amounts of sediment in most areas of California:

- Locate sediment traps as near as practical to areas producing the sediment.
- Trap should be situated according to the following criteria: (1) by excavating a suitable area or where a low embankment can be constructed across a swale, (2) where failure would not cause loss of life or property damage, and (3) to provide access for maintenance, including sediment removal and sediment stockpiling in a protected area.
- Trap should be sized to accommodate a settling zone and sediment storage zone with recommended minimum volumes of 67 yd^3/acre and 33 yd^3/acre of contributing drainage area, respectively, based on 0.5 in. of runoff volume over a 24-hour period. In many cases, the size of an individual trap is limited by available space. Multiple traps or additional volume may be required to accommodate specific rainfall, soil, and site conditions.
- Traps with an impounding levee greater than 4.5 ft tall, measured from the lowest point to the impounding area to the highest point of the levee, and traps capable of impounding more than 35,000 ft^3, should be designed by a Registered Civil Engineer. The design should include maintenance requirements, including sediment and vegetation removal, to ensure continuous function of the trap outlet and bypass structures.
- The outlet pipe or open spillway must be designed to convey anticipated peak flows.
- Use rock or vegetation to protect the trap outlets against erosion.
- Fencing should be provided to prevent unauthorized entry.

Installation

Sediment traps can be constructed by excavating a depression in the ground or creating an impoundment with a small embankment. Sediment traps should be installed outside the area being graded and should be built prior to the start of the grading activities or removal of vegetation. To minimize the area disturbed by them, sediment traps should be installed in natural depressions or in small swales or drainage ways. The following steps must be followed during installation:

- The area under the embankment must be cleared, grubbed, and stripped of any vegetation and root mat. The pool area should be cleared.
- The fill material for the embankment must be free of roots or other woody vegetation as well as oversized stones, rocks, organic material, or other objectionable material. The embankment may be compacted by traversing with equipment while it is being constructed.
- All cut-and-fill slopes should be 3:1 or flatter.
- When a riser is used, all pipe joints must be watertight.

- When a riser is used, at least the top two-thirds of the riser should be perforated with 0.5 in. diameter holes spaced 8 in. vertically and 10 to 12 in. horizontally. See SE-2, Sediment Basin.
- When an earth or stone outlet is used, the outlet crest elevation should be at least 1 ft below the top of the embankment.
- When crushed stone outlet is used, the crushed stone used in the outlet should meet AASHTO M43, size No. 2 or 24, or its equivalent such as MSHA No. 2. Gravel meeting the above gradation may be used if crushed stone is not available.

Costs

Average annual cost per installation and maintenance (18 month useful life) is $0.73 per ft^3 ($1,300 per drainage acre). Maintenance costs are approximately 20% of installation costs.

Inspection and Maintenance

- Inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Inspect outlet area for erosion and stabilize if required.
- Inspect trap banks for seepage and structural soundness, repair as needed.
- Inspect outlet structure and spillway for any damage or obstructions. Repair damage and remove obstructions as needed.
- Inspect fencing for damage and repair as needed.
- Inspect the sediment trap for area of standing water during every visit. Corrective measures should be taken if the BMP does not dewater completely in 96 hours or less to prevent vector production.
- Sediment that accumulates in the BMP must be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when the sediment accumulation reaches one-third of the trap capacity. Sediment removed during maintenance may be incorporated into earthwork on the site or disposed of at an appropriate location.
- Remove vegetation from the sediment trap when first detected to prevent pools of standing water and subsequent vector production.
- BMPs that require dewatering shall be continuously attended while dewatering takes place. Dewatering BMPs per NS-2 shall be implemented at all times during dewatering activities.

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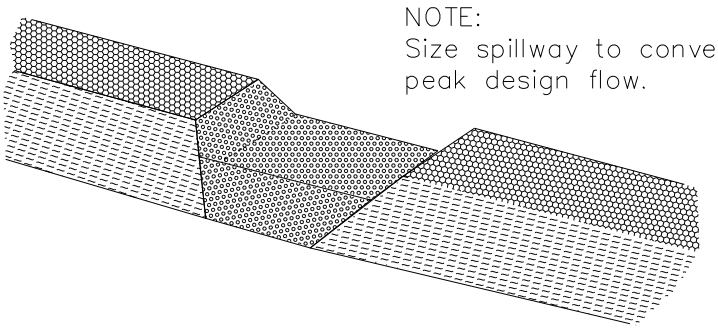
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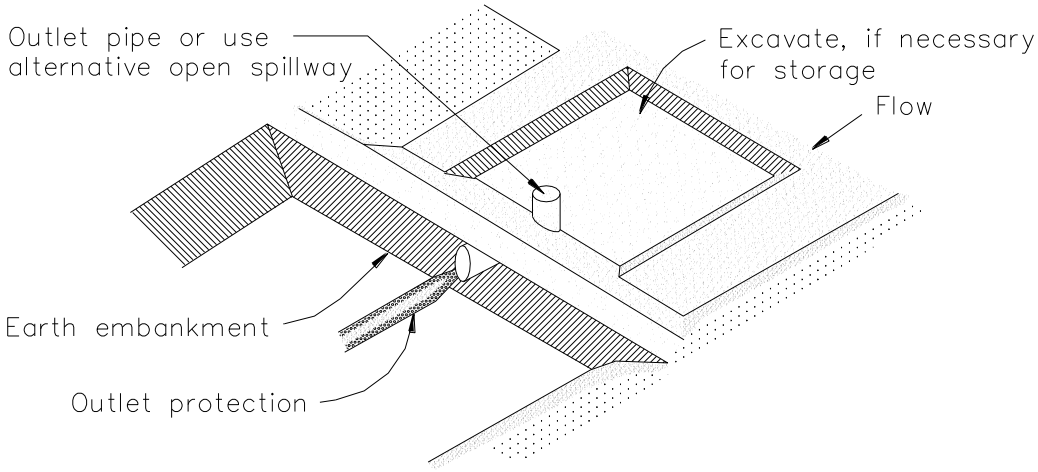
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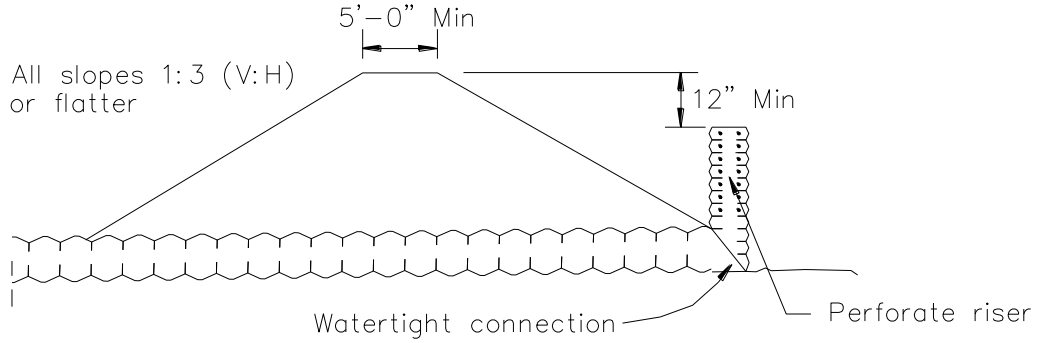
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TYPICAL OPEN SPILLWAY

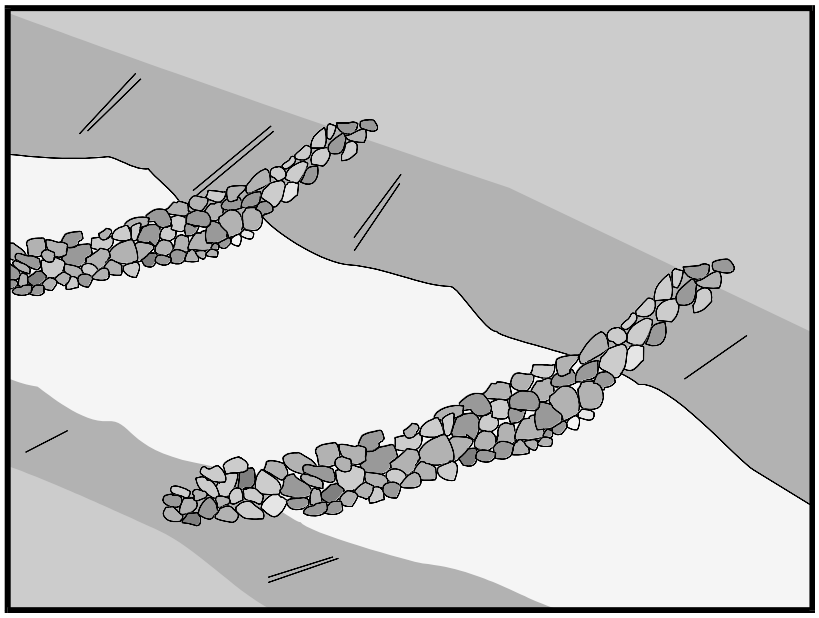




EMBANKMENT SECTION THRU RISER

TYPICAL SEDIMENT TRAP
NOT TO SCALE

Check Dams SE-4



Description and Purpose

A check dam is a small barrier constructed of rock, gravel bags, sandbags, fiber rolls, or other proprietary products, placed across a constructed swale or drainage ditch. Check dams reduce the effective slope of the channel, thereby reducing scour and channel erosion by reducing flow velocity and increasing residence time within the channel, allowing sediment to settle.

Suitable Applications

Check dams may be appropriate in the following situations:

- To promote sedimentation behind the dam.
- To prevent erosion by reducing the velocity of channel flow in small intermittent channels and temporary swales.
- In small open channels that drain 10 acres or less.
- In steep channels where stormwater runoff velocities exceed 5 ft/s.
- During the establishment of grass linings in drainage ditches or channels.
- In temporary ditches where the short length of service does not warrant establishment of erosion-resistant linings.
- To act as a grade control structure.

Categories

EC	Erosion Control	☒
SE	Sediment Control	☑
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:

☑ **Primary Category**

☒ **Secondary Category**

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

SE-5 Fiber Rolls

SE-6 Gravel Bag Berm

SE-8 Sandbag Barrier

SE-12 Manufactured Linear Sediment Controls

SE-14 Biofilter Bags

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Limitations

- Not to be used in live streams or in channels with extended base flows.
- Not appropriate in channels that drain areas greater than 10 acres.
- Not appropriate in channels that are already grass-lined unless erosion potential or sediment-laden flow is expected, as installation may damage vegetation.
- Require extensive maintenance following high velocity flows.
- Promotes sediment trapping which can be re-suspended during subsequent storms or removal of the check dam.
- Do not construct check dams with straw bales or silt fence.
- Water suitable for mosquito production may stand behind check dams, particularly if subjected to daily non-stormwater discharges.

Implementation

General

Check dams reduce the effective slope and create small pools in swales and ditches that drain 10 acres or less. Using check dams to reduce channel slope reduces the velocity of stormwater flows, thus reducing erosion of the swale or ditch and promoting sedimentation. Thus, check dams are dual-purpose and serve an important role as erosion controls as well as as sediment controls. Note that use of 1-2 isolated check dams for sedimentation will likely result in little net removal of sediment because of the small detention time and probable scour during longer storms. Using a series of check dams will generally increase their effectiveness. A sediment trap (SE-3) may be placed immediately upstream of the check dam to increase sediment removal efficiency.

Design and Layout

Check dams work by decreasing the effective slope in ditches and swales. An important consequence of the reduced slope is a reduction in capacity of the ditch or swale. This reduction in capacity should be considered when using this BMP, as reduced capacity can result in overtopping of the ditch or swale and resultant consequences. In some cases, such as a "permanent" ditch or swale being constructed early and used as a "temporary" conveyance for construction flows, the ditch or swale may have sufficient capacity such that the temporary reduction in capacity due to check dams is acceptable. When check dams reduce capacities beyond acceptable limits, either:

- Don't use check dams. Consider alternative BMPs, or.
- Increase the size of the ditch or swale to restore capacity.

Maximum slope and velocity reduction is achieved when the toe of the upstream dam is at the same elevation as the top of the downstream dam (see "Spacing Between Check Dams" detail at the end of this fact sheet). The center section of the dam should be lower than the edge sections (at least 6 inches), acting as a spillway, so that the check dam will direct flows to the center of

the ditch or swale (see "Typical Rock Check Dam" detail at the end of this fact sheet). Bypass or side-cutting can occur if a sufficient spillway is not provided in the center of the dam.

Check dams are usually constructed of rock, gravel bags, sandbags, and fiber rolls. A number of products can also be used as check dams (e.g. HDPE check dams, temporary silt dikes (SE-12)), and some of these products can be removed and reused. Check dams can also be constructed of logs or lumber, and have the advantage of a longer lifespan when compared to gravel bags, sandbags, and fiber rolls. Check dams should not be constructed from straw bales or silt fences, since concentrated flows quickly wash out these materials.

Rock check dams are usually constructed of 8 to 12 in. rock. The rock is placed either by hand or mechanically, but never just dumped into the channel. The dam should completely span the ditch or swale to prevent washout. The rock used should be large enough to stay in place given the expected design flow through the channel. It is recommended that abutments be extended 18 in. into the channel bank. Rock can be graded such that smaller diameter rock (e.g. 2-4 in) is located on the upstream side of larger rock (holding the smaller rock in place); increasing residence time.

Log check dams are usually constructed of 4 to 6 in. diameter logs, installed vertically. The logs should be embedded into the soil at least 18 in. Logs can be bolted or wired to vertical support logs that have been driven or buried into the soil.

See fiber rolls, SE-5, for installation of fiber roll check dams.

Gravel bag and sand bag check dams are constructed by stacking bags across the ditch or swale, shaped as shown in the drawings at the end of this fact sheet (see "Gravel Bag Check Dam" detail at the end of this fact sheet).

Manufactured products, such as temporary silt dikes (SE-12), should be installed in accordance with the manufacturer's instructions. Installation typically requires anchoring or trenching of products, as well as regular maintenance to remove accumulated sediment and debris.

If grass is planted to stabilize the ditch or swale, the check dam should be removed when the grass has matured (unless the slope of the swales is greater than 4%).

The following guidance should be followed for the design and layout of check dams:

- Install the first check dam approximately 16 ft from the outfall device and at regular intervals based on slope gradient and soil type.
- Check dams should be placed at a distance and height to allow small pools to form between each check dam.
- For multiple check dam installation, backwater from a downstream check dam should reach the toes of the upstream check dam.
- A sediment trap provided immediately upstream of the check dam will help capture sediment. Due to the potential for this sediment to be resuspended in subsequent storms, the sediment trap should be cleaned following each storm event.

- High flows (typically a 2-year storm or larger) should safely flow over the check dam without an increase in upstream flooding or damage to the check dam.
- Where grass is used to line ditches, check dams should be removed when grass has matured sufficiently to protect the ditch or swale.

Materials

- Rock used for check dams should typically be 8-12 in rock and be sufficiently sized to stay in place given expected design flows in the channel. Smaller diameter rock (e.g. 2 to 4 in) can be placed on the upstream side of larger rock to increase residence time.
- Gravel bags used for check dams should conform to the requirements of SE-6, Gravel Bag Berms.
- Sandbags used for check dams should conform to SE-8, Sandbag Barrier.
- Fiber rolls used for check dams should conform to SE-5, Fiber Rolls.
- Temporary silt dikes used for check dams should conform to SE-12, Temporary Silt Dikes.

Installation

- Rock should be placed individually by hand or by mechanical methods (no dumping of rock) to achieve complete ditch or swale coverage.
- Tightly abut bags and stack according to detail shown in the figure at the end of this section (pyramid approach). Gravel bags and sandbags should not be stacked any higher than 3 ft.
- Upper rows or gravel and sand bags shall overlap joints in lower rows.
- Fiber rolls should be trenched in, backfilled, and firmly staked in place.
- Install along a level contour.
- HDPE check dams, temporary silt dikes, and other manufactured products should be used and installed per manufacturer specifications.

Costs

Cost consists of labor costs if materials are readily available (such as gravel on-site). If material must be imported, costs will increase. For other material and installation costs, see SE-5, SE-6, SE-8, SE-12, and SE-14.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Replace missing rock, bags, rolls, etc. Replace bags or rolls that have degraded or have become damaged.

- If the check dam is used as a sediment capture device, sediment that accumulates behind the BMP should be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when the sediment accumulation reaches one-third of the barrier height.
- If the check dam is used as a grade control structure, sediment removal is not required as long as the system continues to control the grade.
- Inspect areas behind check dams for pools of standing water, especially if subjected to daily non-stormwater discharges.
- Remove accumulated sediment prior to permanent seeding or soil stabilization.
- Remove check dam and accumulated sediment when check dams are no longer needed.

References

Draft – Sedimentation and Erosion Control, and Inventory of Current Practices, USEPA, April 1990.

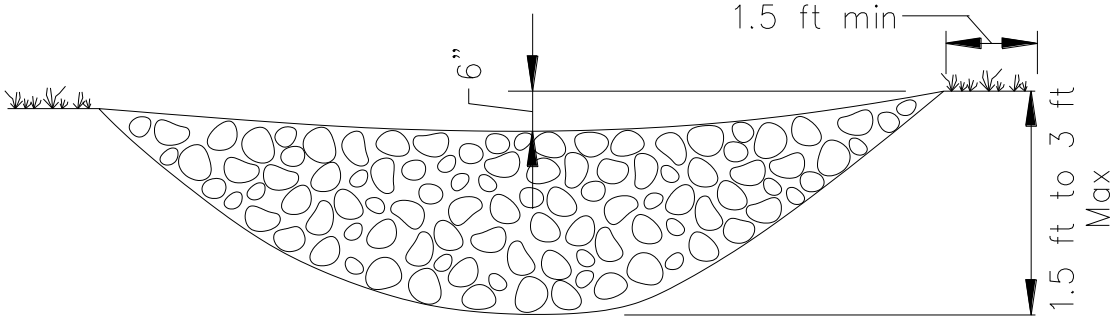
Manual of Standards of Erosion and Sediment Control Measures, Association of Bay Area Governments, May 1995.

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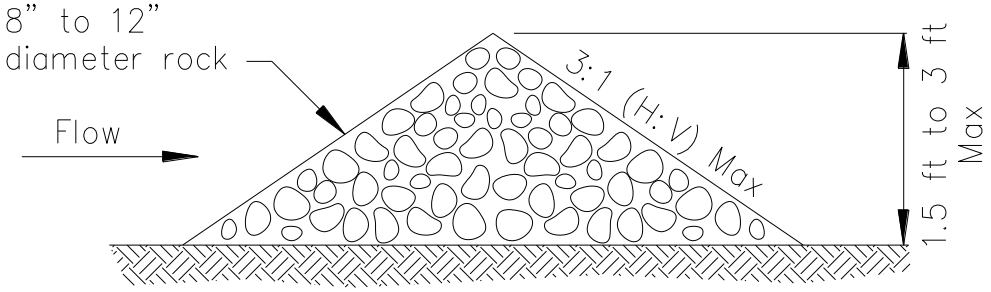
Stormwater Management of the Puget Sound Basin, Technical Manual, Publication #91-75, Washington State Department of Ecology, February 1992.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.

Metzger, M.E. 2004. Managing mosquitoes in stormwater treatment devices. University of California Division of Agriculture and Natural Resources, Publication 8125. On-line: http://anrcatalog.ucdavis.edu/pdf/8125.pdf

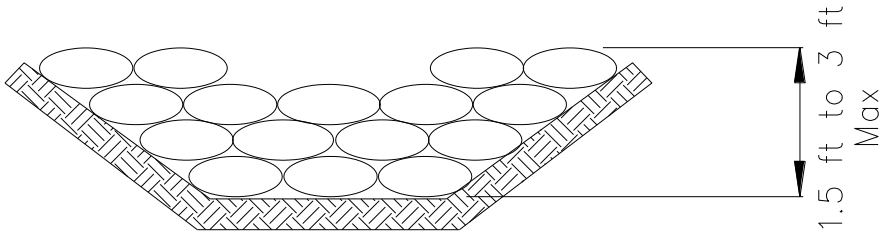


ELEVATION

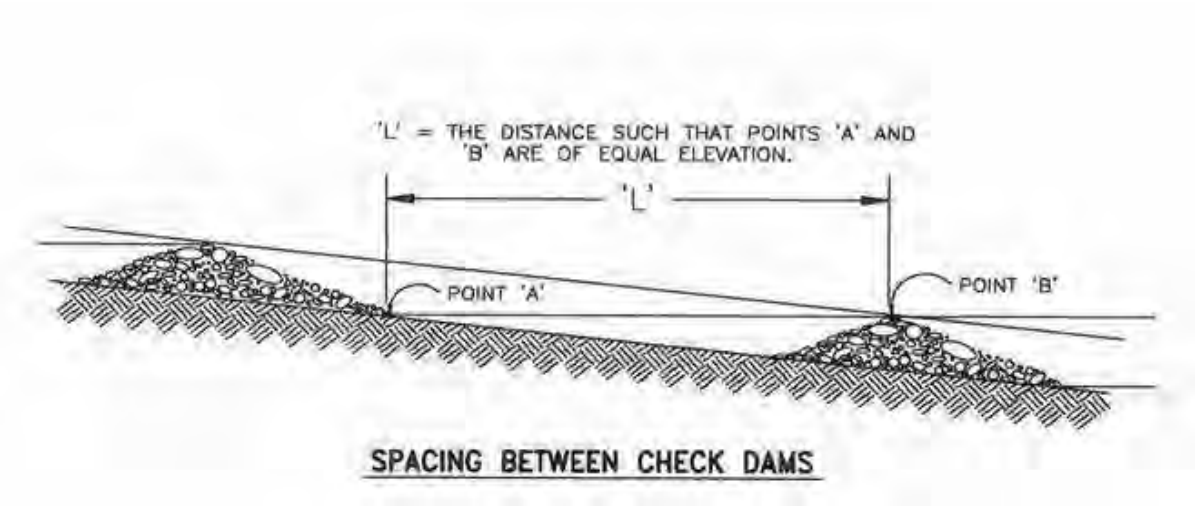


TYPICAL ROCK CHECK DAM SECTION

ROCK CHECK DAM
NOT TO SCALE

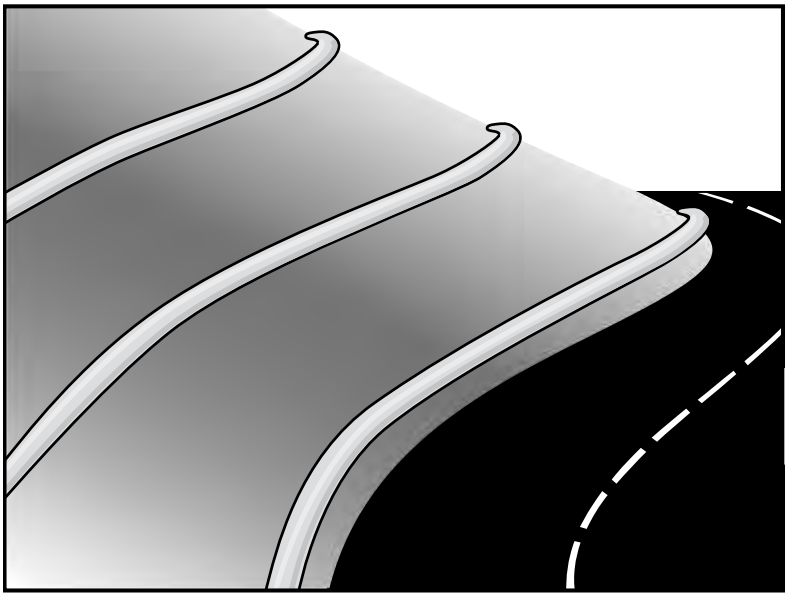


GRAVEL BAG CHECK DAM ELEVATION
NOT TO SCALE



SPACING BETWEEN CHECK DAMS

Fiber Rolls SE-5



Categories

EC	Erosion Control	☒
SE	Sediment Control	☑
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ Primary Category
☒ Secondary Category

Description and Purpose

A fiber roll consists of straw, coir, or other biodegradable materials bound into a tight tubular roll wrapped by netting, which can be photodegradable or natural. Additionally, gravel core fiber rolls are available, which contain an imbedded ballast material such as gravel or sand for additional weight when staking the rolls are not feasible (such as use as inlet protection). When fiber rolls are placed at the toe and on the face of slopes along the contours, they intercept runoff, reduce its flow velocity, release the runoff as sheet flow, and provide removal of sediment from the runoff (through sedimentation). By interrupting the length of a slope, fiber rolls can also reduce sheet and rill erosion until vegetation is established.

Suitable Applications

Fiber rolls may be suitable:

- Along the toe, top, face, and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow.
- At the end of a downward slope where it transitions to a steeper slope.
- Along the perimeter of a project.
- As check dams in unlined ditches with minimal grade.
- Down-slope of exposed soil areas.
- At operational storm drains as a form of inlet protection.

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

SE-1 Silt Fence

SE-6 Gravel Bag Berm

SE-8 Sandbag Barrier

SE-12 Manufactured Linear Sediment Controls

SE-14 Biofilter Bags

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- Around temporary stockpiles.

Limitations

- Fiber rolls are not effective unless trenched in and staked.
- Not intended for use in high flow situations.
- Difficult to move once saturated.
- If not properly staked and trenched in, fiber rolls could be transported by high flows.
- Fiber rolls have a very limited sediment capture zone.
- Fiber rolls should not be used on slopes subject to creep, slumping, or landslide.
- Rolls typically function for 12-24 months depending upon local conditions.

Implementation

Fiber Roll Materials

- Fiber rolls should be prefabricated.
- Fiber rolls may come manufactured containing polyacrylamide (PAM), a flocculating agent within the roll. Fiber rolls impregnated with PAM provide additional sediment removal capabilities and should be used in areas with fine, clayey or silty soils to provide additional sediment removal capabilities. Monitoring may be required for these installations.
- Fiber rolls are made from weed free rice straw, flax, or a similar agricultural material bound into a tight tubular roll by netting.
- Typical fiber rolls vary in diameter from 9 in. to 20 in. Larger diameter rolls are available as well.

Installation

- Locate fiber rolls on level contours spaced as follows:
  - Slope inclination of 4:1 (H:V) or flatter: Fiber rolls should be placed at a maximum interval of 20 ft.
  - Slope inclination between 4:1 and 2:1 (H:V): Fiber Rolls should be placed at a maximum interval of 15 ft. (a closer spacing is more effective).
  - Slope inclination 2:1 (H:V) or greater: Fiber Rolls should be placed at a maximum interval of 10 ft. (a closer spacing is more effective).
- Prepare the slope before beginning installation.
- Dig small trenches across the slope on the contour. The trench depth should be ¼ to 1/3 of the thickness of the roll, and the width should equal the roll diameter, in order to provide area to backfill the trench.

- It is critical that rolls are installed perpendicular to water movement, and parallel to the slope contour.
- Start building trenches and installing rolls from the bottom of the slope and work up.
- It is recommended that pilot holes be driven through the fiber roll. Use a straight bar to drive holes through the roll and into the soil for the wooden stakes.
- Turn the ends of the fiber roll up slope to prevent runoff from going around the roll.
- Stake fiber rolls into the trench.
  - Drive stakes at the end of each fiber roll and spaced 4 ft maximum on center.
  - Use wood stakes with a nominal classification of 0.75 by 0.75 in. and minimum length of 24 in.
- If more than one fiber roll is placed in a row, the rolls should be overlapped, not abutted.
- See typical fiber roll installation details at the end of this fact sheet.

Removal

- Fiber rolls can be left in place or removed depending on the type of fiber roll and application (temporary vs. permanent installation). Typically, fiber rolls encased with plastic netting are used for a temporary application because the netting does not biodegrade. Fiber rolls used in a permanent application are typically encased with a biodegradeable material and are left in place. Removal of a fiber roll used in a permanent application can result in greater disturbance.
- Temporary installations should only be removed when up gradient areas are stabilized per General Permit requirements, and/or pollutant sources no longer present a hazard. But, they should also be removed before vegetation becomes too mature so that the removal process does not disturb more soil and vegetation than is necessary.

Costs

Material costs for regular fiber rolls range from $20 - $30 per 25 ft roll.

Material costs for PAM impregnated fiber rolls range between 7.00-$9.00 per linear foot, based upon vendor research.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- Repair or replace split, torn, unraveling, or slumping fiber rolls.
- If the fiber roll is used as a sediment capture device, or as an erosion control device to maintain sheet flows, sediment that accumulates in the BMP should be periodically removed

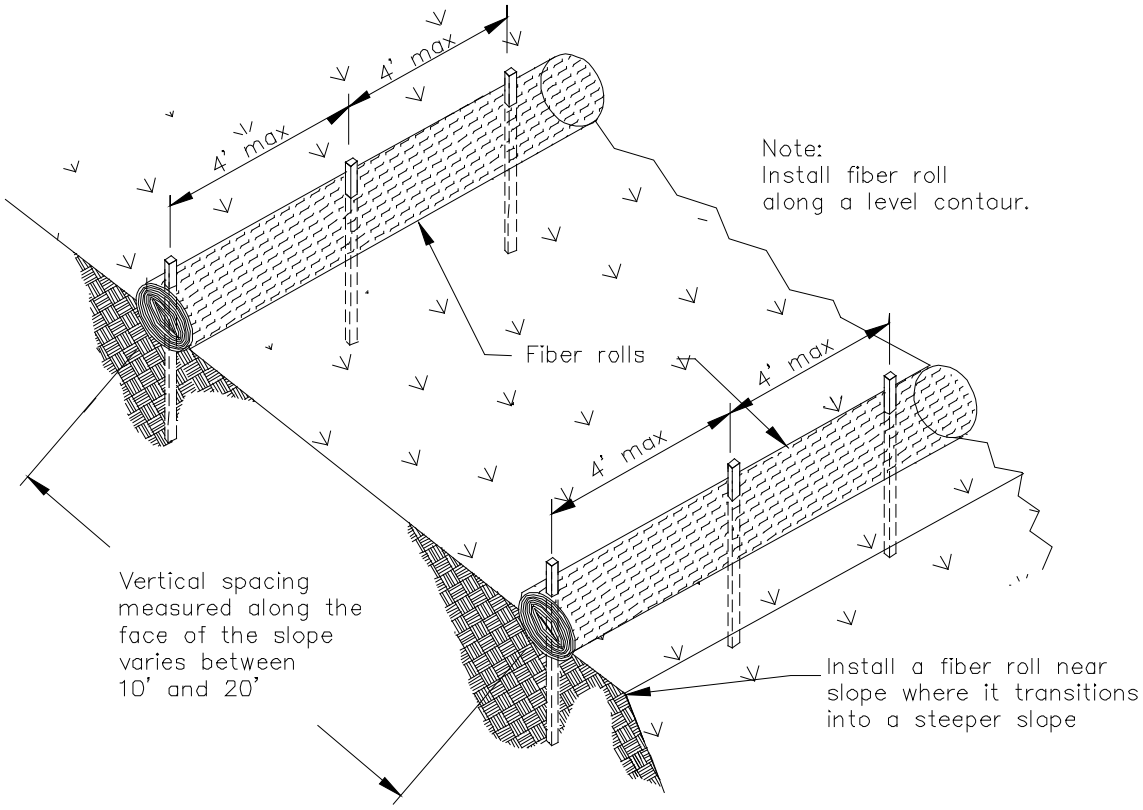
in order to maintain BMP effectiveness. Sediment should be removed when sediment accumulation reaches one-third the designated sediment storage depth.

- If fiber rolls are used for erosion control, such as in a check dam, sediment removal should not be required as long as the system continues to control the grade. Sediment control BMPs will likely be required in conjunction with this type of application.
- Repair any rills or gullies promptly.

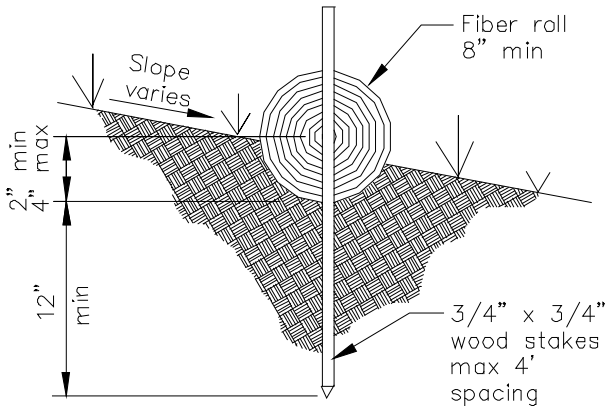
References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.

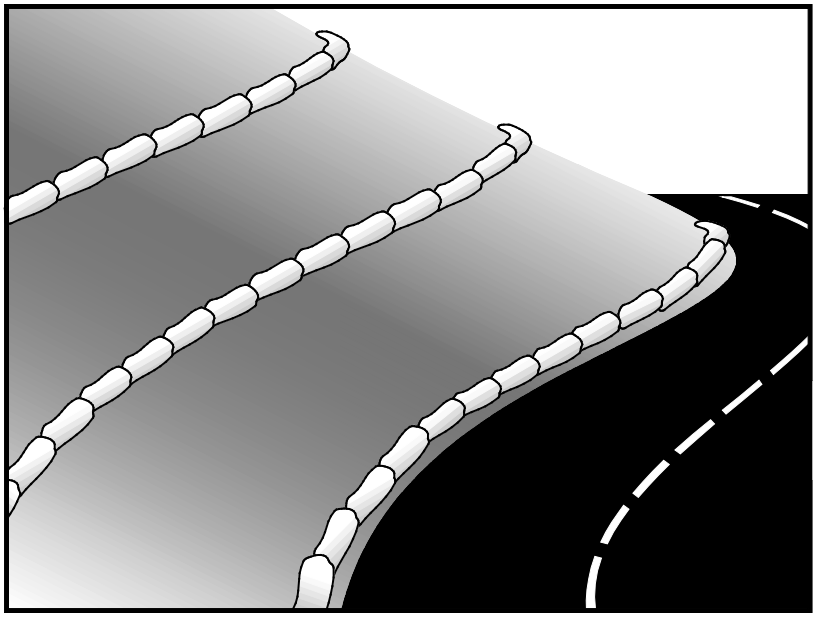


TYPICAL FIBER ROLL INSTALLATION
N.T.S.



ENTRENCHMENT DETAIL
N.T.S.

Gravel Bag Berm SE-6



Description and Purpose

A gravel bag berm is a series of gravel-filled bags placed on a level contour to intercept sheet flows. Gravel bags pond sheet flow runoff, allowing sediment to settle out, and release runoff slowly as sheet flow, preventing erosion.

Suitable Applications

Gravel bag berms may be suitable:

- As a linear sediment control measure:
  - Below the toe of slopes and erodible slopes
  - As sediment traps at culvert/pipe outlets
  - Below other small cleared areas
  - Along the perimeter of a site
  - Down slope of exposed soil areas
  - Around temporary stockpiles and spoil areas
  - Parallel to a roadway to keep sediment off paved areas
  - Along streams and channels
- As a linear erosion control measure:
  - Along the face and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow.

Categories

EC	Erosion Control	☒
SE	Sediment Control	☑
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ Primary Category
☒ Secondary Category

Targeted Constituents

Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

SE-1 Silt Fence
SE-5 Fiber Roll
SE-8 Sandbag Barrier
SE-12 Temporary Silt Dike
SE-14 Biofilter Bags

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- At the top of slopes to divert runoff away from disturbed slopes.
- As chevrons (small check dams) across mildly sloped construction roads. For use check dam use in channels, see SE-4, Check Dams.

Limitations

- Gravel berms may be difficult to remove.
- Removal problems limit their usefulness in landscaped areas.
- Gravel bag berm may not be appropriate for drainage areas greater than 5 acres.
- Runoff will pond upstream of the berm, possibly causing flooding if sufficient space does not exist.
- Degraded gravel bags may rupture when removed, spilling contents.
- Installation can be labor intensive.
- Durability of gravel bags is somewhat limited and bags may need to be replaced when installation is required for longer than 6 months.
- Easily damaged by construction equipment.
- When used to detain concentrated flows, maintenance requirements increase.

Implementation

General

A gravel bag berm consists of a row of open graded gravel-filled bags placed on a level contour. When appropriately placed, a gravel bag berm intercepts and slows sheet flow runoff, causing temporary ponding. The temporary ponding allows sediment to settle. The open graded gravel in the bags is porous, which allows the ponded runoff to flow slowly through the bags, releasing the runoff as sheet flows. Gravel bag berms also interrupt the slope length and thereby reduce erosion by reducing the tendency of sheet flows to concentrate into rivulets, which erode rills, and ultimately gullies, into disturbed, sloped soils. Gravel bag berms are similar to sand bag barriers, but are more porous. Generally, gravel bag berms should be used in conjunction with temporary soil stabilization controls up slope to provide effective erosion and sediment control.

Design and Layout

- Locate gravel bag berms on level contours.
- When used for slope interruption, the following slope/sheet flow length combinations apply:
  - Slope inclination of 4:1 (H:V) or flatter: Gravel bags should be placed at a maximum interval of 20 ft, with the first row near the slope toe.
  - Slope inclination between 4:1 and 2:1 (H:V): Gravel bags should be placed at a maximum interval of 15 ft. (a closer spacing is more effective), with the first row near the slope toe.

Slope inclination 2:1 (H:V) or greater: Gravel bags should be placed at a maximum interval of 10 ft. (a closer spacing is more effective), with the first row near the slope toe.

- Turn the ends of the gravel bag barriers up slope to prevent runoff from going around the berm.
- Allow sufficient space up slope from the gravel bag berm to allow ponding, and to provide room for sediment storage.
- For installation near the toe of the slope, gravel bag barriers should be set back from the slope toe to facilitate cleaning. Where specific site conditions do not allow for a set-back, the gravel bag barrier may be constructed on the toe of the slope. To prevent flows behind the barrier, bags can be placed perpendicular to a berm to serve as cross barriers.
- Drainage area should not exceed 5 acres.
- In Non-Traffic Areas:
  - Height = 18 in. maximum
  - Top width = 24 in. minimum for three or more layer construction
  - Top width = 12 in. minimum for one or two layer construction
  - Side slopes = 2:1 (H:V) or flatter
- In Construction Traffic Areas:
  - Height = 12 in. maximum
  - Top width = 24 in. minimum for three or more layer construction.
  - Top width = 12 in. minimum for one or two layer construction.
  - Side slopes = 2:1 (H:V) or flatter.
- Butt ends of bags tightly.
- On multiple row, or multiple layer construction, overlap butt joints of adjacent row and row beneath.
- Use a pyramid approach when stacking bags.

Materials

- ***Bag Material:*** Bags should be woven polypropylene, polyethylene or polyamide fabric or burlap, minimum unit weight of 4 ounces/yd^2, Mullen burst strength exceeding 300 lb/in^2 in conformance with the requirements in ASTM designation D3786, and ultraviolet stability exceeding 70% in conformance with the requirements in ASTM designation D4355.

- ***Bag Size:*** Each gravel-filled bag should have a length of 18 in., width of 12 in., thickness of 3 in., and mass of approximately 33 lbs. Bag dimensions are nominal, and may vary based on locally available materials.

- ***Fill Material:*** Fill material should be 0.5 to 1 in. crushed rock, clean and free from clay, organic matter, and other deleterious material, or other suitable open graded, non-cohesive, porous gravel.

Costs

Material costs for gravel bags are average and are dependent upon material availability. $2.50-3.00 per filled gravel bag is standard based upon vendor research.

Inspection and Maintenance

- BMPs must be inspected in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.

- Gravel bags exposed to sunlight will need to be replaced every two to three months due to degrading of the bags.

- Reshape or replace gravel bags as needed.

- Repair washouts or other damage as needed.

- Sediment that accumulates in the BMP should be periodically removed in order to maintain BMP effectiveness. Sediment should be removed when the sediment accumulation reaches one-third of the barrier height.

- Remove gravel bag berms when no longer needed and recycle gravel fill whenever possible and properly dispose of bag material. Remove sediment accumulation and clean, re-grade, and stabilize the area.

References

Handbook of Steel Drainage and Highway Construction, American Iron and Steel Institute, 1983.

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), March 2003.

Stormwater Pollution Plan Handbook, First Edition, State of California, Department of Transportation Division of New Technology, Materials and Research, October 1992.

Erosion and Sediment Control Manual, Oregon Department of Environmental Quality, February 2005.

Street Sweeping and Vacuuming SE-7



Categories		
EC	Erosion Control	
SE	Sediment Control	☒
TC	Tracking Control	☑
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ Primary Objective
☒ Secondary Objective

Targeted Constituents	
Sediment	☑
Nutrients	
Trash	☑
Metals	
Bacteria	
Oil and Grease	☑
Organics	

Potential Alternatives

None

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Description and Purpose

Street sweeping and vacuuming includes use of self-propelled and walk-behind equipment to remove sediment from streets and roadways, and to clean paved surfaces in preparation for final paving. Sweeping and vacuuming prevents sediment from the project site from entering storm drains or receiving waters.

Suitable Applications

Sweeping and vacuuming are suitable anywhere sediment is tracked from the project site onto public or private paved streets and roads, typically at points of egress. Sweeping and vacuuming are also applicable during preparation of paved surfaces for final paving.

Limitations

Sweeping and vacuuming may not be effective when sediment is wet or when tracked soil is caked (caked soil may need to be scraped loose).

Implementation

- Controlling the number of points where vehicles can leave the site will allow sweeping and vacuuming efforts to be focused, and perhaps save money.
- Inspect potential sediment tracking locations daily.
- Visible sediment tracking should be swept or vacuumed on a daily basis.

- Do not use kick brooms or sweeper attachments. These tend to spread the dirt rather than remove it.
- If not mixed with debris or trash, consider incorporating the removed sediment back into the project

Costs

Rental rates for self-propelled sweepers vary depending on hopper size and duration of rental. Expect rental rates from $58/hour (3 yd^3 hopper) to $88/hour (9 yd^3 hopper), plus operator costs. Hourly production rates vary with the amount of area to be swept and amount of sediment. Match the hopper size to the area and expect sediment load to minimize time spent dumping.

Inspection and Maintenance

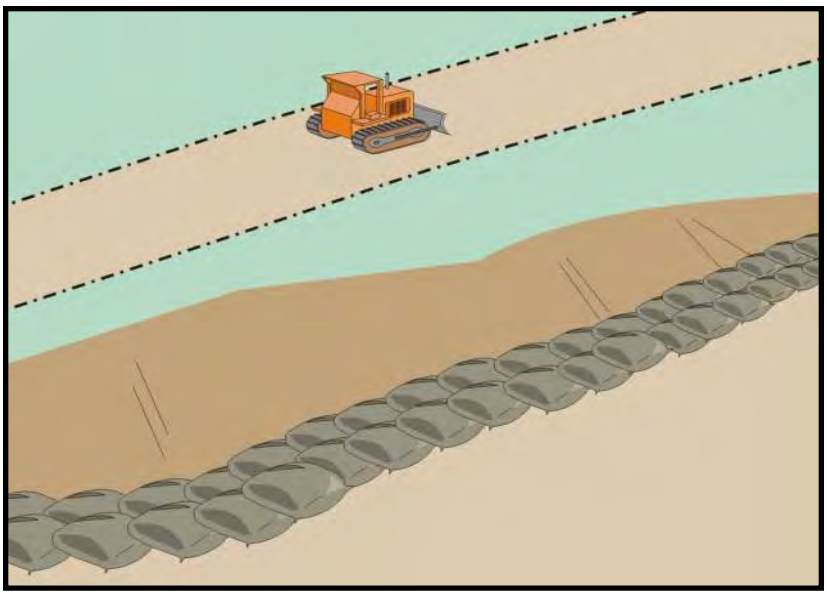
- Inspect BMPs in accordance with General Permit requirements for the associated project type and risk level. It is recommended that at a minimum, BMPs be inspected weekly, prior to forecasted rain events, daily during extended rain events, and after the conclusion of rain events.
- When actively in use, points of ingress and egress must be inspected daily.
- When tracked or spilled sediment is observed outside the construction limits, it must be removed at least daily. More frequent removal, even continuous removal, may be required in some jurisdictions.
- Be careful not to sweep up any unknown substance or any object that may be potentially hazardous.
- Adjust brooms frequently; maximize efficiency of sweeping operations.
- After sweeping is finished, properly dispose of sweeper wastes at an approved dumpsite.

References

Stormwater Quality Handbooks - Construction Site Best Management Practices (BMPs) Manual, State of California Department of Transportation (Caltrans), November 2000.

Labor Surcharge and Equipment Rental Rates, State of California Department of Transportation (Caltrans), April 1, 2002 – March 31, 2003.

Sandbag Barrier SE-8



Categories		
EC	Erosion Control	☒
SE	Sediment Control	☑
TC	Tracking Control	
WE	Wind Erosion Control	
NS	Non-Stormwater Management Control	
WM	Waste Management and Materials Pollution Control	

Legend:
☑ **Primary Category**
☒ **Secondary Category**

Description and Purpose

A sandbag barrier is a series of sand-filled bags placed on a level contour to intercept or to divert sheet flows. Sandbag barriers placed on a level contour pond sheet flow runoff, allowing sediment to settle out.

Suitable Applications

Sandbag barriers may be a suitable control measure for the applications described below. It is important to consider that sand bags are less porous than gravel bags and ponding or flooding can occur behind the barrier. Also, sand is easily transported by runoff if bags are damaged or ruptured. The SWPPP Preparer should select the location of a sandbag barrier with respect to the potential for flooding, damage, and the ability to maintain the BMP.

- As a linear sediment control measure:
  - Below the toe of slopes and erodible slopes.
  - As sediment traps at culvert/pipe outlets.
  - Below other small cleared areas.
  - Along the perimeter of a site.
  - Down slope of exposed soil areas.
  - Around temporary stockpiles and spoil areas.
  - Parallel to a roadway to keep sediment off paved areas.
  - Along streams and channels.

Targeted Constituents	
Sediment	☑
Nutrients	
Trash	
Metals	
Bacteria	
Oil and Grease	
Organics	

Potential Alternatives

SE-1 Silt Fence

SE-5 Fiber Rolls

SE-6 Gravel Bag Berm

SE-12 Manufactured Linear Sediment Controls

SE-14 Biofilter Bags

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- As linear erosion control measure:
  - Along the face and at grade breaks of exposed and erodible slopes to shorten slope length and spread runoff as sheet flow.
  - At the top of slopes to divert runoff away from disturbed slopes.
  - As check dams across mildly sloped construction roads.

Limitations

- It is necessary to limit the drainage area upstream of the barrier to 5 acres.
- Sandbags are not intended to be used as filtration devices.
- Easily damaged by construction equipment.
- Degraded sandbags may rupture when removed, spilling sand.
- Installation can be labor intensive.
- Durability of sandbags is somewhat limited and bags will need to be replaced when there are signs of damage or wear.
- Burlap should not be used for sandbags.

Implementation

General

A sandbag barrier consists of a row of sand-filled bags placed on a level contour. When appropriately placed, a sandbag barrier intercepts and slows sheet flow runoff, causing temporary ponding. The temporary ponding allows sediment to settle. Sand-filled bags have limited porosity, which is further limited as the fine sand tends to quickly plug with sediment, limiting or completely blocking the rate of flow through the barrier. If a porous barrier is desired, consider SE-1, Silt Fence, SE-5, Fiber Rolls, SE-6, Gravel Bag Berms or SE-14, Biofilter Bags. Sandbag barriers also interrupt the slope length and thereby reduce erosion by reducing the tendency of sheet flows to concentrate into rivulets which erode rills, and ultimately gullies, into disturbed, sloped soils. Sandbag barriers are similar to gravel bag berms, but less porous. Generally, sandbag barriers should be used in conjunction with temporary soil stabilization controls up slope to provide effective erosion and sediment control.

Design and Layout

- Locate sandbag barriers on a level contour.
- When used for slope interruption, the following slope/sheet flow length combinations apply:
  - Slope inclination of 4:1 (H:V) or flatter: Sandbags should be placed at a maximum interval of 20 ft, with the first row near the slope toe.
  - Slope inclination between 4:1 and 2:1 (H:V): Sandbags should be placed at a maximum interval of 15 ft. (a closer spacing is more effective), with the first row near the slope toe.