



**Northern Inactive Waste Site  
Remediation Project**

**Phillips 66 Santa Maria Refinery**

Biological Resources Technical Report



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## Sign-off Sheet

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## Executive Summary

The Northern Inactive Waste Site (NIWS) operated at the Phillips 66 (formerly Unocal) Santa Maria Refinery (SMR) from approximately 1955 to 1974 and was reportedly used for the disposal of refinery byproducts and domestic waste, including petroleum hydrocarbons and potential asbestos containing materials. In support of the closure and remediation of the NIWS, Stantec has submitted a Conceptual Closure Plan (CCP) to the Regional Water Control Board (RWQCB) to remediate the site that, among other actions, recommends the excavation of impacted soils to depths ranging from 3 to 10 feet below ground surface as required to meet the proposed soil cleanup goals.

To assess the potential impacts to biological resources resulting from the NIWS Remediation Project (Project) in support of the regulatory permitting process, Stantec biologists investigated the environmental conditions within the NIWS and surrounding areas to characterize the resources observed or potentially occurring in areas that may be affected by the Project. The investigation included a search of available literature and database resources and reconnaissance-level surveys within the NIWS and a surrounding 300-foot buffer, known as the Biological Survey Area (BSA), on 12 July 2019 and 12 September 2019. The field surveys were conducted on foot within the BSA and included vegetation community classification and mapping; and non-protocol surveys for special-status plants, wildlife, and nesting or otherwise listed birds.

Based on the results of the field investigation, the BSA supports one native plant community, Silver dune lupine – mock heather scrub, considered as a sensitive community by the California Department of Fish and Wildlife (CDFW). The Project is expected to temporarily impact approximately 1.53 acres of land within the BSA, including approximately 1.38 acres of disturbed silver dune lupine – mock heather scrub (*Lupinus chamissonis* - *Ericameria ericoides* Shrubland Alliance, *Ericameria ericoides* Association), and 0.15 acre of Disturbed/developed land.

No designated critical habitat occurs within the BSA; however, critical habitat for La Graciosa thistle (*Cirsium scariosum* var. *loncholepis*), with a California Rare Plant Rank of 1B.1, has been designated approximately 500 feet to the west of the BSA and multiple occurrences of this species have been noted in the region, the nearest being approximately 3,000 feet from the BSA. The marsh/dune wetland habitat for this species is not present within the BSA but may be in adjacent areas. Based on the definition outlined in the Coastal Act, there are no Environmentally Sensitive Habitat Areas present within the BSA and no defined wildlife corridors have been identified in the vicinity.

Although a formal delineation was not conducted, no potentially jurisdictional features were observed during the surveys, nor were any hydric soils expected to occur based on database research.

The following special-status animal and plant species, respectively, are known to occur within the BSA based on available data and the field investigations:

- Blainville's horned lizard (*Phrynosoma blainvillii*) – CDFW Species of Special Concern (SSC)
- Nipomo Mesa lupine (*Lupinus nipomensis*) – State and federally listed as Endangered
- Sand almond (*Prunus fasciculata* var. *punctata*) – California Rare Plant Rank 4 species.

In addition, the following special status plants and animals have a moderate to high potential to occur within the BSA based on the database research and habitat conditions observed:



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Scientific Name	Common Name
<b>Plants</b>	
<i>Ceanothus impressus</i> var. <i>nipomensis</i>	Nipomo Mesa ceanothus
<i>Chenopodium littoreum</i>	coastal goosefoot
<i>Cirsium rhotophilum</i>	surf thistle
<i>Cirsium scariosum</i> var. <i>loncholepis</i>	La Graciosa thistle
<i>Delphinium parryi</i> ssp. <i>blochmaniae</i>	dune larkspur
<i>Dithyrea maritima</i>	beach spectaclepod
<i>Erigeron blochmaniae</i>	Blockman's leafy daisy
<i>Monardella undulata</i> ssp. <i>crispa</i>	crisp monardella
<i>Monardella undulata</i> ssp. <i>undulata</i>	San Luis Obispo monardella
<i>Nemacaulis denudata</i> var. <i>denudata</i>	coast wooly-heads
<i>Scrophularia atrata</i>	black-flowered figwort
<b>Wildlife</b>	
<i>Plebejus icarioides moroensis</i>	Morro bay blue butterfly
<i>Anniella pulchra</i>	Northern California legless lizard
<i>Athene cunicularia</i>	Burrowing owl
<i>Falco peregrinus anatum</i> (foraging)	American peregrine falcon
<i>Taxidea taxus</i>	American badger



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## **Abbreviations**

ACM	asbestos containing materials
BSA	Biological Study Area
BGS	below ground surface
CCH	Consortium of California Herbaria
CCP	Conceptual Closure Plan
CDFG	California Department of Fish and Game
CDFW	California Department of Fish and Wildlife
CEQA	California Environmental Quality Act
CNDDDB	California Natural Diversity Database
CNPS	California Native Plant Society
CRPR	California Rare Plant Rank
CWA	Clean Water Act
ESA	Endangered Species Act
GPS	Global Positioning System
Hr	hour
km	kilometer
MBTA	Migratory Bird Treaty Act
NEPA	National Environmental Policy Act
NIWS	Northern Inactive Waste Site
NPPA	Native Plant Protection Act
NRCS	Natural Resources Conservation Service
Project	Northern Inactive Waste Site Remediation Project



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RWQCB	Regional Water Quality Control Board
SMR	Santa Maria Refinery
USACE	United States Army Corps of Engineers
USFWS	U.S. Fish & Wildlife Service
USGS	U.S. Geological Survey
WDR	Waste Discharge Requirements





## **1.0 INTRODUCTION**

This report is intended to document the biological resources that are associated with the Northern Inactive Waste Site (NIWS) Remediation Project (Project) at the Phillips 66 Santa Maria Refinery (SMR) in Arroyo Grande, CA (refer to Appendix A, Figure 1). The surveys and discussions presented in this report were conducted/prepared to support regulatory agency permitting and California Environmental Quality Act (CEQA) documentation. Surveys were conducted within the Project site as well as a 300-foot buffer (Biological Survey Area or BSA); refer to Appendix A, Figure 1 for a depiction of the location of the BSA.

### **1.1 PURPOSE OF THE REPORT**

The goals of this report are to document the current environmental conditions that occur within and adjacent to the BSA, which include areas within the Project site and a 300-foot survey buffer. This report describes existing biological resources that occur within or adjacent to the BSA (with special emphasis on special-status plant and wildlife species, wildlife corridors, and special-status/sensitive natural communities), and evaluates the potential for these species to occur within the BSA.

### **1.2 PROJECT DESCRIPTION**

Stantec has conducted site assessment activities to support the preparation and submittal of a Conceptual Closure Plan (CCP) for the NIWS. The purpose of the site assessment activities was to define the extent of petroleum hydrocarbons and asbestos containing materials (ACM) impacts to the soil. The SMR was owned and operated by Unocal from 1955 to 1997. According to Unocal personnel, the NIWS was constructed and used from approximately 1955 to 1974. The NIWS is located within the SMR, in a topographic low spot between two sand dunes near the entrance of the facility. Although records of NIWS operations are not available, the NIWS was reported to potentially contain refinery trash, nonhazardous debris, slop oil emulsion, API separator sludge, ACM, and domestic waste from local residents.

For the purposes of the CCP, three remedial alternatives were considered to obtain closure for the NIWS including No Further Action, Soil Containment/Capping In Place, and Soil Excavation/Off-Site Disposal. Stantec has recommended excavation of impacted soils as the preferred remedial action based on an evaluation of these alternatives. Soil remedial excavation will extend to depths ranging from approximately 3 to 10 feet below ground surface (bgs) to meet the proposed soil cleanup goals. Construction activities will be limited to the NIWS footprint and the existing asphalt/dirt access road. Excavation activities are proposed to start in the Third Quarter of 2020 for a duration of approximately two months. Waste management includes transportation by rail and disposal at an out-of-state facility.

## **2.0 METHODOLOGIES**

Stantec biologists conducted two habitat assessments and biological resource surveys within the BSA on 12 July 2019 and 12 September 2019. A preliminary literature review of readily available resources was conducted prior to each



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survey. The field investigations included reconnaissance-level surveys, non-protocol surveys to detect the presence of special-status plant and wildlife species, and non-protocol avian surveys to detect the presence of listed birds. Surveys were conducted on foot within the BSA, where accessible based on terrain and vegetative cover.

Survey Date/Time	Biologist	Weather
12 July 2019, 0730 – 1200	Bret Reiman, Staff Biologist	57 – 70 °F, Clear/Light Wind
12 September 2019, 0800 – 1100	Jared Varonin, Principal Biologist	61 – 80 °F, Clear/Light Wind

## **2.1 LITERATURE REVIEW**

A literature search focused on the BSA was conducted prior to the field surveys. The BSA is located within the U.S. Geological Survey's (USGS) Oceano, California, 7.5-minute topographic quadrangle. Queries of the California Department of Fish and Wildlife (CDFW) California Natural Diversity Database (CNDDB) was conducted for this quadrangle to determine special-status plants, wildlife, and vegetation communities that have been documented in the vicinity of the Project Area (CDFW, 2019a). The following eight adjacent quadrangles were also included in the database search to encompass potential occurrences of special-status species in the region surrounding the BSA:

- Pismo Beach
- Arroyo Grande NE
- Tar Spring Ridge
- Nipomo
- Santa Maria
- Guadalupe
- Point Sal
- Oceano OE W

Additional data regarding the potential occurrence of special-status species and policies relating to these special-status natural resources were gathered from the following sources:

- State and federally listed endangered and threatened animals of California (CDFW, 2019b);
- Special Animals List (CDFW, 2019c);
- Inventory of Rare and Endangered Vascular Plants of California (California Native Plant Society [CNPS], 2019); and
- Consortium of California Herbaria (CCH, 2019).

## **2.2 BIOLOGICAL SURVEYS AND HABITAT ASSESSMENTS**

### **2.2.1 Site Reconnaissance and Wildlife Surveys**

To document the existing biological resources that are present within and adjacent to the BSA, on 12 July 2019 and 12 September 2019, Stantec conducted a habitat assessment and reconnaissance-level survey, focused non-protocol surveys for special-status plant and wildlife species, and an evaluation of potentially jurisdictional aquatic resources. The primary goals of the reconnaissance survey were to identify and assess habitat that may be capable of supporting special-status wildlife species and to document the presence/absence of special-status biological resources.

The BSA was investigated on foot by experienced field biologists. Biologists conducted the survey by walking meandering transects through the entirety of the BSA at an average pace of approximately 1.5 km/hr while visually searching for and listening to wildlife songs, calls, or other signs. The walking survey was halted approximately every



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50 meters to listen for wildlife or as necessary to identify, record, or enumerate any other detected species. Terrestrial insects and other invertebrates were searched for on flowers and leaves, under loose bark, and under stones and logs on the ground throughout the BSA. Randomly selected areas within appropriate micro habitats (e.g., leaf litter, woody debris piles, etc.) were hand raked or visually inspected to determine the presence/absence of gastropods, reptiles, small mammals, and amphibians. Species present were identified and recorded through direct visual observation, sound, or their sign (e.g., scat, tracks, etc.) and all potential refugia sites search were returned to their original state upon completion of inspection. Species identifications conform to the most up-to-date field guides and technical literature.

To the extent possible, surveys were conducted during a season and time of day when migratory birds were expected to be present, resident bird species were nesting and fledging, small mammals were active and detectable visually or by sign, and above-ground amphibian and reptile movement would generally be detectable. However, it should be noted that some wildlife species and/or individuals may have been difficult to detect due to their elusive nature, cryptic morphology, or nocturnal behavior. Surveys were conducted during daylight hours when temperatures were such that reptiles and other wildlife would be active (i.e., between 75-95° Fahrenheit).

All plant species identified during the surveys are listed in Table 2 in Section 4.2.2 and a list of special-status plant species that have the potential to occur in each region (based on the database queries) is presented in Table 5 in Section 5.4. A list of wildlife observed is presented in Table 3 in Section 4.3 and a list of special-status wildlife species that have the potential to occur in the region (based on the database queries) is presented in Table 6 in Section 5.5.

### **2.2.2 Vegetation Mapping**

Vegetation descriptions and names are based on Sawyer et al. (2009) and have been defined at least to the alliance level. Vegetation maps were prepared by recording tentative vegetation type boundaries over recent aerial photograph base maps using the Esri® Collector for ArcGIS app on an Apple® iPad® coupled with a Bad Elf® GNSS Surveyor sub-meter external global positioning system (GPS) unit. Mapping was further refined in the office using ArcGIS (version 10.4) with aerial photograph base maps with an accuracy of one foot. Most boundaries shown on the maps are accurate within approximately three feet; however, boundaries between some vegetation types are less precise due to difficulties interpreting aerial imagery and accessing stands of vegetation. Vegetation communities are discussed further in Section 4.2 and are depicted in Figure 2 in Appendix A.

Vegetation communities can overlap in many characteristics and over time may shift from one community type to another. Note also that all vegetation maps and descriptions are subject to variability for the following reasons:

- In some cases, vegetation boundaries result from distinct events, such as wildfire or flooding, but vegetation types usually tend to intergrade on the landscape, without precise boundaries between them. Even distinct boundaries caused by fire or flood can be disguised after years of post-disturbance succession. Mapped boundaries represent best professional judgment, but usually should not be interpreted as literal delineations between sharply defined vegetation types.
- Natural vegetation tends to exist in generally recognizable types, but also may vary over time and geographic region. Written descriptions cannot reflect all local or regional variation. Many (perhaps most) stands of natural vegetation do not strictly fit into any named type. Therefore, a mapped unit is given the best name available



in the classification system being used, but this name does not imply that the vegetation unambiguously matches written descriptions.

- Vegetation tends to be patchy. Small patches of one named type are often included within larger stands mapped as units of another type. For this Study Area, the minimum mapping unit was approximately three feet.

### **2.2.3 Jurisdictional Delineation**

A formal jurisdictional waters delineation per US Army Corps of Engineers (USACE) guidelines was not conducted as part of this assessment. However, during the field reconnaissance, the BSA was evaluated for potential wetlands and/or waters subject to federal and/or state jurisdiction pursuant to Section 404 and 401 of the Clean Water Act (CWA) and/or Section 1600 et seq. of the California Fish and Game Code. Prior to conducting the field assessment, Stantec reviewed current and historic aerial imagery, topographic maps, soil maps (USDA, 2019), local and state hydric soils lists, and the National Wetlands Inventory (USFWS, 2019) to evaluate the potential active channels and wetland features that occur within the BSA. During the field assessment, hydrologic features were mapped using the same data collection equipment described above for vegetation mapping.

## **3.0 REGULATORY FRAMEWORK**

### **3.1 FEDERAL REGULATIONS**

#### **3.1.1 Federal Endangered Species Act**

Federal Endangered Species Act (ESA) provisions protect federally listed threatened and endangered species and their habitats from unlawful take and ensure that federal actions do not jeopardize the continued existence of a listed species or result in the destruction or adverse modification of designated critical habitat. Under the ESA, “take” is defined as “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any of the specifically enumerated conduct.” The U.S. Fish & Wildlife Service’s (USFWS) regulations define harm to mean “an act which actually kills or injures wild-life.” Such an act “may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering” (50 CFR § 17.3). Critical habitat is defined in Section 3(5)(A) of the ESA as “(i) the specific areas within the geographical area occupied by the species on which are found those physical or biological features (I) essential to the conservation of the species, and (II) which may require special management considerations or protection; and (ii) specific areas outside the geographical area occupied by the species upon a determination by the Secretary of Commerce or the Secretary of the Interior (Secretary) that such areas are essential for the conservation of the species.” The effects analyses for designated critical habitat must consider the role of the critical habitat in both the continued survival and the eventual recovery (i.e., the conservation) of the species in question, consistent with the Ninth Circuit judicial opinion, *Gifford Pinchot Task Force v. USFWS*. Activities that may result in “take” of individuals are regulated by the USFWS. The USFWS produced an updated list of candidate species December 6, 2007 (72 FR 69034). Candidate species are not afforded any legal protection under ESA; however, candidate species typically receive special attention from Federal and State agencies during the environmental review process.



### **3.1.2 Migratory Bird Treaty Act**

The Migratory Bird Treaty Act (MBTA) of 1918 (16 U.S.C. 703-711) makes it unlawful to possess, buy, sell, purchase, barter or “take” any migratory bird listed in Title 50 of the Code of Federal Regulations Part 10. “Take” is defined as possession or destruction of migratory birds, their nests or eggs. Disturbances that cause nest abandonment and/or loss of reproductive effort or the loss of habitats upon which these birds depend may be a violation of the MBTA. The MBTA prohibits killing, possessing, or trading in migratory birds except in accordance with regulations prescribed by the Secretary. This act encompasses whole birds, parts of birds, and bird nests and eggs.

### **3.1.3 Bald and Golden Eagle Protection Act of 1940 (16 USC 668)**

The Bald Eagle Protection Act of 1940 (16 U.S.C. 668, enacted by 54 Stat. 250) protects bald and golden eagles by prohibiting the taking, possession, and commerce of such birds and establishes civil penalties for violation of this Act. Take of bald and golden eagles is defined as follows: “disturb means to agitate or bother a bald or golden eagle to a degree that causes, or is likely to cause, based on the best scientific information available, (1) injury to an eagle, (2) a decrease in its productivity, by substantially interfering with normal breeding, feeding, or sheltering behavior, or (3) nest abandonment, by substantially interfering with normal breeding, feeding, or sheltering behavior” (72 FR 31132; 50 CFR 22.3).

The USFWS is the primary federal authority charged with the management of golden eagles in the United States. A permit for take of golden eagles, including take from disturbance such as loss of foraging habitat, may be required if this Project affects such resources. USFWS guidance on the applicability of current Eagle Act statutes and mitigation is currently under review. On November 10, 2009, the USFWS implemented new rules (74 FR 46835) governing the “take” of golden and bald eagles. The new rules were released under the existing Bald and Golden Eagle Act which has been the primary regulation protection unlisted eagle populations since 1940. All activities that may disturb or incidentally take an eagle or its nest as a result of an otherwise legal activity must be permitted by the USFWS under this act. The definition of disturb (72 FR 31132) includes interfering with normal breeding, feeding, or sheltering behavior to the degree that it causes or is likely to cause decreased productivity or nest abandonment. If a permit is required, due to the current uncertainty on the status of golden eagle populations in western United States, it is expected permits would only be issued for safety emergencies or if conservation measures implemented in accordance with a permit would result in a reduction of ongoing take or a net take of zero.

### **3.1.4 Federally Regulated Habitats**

Areas meeting the regulatory definition of “Waters of the U.S.” (Jurisdictional Waters) are subject to the jurisdiction of the USACE under provisions of Section 404 of the CWA (1972) and Section 10 of the Rivers and Harbors Act (1899). These waters may include all waters used, or potentially used, for interstate commerce, including all waters subject to the ebb and flow of the tide, all interstate waters, all other waters (intrastate lakes, rivers, streams, mudflats, sandflats, playa lakes, natural ponds, etc.), all impoundments of waters otherwise defined as “Waters of the U.S.,” tributaries of waters otherwise defined as “Waters of the U.S.,” the territorial seas, and wetlands (termed Special Aquatic Sites) adjacent to “Waters of the U.S.” (33 CFR, Part 328, Section 328.3). Wetlands on non-agricultural lands are identified using the Corps of Engineers Wetlands Delineation Manual (Environmental Laboratory, 1987). The Project Area falls within the South Pacific Division of the USACE and is under the jurisdiction of the Los Angeles District.



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Construction activities within jurisdictional waters are regulated by the USACE. The placement of fill into such waters must comply with permit requirements of the USACE. No USACE permit would be effective in the absence of State water quality certification pursuant to Section 401 of the CWA. As a part of the permit process, the USACE works directly with the USFWS to assess potential Project impacts on biological resources.

### **3.1.5 National Environmental Policy Act**

The National Environmental Policy Act of 1969 (NEPA) requires all Federal agencies to examine the environmental impacts of their actions, incorporate environmental information, and utilize public participation in the planning and implementation of all actions. Federal agencies must integrate NEPA with other planning requirements and prepare appropriate NEPA documents to facilitate better environmental decision making. NEPA requires Federal agencies to review and comment on Federal agency environmental plans/documents when the agency has jurisdiction by law or special expertise with respect to any environmental impacts involved (42 U.S.C. 4321- 4327) (40 CFR 1500-1508).

### **3.1.6 Coastal Zone Management Act**

The Coastal Zone Management Act (CZMA) was passed in 1972, creating three national programs: the National Coastal Zone Management Program, the National Estuarine Research Reserve System, and the Coastal and Estuarine Land Conservation Program (CELCP). While the National Estuarine Research Reserve System and CELCP programs were designed to fund and promote protection and study of estuarine systems, the National Coastal Zone Management Program aimed to coordinate State and Federal management of coastal resources by taking a comprehensive approach to resource use, economic development and natural resource conservation.

Participation is voluntary, but significant federal resources are made available to states that develop and implement federally approved coastal zone management plans. In addition, the CZMA authorizes states with approved plans to review certain Federal actions to ensure they are consistent with those plans.

For a state coastal management program to receive approval from the National Oceanic and Atmospheric Administration (NOAA), it must contain a land use component. In terms of land use requirements, at a minimum the state must include within their plan “a definition of what shall constitute permissible land uses and water uses within the coastal zone which have a direct and significant impact on the coastal waters”, “an inventory and designation of areas of particular concern”, and “broad guidelines on priorities of uses in particular areas”( 16 U.S.C § 1445(d)(2) (B), (C), (E)).

States wishing to improve their coastal management programs can receive technical assistance and funding from NOAA’s Office of Ocean and Coastal Resource Management (OCRM). OCRM, through the Coastal Zone Enhancement Program, provides funds, known as § 309 grants, to help states develop and implement program changes in nine coastal zone enhancement areas of national significance, which include coastal hazards.

There is considerable variation from state to state in how these elements are addressed. States with strong planning traditions, such as Florida, incorporate land use planning into their coastal management programs. In most of the Gulf States, however, only the minimum requirements are met; i.e. a list of permissible activities and broad designations of sensitive areas.



## 3.2 STATE REGULATIONS

### 3.2.1 California Environmental Quality Act

CEQA establishes State policy to prevent significant, avoidable damage to the environment by requiring changes in projects through the use of alternatives or mitigation measures. CEQA applies to actions directly undertaken, financed, or permitted by State lead agencies. Regulations for implementation are found in the State CEQA Guidelines published by the Resources Agency. These guidelines establish an overall process for the environmental evaluation of projects.

### 3.2.2 California Endangered Species Act

Provisions of the California Endangered Species Act protect State-listed Threatened and Endangered species. The CDFW regulates activities that may result in “take” of individuals (“take” means “hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill”). Habitat degradation or modification is not expressly included in the definition of “take” under the California Fish and Game Code. Additionally, the California Fish and Game Code contains lists of vertebrate species designated as “fully protected” (California Fish & Game Code §§ 3511 [birds], 4700 [mammals], 5050 [reptiles and amphibians], 5515 [fish]). Such species may not be taken or possessed.

In addition to Federal and State-listed species, the CDFW also has produced a list of Species of Special Concern to serve as a “watch list.” Species on this list are of limited distribution or the extent of their habitats has been reduced substantially, such that threat to their populations may be imminent. Species of Special Concern may receive special attention during environmental review, but they do not have statutory protection.

Birds of prey are protected in California under the State Fish and Game Code. Section 3503.5 states it is “unlawful to take, possess, or destroy any birds of prey (in the order *Falconiformes* or *Strigiformes*) or to take, possess, or destroy the nest or eggs of any such bird except as otherwise provided by this Code or any regulation adopted pursuant thereto.” Construction disturbance during the breeding season could result in the incidental loss of fertile eggs or nestlings or otherwise lead to nest abandonment. Disturbance that causes nest abandonment and/or loss of reproductive effort is considered “take” by the CDFW. Under Sections 3503 and 3503.5 of the State Fish and Game Code, activities that would result in the taking, possessing, or destroying of any birds-of-prey, taking or possessing of any migratory nongame bird as designated in the MBTA, or the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or non-game birds protected by the MBTA, or the taking of any non-game bird pursuant to Fish and Game Code Section 3800 are prohibited.

### 3.2.3 Native Plant Protection Act (Fish & Game Code 1900-1913)

California’s Native Plant Protection Act (NPPA) requires all State agencies to utilize their authority to carry out programs to conserve endangered and rare native plants. Provisions of NPPA prohibit the taking of listed plants from the wild and require notification of the CDFW at least 10 days in advance of any change in land use. This allows CDFW to salvage listed plant species that would otherwise be destroyed. The Applicant is required to conduct botanical inventories and consult with CDFW during project planning to comply with the provisions of this act and sections of CEQA that apply to rare or endangered plants.





### **3.2.4 Section 3503 & 3503.5 of the Fish and Game Code**

Under these sections of the Fish and Game Code, the Applicant is not allowed to conduct activities that would result in the taking, possessing, or destroying of any birds-of-prey, taking or possessing of any migratory non-game bird as designated in the MBTA, or the taking, possessing, or needlessly destroying of the nest or eggs of any raptors or non-game birds protected by the MBTA, or the taking of any non-game bird pursuant to Fish and Game Code Section 3800.

### **3.2.5 Porter-Cologne Water Quality Control Act**

Regional water quality control boards (RWQCBs) regulate the “discharge of waste” to “waters of the State.” All projects proposing to discharge waste that could affect waters of the State must file a waste discharge report with the appropriate regional board. The board responds to the report by issuing waste discharge requirements (WDR) or by waiving WDRs for that project discharge. Both of the terms “discharge of waste” and “waters of the State” are broadly defined such that discharges of waste include fill, any material resulting from human activity, or any other “discharge.” Isolated wetlands within California, which are no longer considered “waters of the United States” as defined by Section 404 of the CWA, are addressed under the Porter-Cologne Act.

### **3.2.6 State-Regulated Habitats**

The State Water Resources Control Board is the State agency (together with the RWQCBs) charged with implementing water quality certification in California. The Project Area falls under the jurisdiction of the Central Coast RWQCB.

The CDFW extends the definition of stream to include “intermittent and ephemeral streams, rivers, creeks, dry washes, sloughs, blue-line streams (USGS-defined), and watercourses with subsurface flows. Canals, aqueducts, irrigation ditches, and other means of water conveyance can also be considered streams if they support aquatic life, riparian vegetation, or stream-dependent terrestrial wildlife” (CDFW, 1994).

Activities that result in the diversion or obstruction of the natural flow of a stream; or which substantially change its bed, channel, or bank; or which utilize any materials (including vegetation) from the streambed, may require that the project Applicant enter into a Streambed Alteration Agreement with the CDFW.

### **3.2.7 Coastal Zone Management Act**

The Coastal Zone Management Act (CZMA) establishes national policy to preserve, protect, develop, and, where possible, restore or enhance the resources of the nation’s coastal zones. In accordance with Section 307(c) of the CZMA, after approval by the Secretary of Commerce of a state’s management program, any applicant for a required Federal license or permit to conduct an activity in or outside of the coastal zone affecting any land or water use or natural resource of the coastal zone of that state shall provide in the application to the licensing or permitting agency a certification that the proposed activity complies with the enforceable policies of the state’s approved program and that such activity will be conducted in a manner consistent with the program. The Federal government certified the California Coastal Management Program (CCMP) in 1977. The enforceable policies of that document are Chapter 3 of the California Coastal Act of 1976. All consistency documents are reviewed for consistency with these policies.





### 3.3 LOCAL REGULATIONS

#### 3.3.1 San Luis Obispo County General Plan – Conservation and Open Space Element

The Conservation and Open Space Element is a tool to protect and preserve these unique community resources. Conservation is the planned management, preservation, and wise utilization of natural resources and landscapes to ensure their availability in the future. Conservation means using less energy or water, using efficient technologies, and changing wasteful habits. Conserving, renewing, and restoring natural resources will assure their greatest ecologic, economic, or social benefit over time. This is necessary in order to enjoy scenic beauty and recreation, eliminate or minimize premature and unnecessary conversion of open space to urban uses, maintain public health and safety, and support a vital economy. The Conservation and Open Space Element contains goals, policies, and strategies to conserve, protect, and restore biodiversity and open space.

#### 3.3.2 Title 23 of the San Luis Obispo County Code, Coastal Zone Land Use Ordinance

This title is known as the Coastal Zone Land Use Ordinance of the County of San Luis Obispo, Title 23 of the San Luis Obispo County Code. These regulations are hereby established and adopted to protect and promote the public health, safety and welfare, and more particularly:

- To implement the San Luis Obispo County General Plan and the San Luis Obispo County Local Coastal Program, and to guide and manage the future growth of the county in accordance with those plans; and
- To regulate land use in a manner that will encourage and support the orderly development and beneficial use of lands within the county; and
- To minimize adverse effects on the public resulting from the inappropriate creation, location, use or design of building sites, buildings, land uses, parking areas, or other forms of land development by providing appropriate standards for development; and
- To protect and enhance the significant natural, historic, archeological and scenic resources within the county as identified by the county general plan.
- To assist the public in identifying and understanding regulations affecting the development and use of land.

Title 23 of the San Luis Obispo County (SLO Co) Code, Coastal Zone Land Use Ordinance, Local Coastal Program (SLO Co 2018) defines Unmapped ESHA as:

A type of Sensitive Resource Area where plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could easily be disturbed or degraded by human activities and development. They include, but are not limited to, known wetlands, coastal streams and riparian vegetation, terrestrial and marine habitats that may not be mapped as Land Use Element combining designations. The existence of Unmapped ESHA is determined by the County at or before the time of application acceptance and shall be based on the best available information. Unmapped ESHA includes but is not limited to:



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- a. Areas containing features or natural resources when identified by the County or County approved expert as having equivalent characteristics and natural function as mapped other environmental sensitive habitat areas;
- b. Areas previously known to the County from environmental experts, documents or recognized studies as containing ESHA resources; and
- c. Other areas commonly known as habitat for species determined to be threatened, endangered, or otherwise needing protection.

### **3.4 OTHER APPLICABLE REGULATIONS, PLANS, AND STANDARDS**

#### **3.4.1 California Native Plant Society Rare Plant Program**

The mission of the CNPS Rare Plant Program is to develop current, accurate information on the distribution, ecology, and conservation status of California's rare and endangered plants, and to use this information to promote science-based plant conservation in California. Once a species has been identified as being of potential conservation concern, it is put through an extensive review process. Once a species has gone through the review process, information on all aspects of the species (e.g., listing status, habitat, distribution, threats, etc.) are entered into the online CNPS Inventory and given a California Rare Plant Rank (CRPR). In 2011, the CNPS officially changed the name "CNPS List" to "CRPR." The Program currently recognizes more than 1,600 plant taxa (species, subspecies and varieties) as rare or endangered in California.

Vascular plants listed as rare or endangered by the CNPS, but which might not have a designated status under State endangered species legislation, are defined by the following CRPR:

- CRPR 1A - Plants considered by the CNPS to be extinct in California
- CRPR 1B - Plants rare, threatened, or endangered in California and elsewhere
- CRPR 2 - Plants rare, threatened, or endangered in California, but more numerous elsewhere
- CRPR 3 - Plants about which we need more information – a review list
- CRPR 4 - Plants of limited distribution – a watch list

In addition to the CRPR designations above, the CNPS adds a Threat Rank as an extension added onto the CRPR and designates the level of endangerment by a 1 to 3 ranking, with 1 being the most endangered and 3 being the least endangered and are described as follows:

- 0.1 – Seriously threatened in California (high degree/immediacy of threat)
- 0.2 – Fairly threatened in California (moderate degree/immediacy of threat)
- 0.3 – Not very threatened in California (low degree/immediacy of threats or no current threats known).



## **4.0 EXISTING CONDITIONS**

### **4.1 SETTING**

The BSA is situated within the Phillips 66 SMR, located at 2555 Willow Road, Arroyo Grande, California 93420. SMR was constructed in 1955 and occupies approximately 2.5 square miles on the Arroyo Grande Mesa. The parcel is zoned for industrial use and currently includes an operating refining facility plus areas of coastal dunes supporting coastal dune vegetation. The NIWS is located inside the fenced portion of the refinery property and is situated at the northeastern region of the property. Bordering the SMR property are agriculture fields to the south, residential development to the north and east, and undeveloped coastal dunes to the west.

The NIWS was formed by filling a topographic low spot between sand dunes. The surface of the waste facility is at an approximate elevation of 120 feet above mean sea level and is covered in sparse vegetation. Occasional pieces of trash and debris (i.e., glass bottles, metal scrap and other debris) are present on the landfill surface. The surrounding dunes are covered by vegetation typical to the coastal dune environment. The NIWS was constructed on a portion of the SMR for disposal of the facility's waste. It was operated from approximately 1955 to 1974.

The BSA and its vicinity have a coastal Mediterranean climate, with long, dry, summers and short, wet, mild winters. During the late spring and summer months, dense fog is common in the morning and acts to moderate summer temperatures. Average daily high temperatures during the summer months are in the mid-60s°F and average daily lows in the low to mid-50s°F. Average daily winter temperatures range from highs in the low 60s°F to lows in the mid-40s °F. Average monthly temperatures in the site vicinity are around 61°F during the summer months and 53 °F during the winter months. On average, the warmest month is September and the coolest month is December. Rainfall is highly variable within and between winter seasons with an average of 44 days with measurable precipitation annually (Western, 2005). Annual precipitation ranges from 13 to 17 inches with an average annual precipitation of 15 inches per year (CDWR, 2004).

### **4.2 VEGETATION AND LAND COVERS**

Biological resources observed within the BSA during the field survey were comprised primarily of common plant species and vegetation communities characteristic of the coastal dunes of Central California. Habitat conditions within the BSA were noted to be of good quality, with well-established communities comprised primarily of native shrub and non-native grasslands. Within the BSA, Stantec biologists mapped one plant community defined by Sawyer et al. (2009), one undefined community, and one additional land cover type. These are described further in Section 4.2.1 below, summarized in Table 1, and depicted in Figure 2 in Appendix A.



## 4.2.1 Vegetation Communities and Land Cover Types

### 4.2.1.1 Vegetation Communities

#### ***Lupinus chamissonis* - *Ericameria ericoides* Shrubland Alliance, *Ericameria ericoides* Association (silver dune lupine - mock heather scrub)**

Approximately 20.31 acres of this community occurs throughout the BSA. This shrub community is dominated with mock heather (*Ericameria ericoides*) with the occasional silver dune lupine (*Lupinus chamissonis*) present in some locations. The understory of this community is solely dominated by the non-native veldt grass (*Ehrharta calycina*). Sparsely interspersed within this community are native herbaceous species such as pink sand verbena (*Abronia umbellata*), California croton (*Croton californicus*), sand almond (*Prunus fasciculata* var. *punctata*), and telegraph weed (*Heterotheca grandiflora*) along with non-native species such as wild oats (*Avena fatua*) and false iceplant (*Conicospia pugioniformis*). Although not observed during the surveys, this community within the BSA is known to support Nipomo Mesa lupine (*Lupinus nipomensis*); refer to Figure 5 for the location of known occurrences within the BSA.

#### **Disturbed *Lupinus chamissonis* - *Ericameria ericoides* Shrubland Alliance, *Ericameria ericoides* Association (silver dune lupine - mock heather scrub)**

Approximately 1.38 acres of this community occurs within the landfill footprint in the central portion of the BSA. This shrub community is dominated with mock heather, albeit in much lower numbers than the surrounding, undisturbed habitats; more than half of the area mapped as Disturbed *Lupinus chamissonis* - *Ericameria ericoides* Shrubland Alliance, *Ericameria ericoides* Association is unvegetated. The understory of this community, where vegetated, is dominated by the non-native veldt grass (*Ehrharta calycina*). Sparsely interspersed within this community are native herbaceous species such as pink sand verbena (*Abronia umbellata*), California croton (*Croton californicus*), and telegraph weed (*Heterotheca grandiflora*) along with non-native species such as wild oats (*Avena fatua*). The entire footprint of this community is underlain by a historic landfill which is the root cause of the disturbed title for the community.

### 4.2.1.2 Other Land Cover Types

#### **Disturbed/Developed**

This classification was used to map portions of the BSA that are developed, primarily existing paved roadways and road shoulders and unvegetated earthen areas. The paved areas are limited to the refinery entrance road in the western portion of the BSA. The remaining areas mapped as disturbed/developed, are located within the fenced parcel containing the landfill, and include an unvegetated earthen access road and unvegetated staging/open area west of the landfill itself. Approximately 1.21 acres of this land cover type occur within the BSA.



**Table 1 Vegetation Communities and Land Cover Types Occurring within the BSA**

<b>Vegetation Community/Land Cover Types</b>	<b>Area within BSA (acres)</b>	<b>Proposed Temporary Impacts</b>
<i>Lupinus chamissonis</i> - <i>Ericameria ericoides</i> Shrubland Alliance, <i>Ericameria ericoides</i> Association	20.31	0.00
Disturbed <i>Lupinus chamissonis</i> - <i>Ericameria ericoides</i> Shrubland Alliance, <i>Ericameria ericoides</i> Association	1.38	1.38
Disturbed/Developed	1.21	0.15
<b>Total</b>	<b>22.90</b>	<b>1.53</b>

#### 4.2.2 Plant Species Observed

The BSA was assessed for common and rare vascular plants during the 2019 surveys, though a focused, floristic-level survey was not conducted. The survey resulted in the documentation of 26 species of native and non-native plants within the BSA. Table 2, below, presents a list of all plants observed within the BSA.

**Table 2 Plant Species Observed in the BSA**

<b>Scientific Name</b>	<b>Common Name</b>
<i>Abronia umbellata</i>	pink sand verberna
<i>Avena fatua</i> *	wild oat
<i>Bromus diandrus</i>	ripgut brome
<i>Ceanothus cuneatus</i>	buck brush
<i>Conicosia pugioniformis</i> *	false iceplant
<i>Croton californicus</i>	California croton
<i>Dudleya caespitosa</i>	coast dudleya
<i>Ehrharta calycina</i> *	perennial veldt grass
<i>Baccharis pilularis</i>	coyote bush
<i>Ericameria ericoides</i>	coast goldenbush (mock heather)
<i>Eriogonum parvifolium</i>	dune buckwheat
<i>Erodium cicutarium</i> *	redstem filaree
<i>Eschscholzia caespitosa</i>	tufted poppy
<i>Eucalyptus</i> spp.	gum tree
<i>Heterotheca grandiflora</i>	Telegraph weed
<i>Hordeum murinum</i> *	foxtail barley
<i>Horkelia cunteata</i> var. <i>cunteata</i>	coast horkelia
<i>Lamrckia aurea</i> *	goldentop grass
<i>Lotus scoparius</i>	deerweed
<i>Lupinus chamissonis</i>	silver dune lupine



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Scientific Name	Common Name
<i>Lupinus nipomensis</i> **	Nipomo Mesa lupine
<i>Penstemon centranthifolius</i>	scarlet bugler
<i>Pholisma arenarium</i>	scaly stemmed sand plant
<i>Plantago lanceolate</i> **	English plantain
<i>Prunus fasciculata</i> var. <i>punctata</i>	Sand almond
<i>Raphanus sativus</i> *	wild radish

\* Non-native Species

\*\* Not observed during surveys conducted by Stantec in 2019. Known from the BSA from surveys conducted by the San Luis Obispo Land Conservancy (refer to Figure 5)

## 4.3 COMMON WILDLIFE

### 4.3.1 Invertebrates and Gastropods

A focused insect survey within the boundaries of the BSA was not performed during the two survey events; however, a variety of common insects are known to occur in the area. Habitat conditions in the BSA provides a suite of microhabitat conditions for a wide variety of terrestrial insects and other invertebrates. As in all ecological systems, invertebrates in the BSA play a crucial role in a number of biological processes. They serve as the primary or secondary food source for a variety of bird, reptile, and mammal predators; they provide important pollination vectors for numerous plant species; they act as efficient components in controlling pest populations; and they support the naturally occurring maintenance of an area by consuming detritus and contributing to necessary soil nutrients. The reconnaissance surveys of the BSA detected a variety of common and non-native invertebrates. Some of the orders identified in the BSA included *Odonata* (dragonflies, damselflies), *Hemiptera* (true bugs), *Coleoptera* (beetles), *Diptera* (flies), *Lepidoptera* (moths and butterflies), *Hymenoptera* (wasps, bees and ants), and *Orthoptera* (grasshoppers).

### 4.3.2 Fish

No aquatic habitat occurs within or adjacent to the BSA; therefore, fish do not occur.

### 4.3.3 Amphibians

Amphibians often require a source of standing or flowing water to complete their life cycle. However, some terrestrial species can survive in drier areas by remaining in moist environments found beneath leaf litter and fallen logs, or by burrowing into the soil. Amphibian species were not observed during the reconnaissance surveys within the BSA; suitable aquatic habitat capable of supporting amphibian species is not present within or adjacent to the BSA. Species not observed in the BSA but known to occur in the general area include the Pacific treefrog [chorus frog] (*Pseudacris regilla*), western toad (*Anaxyrus boreas*), and the non-native bullfrog (*Lithobates catesbeiana*). These species all require aquatic habitat for all or part of their life cycle, which is not present in the BSA. These species are highly cryptic and often difficult to detect. Downed logs, bark, and other woody material, which provide shelter and feeding sites for a variety of wildlife, including amphibians and reptiles (Maser and Trappe, 1984; Aubry et al., 1988), was generally lacking within the BSA.



#### 4.3.4 Reptiles

The number and type of reptile species that may occur at a given site is related to a number of biotic and abiotic features. These include the diversity of plant communities, substrate, soil type, and presence of refugia such as rock piles, boulders, and native debris. Weather conditions were favorable during the surveys for reptile activity.

Western fence lizard (*Sceloporus occidentalis*) and Blainville's horned lizard (*Phrynosoma blainvilli*) were the only reptile species observed in the BSA during the surveys. Many reptile species, even if present, are difficult to detect because they are cryptic and their life history characteristics (e.g., foraging, thermoregulatory behavior, fossorial nature, camouflage etc.) limit their ability to be observed during most surveys. Further, many species are only active within relatively narrow thermal limits, avoiding both cold and hot conditions, and most take refuge in microhabitats that are not directly visible to the casual observer, such as rodent burrows, in crevices, under rocks and boards, and in dense vegetation where they are protected from unsuitable environmental conditions and predators (USACE and CDFG, 2010). In some cases, they are only observed when flushed from their refugia. Although not observed, several other common reptiles likely occur within the BSA. These include California alligator lizard (*Elgaria multicarinata multicarinata*), California kingsnake (*Lampropeltis getula californiae*), Pacific gopher snake (*Pituophis catenifer catenifer*), and side-blotched lizard (*Uta stansburiana elegans*).

#### 4.3.5 Birds

Birds were identified by sight and sound and were observed throughout the BSA. Some of these included mourning dove (*Zenaida macroura*), California gull (*Larus californicus*) and turkey vulture (*Cathartes aura*). All avian species identified in the BSA during the 2019 surveys are listed in Table 3. It is possible that many other birds use the BSA either as wintering habitat, seasonal breeding, or as occasional migrants. Although the following species were not detected in the BSA during the surveys, suitable habitat conditions were observed within the BSA for a number of common birds including black phoebe (*Sayornis nigricans*), Brewers blackbird (*Euphagus cyanocephalus*), American crow (*Corvus brachyrhynchos*), and lesser goldfinch (*Spinus psaltria*).

#### 4.3.6 Mammals

Generally, the distribution of mammals on a given site is associated with the presence of factors such as access to perennial water, topographical and structural components (e.g., rock piles, vegetation) that provide cover and support for a prey base, and the presence of suitable soils for fossorial mammals (e.g., sandy areas). Black-tailed jack rabbit (*Lepus californicus*) and coyote (*Canis latrans*) were detected in the BSA during surveys in 2019; coyotes were detected by sign (scat). Given the habitat conditions within the BSA, other mammal species including California ground squirrel (*Spermophilus beecheyi*), Audubon's cottontail (*Sylvilagus audubonii*), Virginia opossum (*Didelphis virginiana*), and raccoon (*Procyon lotor*), while not detected, may occur within the BSA. No special-status mammal species were observed in the BSA.

Although bats were not detected in the BSA, they likely forage and roost within the riparian areas located north and south of the BSA. Many bats tend to concentrate foraging activities in riparian habitats similar to those likely present within these areas, outside the BSA, where insect abundance is high (CDFW, 2000).



**Table 3 Wildlife Species Observed in the BSA**

Scientific Name	Common Name	Status
<i>Apodemia mormo</i>	Mormon metlemark	--
<i>Bos taurus</i>	cattle	--
<i>Buteo jamaicensis</i>	Red-tailed hawk	
<i>Canis latrans</i> *	coyote	--
<i>Cathartes aura</i>	turkey vulture	--
<i>Falco sparverius</i>	American kestrel	
<i>Larus californicus</i>	California gull	--
<i>Lepus californicus</i>	black-tailed jackrabbit	SSC
<i>Passerculus</i> spp. or <i>Melospiza</i> spp.	unidentified sparrow	--
<i>Phrynosoma blainvilli</i>	Blainville's horned lizard	SSC
<i>Sceloporus occidentalis</i>	western fence lizard	--
<i>Zenaida macroura</i>	mourning dove	--

**State Rankings:**

SSC = Species of Special Concern

\* observed via sign (scat, tracks, etc.)

## 4.4 JURISDICTIONAL WATERS/WETLANDS

There are three key agencies that regulate activities within inland streams, wetlands, and riparian areas in California: the USACE Regulatory Program regulates activities pursuant to Section 404 of the federal CWA; the CDFW regulates activities under the Fish and Game Code Section 1600-1607; and the RWQCB regulates activities under Section 401 of the CWA and the California Porter-Cologne Water Quality Control Act. A formal delineation was not conducted as part of the surveys within the BSA. During the two survey events, biologists did not observe any aquatic features within or adjacent to the BSA that would meet the jurisdictional requirements of the above noted agencies.

## 4.5 SOILS

Prior to conducting the field reconnaissance, historic soils data from the Natural Resources Conservation Service (NRCS) was used to determine potential soil types that may occur within the BSA, including where hydric soils may have historically occurred (refer to Appendix A, Figure 3). Characteristics of soils present on the site are summarized in Table 4. None of the soils listed in below appear on the NRCS hydric soils list.

**Table 4 Historic Soil Units Occurring in the BSA**

Map Unit Symbol	Map Unit Name	Description	Acres Within BSA
184	Oceano sand, 0 to 9 percent slopes	An excessively drained soil that is associated with dunes from 10-500 feet in elevation; parent material is eolian deposits; depth to water table is more than 80 inches; sand (0-60 inches).	19.43





Map Unit Symbol	Map Unit Name	Description	Acres Within BSA
185	Oceano sand, 9 to 30 percent slopes	An excessively drained soil that is associated with dunes from 10-500 feet in elevation; parent material is eolian deposits; depth to water table is more than 80 inches; sand (0-60 inches).	3.32

## 5.0 SPECIAL-STATUS BIOLOGICAL RESOURCES

The background information presented above, combined with field observations taken during the surveys, was used to generate a list of special-status natural communities and special-status plant and animal taxa that either occur or may have the potential to occur within the BSA and/or adjacent habitats. For the purposes of this report, special-status taxa are defined as plants or animals that:

- Have been designated as either rare, threatened, or endangered by CDFW or the USFWS, and are protected under either the California or Federal ESAs;
- Are candidate species being considered or proposed for listing under these same acts;
- Are recognized as Species of Special Concern by the CDFW;
- Are ranked as CRPR 1, 2, 3 or 4 plant species;
- Are fully protected by the California Fish and Game Code, Sections 3511, 4700, 5050, or 5515; or
- Are of expressed concern to resource/regulatory agencies, or local jurisdictions.

### 5.1 SPECIAL-STATUS NATURAL COMMUNITIES

Special-status natural communities are defined by CDFW (2009) as, "...communities that are of limited distribution statewide or within a county or region and are often vulnerable to environmental effects of projects." All vegetation within the state is ranked with an "S" rank, however only those that are of special concern (S1-S3 rank) are generally evaluated under CEQA. *Lupinus chamissonis* - *Ericameria ericoides* Shrubland Alliance, *Ericameria ericoides* Association is listed with a rank of S3 and approximately 20.31 acres of this habitat type occur within the BSA; and a rank of S3 which means it is vulnerable in the state due to a restricted range, relatively few populations (often 80 or fewer), recent and widespread declines, or other factors making it vulnerable to extirpation. This ranking was not afforded to the disturbed portions of this community (limited to the landfill footprint) due to the lack of substantial vegetation and less suitable soil conditions due to the underlying landfill.

### 5.2 DESIGNATED CRITICAL HABITAT

Literature review conducted prior to conducting field surveys determined that there is no critical habitat mapped within the BSA. However, critical habitat for La Graciosa thistle (*Cirsium scariosum* var. *loncholepis*), while not mapped within the BSA, occurs approximately 500 feet to west. The CNDDB reports multiple occurrences of this species in the region to the north and southwest of the BSA, with the closest approximately 3,000 feet from the BSA. However, this species



is generally found in marshes and dune wetlands which do not occur in the BSA, but it may be present in adjacent areas.

### 5.3 ENVIRONMENTALLY SENSITIVE HABITAT AREAS

Environmentally Sensitive Habitat Areas (ESHAs) are defined in Title 23 of the San Luis Obispo County Code, Coastal Zone Land Use Ordinance as: “A type of Sensitive Resource Area where plant or animal life or their habitats are either rare or especially valuable because of their special nature or role in an ecosystem and which could easily disturbed or degraded by human activities and development. They include wetlands, coastal streams and riparian vegetation, terrestrial and marine habitats and are mapped as Land Use Element combining designations.”.

Based on the guidelines presented in Title 23 of the San Luis Obispo County (SLO Co) Code, Coastal Zone Land Use Ordinance, Local Coastal Program (SLO Co 2018), all areas mapped as *Lupinus chamissonis* - *Ericameria ericoides* Shrubland Alliance, *Ericameria ericoides* Association (silver dune lupine - mock heather scrub), disturbed or not, meet the requirements to be considered unmapped ESHA. Based on the description of proposed Project activities, the Project would be considered a restoration project and would be allowed within an ESHA area as per Section 23.07.170 (e)(1)(v) of Title 23 of the San Luis Obispo County Code, Coastal Zone Land Use Ordinance (CZLUO), Local Coastal Program (SLO County 2018).

### 5.4 SPECIAL-STATUS PLANTS

Table 5 presents a list of special-status plants, including federally- and state listed species and CRPR 1-4 species that are known to occur in the vicinity of the BSA. No special-status plants were observed within the BSA during surveys conducted in 2019. However, surveys conducted by the San Luis Obispo Land Conservancy in previous years have documented Nipomo Mesa lupine within the boundaries of the BSA.

A records search of the CNDDDB, the CNPS Online Inventory, and the CCH was performed for special-status plant taxa and non-protocol plant surveys were conducted within the BSA (refer to Appendix A, Figures 4a and 4b). Each of the taxa identified in the record searches was assessed for their potential to occur within the BSA based on the following criteria:

- Present: Taxa were observed within the BSA during recent botanical surveys or population has been acknowledged by CDFW, USFWS, or local experts.
- High: Both a documented recent record (within 10 years) exists of the taxa within the BSA or immediate vicinity (approximately 5 miles) and the environmental conditions (including soil type) associated with taxa presence occur within the BSA.
- Moderate: Both a documented recent record (within 10 years) exists of the taxa within the BSA or the immediate vicinity (approximately 5 miles) and the environmental conditions associated with taxa presence are marginal and/or limited within the Project Area or the BSA is located within the known current distribution of the taxa and the environmental conditions (including soil type) associated with taxa presence occur within the BSA.



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- **Low:** A historical record (over 10 years) exists of the taxa within the BSA or general vicinity (approximately 10 miles) and the environmental conditions (including soil type) associated with taxa presence are marginal and/or limited within the BSA.
- **Not Likely to Occur:** The environmental conditions associated with taxa presence do not occur within the BSA.

**Table 5 Known and Potential Occurrences of Special-Status Plant Taxa within the BSA**

<b>Species</b>	<b>Status</b>	<b>Habitat and Distribution</b>	<b>Blooming Period*</b>	<b>Potential to Occur</b>
<i>Abronia maritima</i> Red sand verbena	4.2	Coastal dunes; 0-100 m.	Feb-Dec	<b>Low:</b> Suitable habitat is present within the BSA; there are multiple historical occurrences 2 -3 miles north, west, and southwest of the BSA.
<i>Agrostis hooveri</i> Hoover's bent grass	1B.2	Usually sandy; closed-cone coniferous forest, chaparral, cismontane woodland, valley and foothill grassland; 6-610 m.	Apr-Jul	<b>Not Likely to Occur:</b> Suitable habitat for this species does not occur in the BSA; the closest CNDDDB record is approximately 1.2 miles to the north from 1988.
<i>Aphanisma blitoides</i> Aphanisma	1B.2	Coastal scrub, bluffs, saline sand; 0-200 m	Mar-Jun	<b>Not Likely to Occur:</b> Suitable habitat for this species does not occur in the BSA; there historic records 5 – 7 miles southwest of the BSA.
<i>Arctostaphylos pilosula</i> Santa Margarita manzanita	1B.2	Sometimes sandstone; broadleafed upland forest, closed-cone coniferous forest, chaparral, cismontane woodland; 75-1100 m.	Dec-May	<b>Not Likely to Occur:</b> Suitable habitat for this species does not occur in the BSA; the closest CNDDDB record is approximately 1 mile to the northeast from 1985.
<i>Arctostaphylos purissima</i> La Purisima manzanita	1B.1	Chaparral (sandy) and coastal scrub; 60-555 m.	Nov-May	<b>Low:</b> Limited suitable habitat occurs within the BSA; the closest CNDDDB record is approximately 9 miles to the south from 1996.
<i>Arctostaphylos rudis</i> Sand mesa manzanita	1B.2	Sandy; chaparral (maritime) and coastal scrub; 25-322 m	Nov-Feb	<b>Moderate:</b> Limited suitable habitat occurs within the BSA; the closest CNDDDB record is approximately 1.5 miles to the east from 2010.



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Species	Status	Habitat and Distribution	Blooming Period*	Potential to Occur
<i>Arenaria paludicola</i> Marsh sandwort	FE, SE, 1B.1	Sandy, openings; marshes and swamps (freshwater or brackish); 3-170 m	May-Aug	<b>Not likely to occur:</b> Suitable habitat for this species does not occur in the BSA; there are multiple CNDDDB records from approximately 0.5 – 1.5 miles around the BSA.
<i>Astragalus nuttallii</i> var. <i>nuttallii</i> Ocean bluff milk-vetch	4.2	Rock, sandy areas, bluffs; 0-250 m.	Jan-Nov	<b>Low:</b> Suitable habitat is present within the BSA; there are multiple historic occurrences within 0.5 – 2 miles of the BSA.
<i>Atriplex serenana</i> var. <i>davidsonii</i> Davidson's saltscale	1B.2	Alkaline; coastal bluff scrub and coastal scrub; 10-200 m	Apr-Oct	<b>Low:</b> Limited suitable habitat occurs within the BSA; the closest CNDDDB record is approximately 4 miles to the south from 1965.
<i>Calochortus obispoensis</i> San Luis mariposa-lily	1B.2	Often serpentinite; chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland; 50-730 m.	May-Jul	<b>Low:</b> Limited suitable habitat occurs within the BSA; the closest CNDDDB record is approximately 6.5 miles to the south from 1995.
<i>Castilleja densiflora</i> var. <i>obispoensis</i> San Luis Obispo owl's-clover	1B.2	Sometimes serpentinite; meadows and seeps, valley and foothill grasslands; 10-430 m.	Mar-May	<b>Low:</b> Limited suitable habitat may be present within pockets of the BSA; the closest CNDDDB record is approximately 2 miles to the east from 2005.
<i>Ceanothus impressus</i> var. <i>nipomensis</i> Nipomo Mesa ceanothus	1B.2	Sandy; chaparral; 30-245 m.	Feb-Apr	<b>High:</b> Suitable habitat is present within the BSA; the nearest CNDDDB record is approximately 0.5 miles to the north from 2010.
<i>Chenopodium littoreum</i> Coastal goosefoot	1B.2	Coastal dunes; 10-30 m	Apr-Aug	<b>High:</b> Suitable habitat is present within the BSA; the nearest CNDDDB record is approximately 0.2 miles to the north from 2011.
<i>Chlorogalum pomedridianum</i> var. <i>minus</i> Dwarf soaproot	1B.2	Chaparral (serpentinite); 305-1000 m	May-Aug	<b>Not likely to occur:</b> Suitable habitat for this species does not occur in the BSA; the nearest CNDDDB record is approximately 8.25 miles to the north from 2015.



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Species	Status	Habitat and Distribution	Blooming Period*	Potential to Occur
<i>Chorizanthe breweri</i> Brewer's spineflower	1B.3	Serpentine, rocky, or gravelly; closed-cone coniferous forest, chaparral, cismontane woodland, coastal scrub; 45-800 m.	Apr-Aug	<b>Not likely to occur:</b> Suitable habitat for this species does not occur in the BSA; the nearest CNDDDB record is approximately 10 miles to the north from 1977.
<i>Chorizanthe rectispina</i> Straight owned spineflower	1B.3	Chaparral, cismontane woodland, coastal scrub; 85-1035 m	Apr-Jul	<b>Low:</b> Limited suitable habitat may be present within pockets of the BSA; the closest CNDDDB record is approximately 6.0 miles to the east from 2003.
<i>Cirsium occidentale</i> var. <i>compactum</i> Compact cobwebby thistle	1B.2	Chaparral, coastal dunes, coastal prairie, coastal scrub; 5-150 m	Apr-Jun	<b>Low:</b> Suitable habitat is present within the BSA; the closest CNDDDB record is approximately 8.5 miles to the south from 1962.
<i>Cirsium rhotophilum</i> Surf thistle	ST, 1B.2	Coastal bluff scrub, coastal dunes; 3-60 m	Apr-Jun	<b>Moderate:</b> Suitable habitat is present within the BSA; the nearest CNDDDB record is approximately 2.25 miles to the west from 1998.
<i>Cirsium scariosum</i> var. <i>loncholepis</i> La Graciosa thistle	FE, ST, 1B.1	Mesic, sandy; cismontane woodland, coastal dunes, coastal scrub, marshes and swamps (brackish), valley and foothill grassland; 4-220 m	May-Aug	<b>High:</b> Suitable habitat is present in the BSA; there are multiple recent CNDDDB records from within approximately 0.7 – 1 mile to the west of the BSA.
<i>Cladium californicum</i> California saw-grass	2B.2	Meadows and seeps. Marshes and swamps (alkaline or freshwater); 60-1600 m	Jun-Sep	<b>Not likely to occur:</b> Suitable habitat for this species does not occur in the BSA; the nearest CNDDDB record is approximately 0.5 miles to the north from the 1990.
<i>Clarkia speciosa</i> ssp. <i>immaculata</i> Pismo clarkia	FE, SR, 1B.1	Sandy; chaparral (margins, openings), cismontane woodland, valley and foothill grassland; 25-185 m	May-Jul	<b>Moderate:</b> Limited suitable habitat may be present within pockets of the BSA; the closest CNDDDB record is approximately 2.25 miles to the east from 2000.



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Species	Status	Habitat and Distribution	Blooming Period*	Potential to Occur
<i>Corethrogyne leucophylla</i> Branching beach aster	3.2	Coastal dunes; 0 – 60 m.	May-Dec	<b>Low:</b> Suitable habitat is present within the BSA; there are multiple historic occurrences within 2 - 3 miles of the BSA
<i>Delphinium parryi</i> ssp. <i>blochmaniae</i> Dune larkspur	1B.2	Chaparral (maritime) and coastal dunes; 0-200 m	Apr-Jun	<b>High:</b> Suitable habitat is present within the BSA; there are CNDDDB records for this species within and immediately adjacent to the BSA from 1998.
<i>Dithyrea maritima</i> Beach spectaclepod	ST, 1B.1	Coastal dunes, coastal scrub (sandy); 3-50 m	Mar-May	<b>High:</b> Suitable habitat is present within the BSA; the nearest CNDDDB record is approximately 2 miles to the west from 2019.
<i>Dudleya blockmaniae</i> ssp. <i>blochmaniae</i> Blochman's dudleya	1B.1	Rocky, often clay or serpentinite; coastal bluff scrub, chaparral, coastal scrub, valley and foothill grassland; 5-450 m	Apr-Jun	<b>Low:</b> Limited suitable habitat may be present within pockets of the BSA; the closest CNDDDB record is approximately 10 miles to the south from 1991.
<i>Erigeron blochmaniae</i> Blockman's leafy daisy	1B.2	Coastal dunes and coastal scrub; 3-45 m	Jun-Aug	<b>High:</b> Suitable habitat is present within the BSA; there are multiple CNDDDB records for this species within approximately 0.25 – 3.5 miles of the BSA.
<i>Erysimum suffrutescens</i> Suffrutescent wallflower	4.2	Stabilized coastal dunes, coastal scrub; 0-150 m.	Jan-July	<b>Moderate:</b> Suitable habitat is present within the BSA; there are multiple historic records within 1 – 2 miles north and west of the BSA.
<i>Horkelia cuneata</i> var. <i>puberula</i> mesa horkelia	1B.1	Chaparral, cismontane woodland, coastal scrub. Sandy or gravelly sites. 15-1645 m.	Feb-Jul (Sep)	<b>Low:</b> Limited suitable habitat may be present within pockets of the BSA; the closest CNDDDB record is approximately 1.5 miles to the west from 1973.
<i>Horkelia cuneata</i> var. <i>sericea</i> Kellogg's horkelia	1B.1	Old dunes, coastal sandhills; 0-200 m.	Feb-Jul	<b>Low:</b> Suitable habitat is present within the BSA; There are multiple historic occurrences north and west of the BSA.



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Species	Status	Habitat and Distribution	Blooming Period*	Potential to Occur
<i>Lupinus ludovicianus</i> San Luis Obispo County lupine	1B.2	Sandstone or sandy; chaparral, cismontane woodland; 50-525 m	Apr-Jul	<b>Not likely to occur:</b> Suitable habitat for this species does not occur in the BSA; the nearest CNDDDB record is approximately 8.25 miles to the north from 1986.
<i>Lupinus nipomensis</i> Nipomo Mesa lupine	FE, SE, 1B.1	Coastal dunes; 10-50 m.	Dec-May	<b>Present:</b> This species has been observed within the BSA but is outside of any proposed impact areas.
<i>Malacothamnus gracilis</i> Slender bush-mallow	1B.1	Usually rocky; chaparral; 190-575 m	May-Oct	<b>Not likely to occur:</b> Suitable habitat for this species does not occur in the BSA; the nearest CNDDDB record is approximately 6.5 miles to the north from 1927.
<i>Malacothrix incana</i> Dunedelion	4.3	Dunes; 0-300m	Jan-Oct	<b>Low:</b> Suitable habitat is present within the BSA; there are multiple historic occurrences within 1 mile of the BSA.
<i>Monardella sinuata</i> ssp. <i>sinuata</i> Southern curly-leaved monardella	1B.2	Sandy; chaparral, cismontane woodland, coastal dunes, coastal scrub (openings); 0-300 m	Apr-Sep	<b>Low:</b> Suitable habitat is present within the BSA; the closest CNDDDB record is approximately 0.25 miles to the east from 1948.
<i>Monardella undulata</i> ssp. <i>crispa</i> Crisp monardella	1B.2	Coastal dunes, coastal scrub; 10- 120 m	Apr-Aug (Dec)	<b>High:</b> Suitable habitat is present within the BSA; there are multiple CNDDDB records for this species within approximately 0.5 miles of the BSA.
<i>Monardella undulata</i> ssp. <i>undulata</i> San Luis Obispo monardella	1B.2	Coastal dunes, coastal scrub (sandy); 10-200 m	May-Sep	<b>High:</b> Suitable habitat is present within the BSA; there are CNDDDB records from within the BSA from 2012.
<i>Mucronea californica</i> California spineflower	4.2	Sandy areas; 0-1000 m.	May-Jul	<b>Low:</b> Suitable habitat is present within the BSA; there are multiple historic occurrences within 0.25 – 1.0 miles west of the BSA.



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Species	Status	Habitat and Distribution	Blooming Period*	Potential to Occur
<i>Nasturtium gambelii</i> Gambel's watercress	FE, ST, 1B.1	Marshes and swamps (freshwater or brackish); 5-330 m	Apr-Oct	<b>Not likely to occur:</b> Suitable habitat for this species does not occur in the BSA; the nearest CNDDDB record is approximately 0.75 miles to the north from 2005.
<i>Nemacaulis denudata</i> var. <i>denudata</i> Coast wooly-heads	1B.2	Coastal dunes; 0-100 m	Apr-Sep	<b>High:</b> Suitable habitat is present within the BSA; the nearest CNDDDB record is approximately 0.5 miles to the west from 2000.
<i>Orobanche parishii</i> ssp. <i>brachyloba</i> Short-lobed broomrape	4.2	Sandy; coastal bluff scrub, coastal dunes, coastal scrub; 3-305 m	Apr-Oct	<b>Low:</b> Limited suitable habitat may be present within pockets of the BSA; the closest CNDDDB record is approximately 2 miles to the west from 1967.
<i>Prunus fasciculata</i> var. <i>punctate</i> Sand almond	4.3	Sandy soils, scrubland, oak woodland, 0-200 m.	Mar-Apr	<b>Present:</b> Multiple occurrences of this species were observed within the BSA; on the slopes above the NIWS and in areas immediately west. Not occurrences were noted within the disturbed areas of the NIWS.
<i>Scrophularia atrata</i> Black-flowered figwort	1B.2	Closed-cone coniferous forest; chaparral, coastal dunes, coastal scrub, riparian scrub; 10-500 m	Mar-Jul	<b>Moderate:</b> Suitable habitat is present within the BSA; the closest CNDDDB record is approximately 3.5 miles to the south from 2005.
<i>Senecio aphanactis</i> chaparral ragwort	2B.2	Chaparral, cismontane woodland, coastal scrub. Drying alkaline flats. 20-855 m.	Jan-Apr (May)	<b>Low:</b> Limited suitable habitat may be present within pockets of the BSA; the closest CNDDDB record is approximately 8.5 miles to the northeast from 2015.





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Species	Status	Habitat and Distribution	Blooming Period*	Potential to Occur
<i>Senecio blochmaniae</i> Blochman's ragwort	4.2	Coastal sand dunes, sandy floodplains.0 – 150 m.	May - Nov	<b>Moderate:</b> Suitable habitat is present within the BSA. There are multiple occurrences approximately 1.0 mile from the BSA however they are from the 1960's. There is a single occurrence from 2006 approximately 1.5 mile west of the BSA.
<i>Symphyotrichum defoliatum</i> San Bernardino aster	1B.2	Meadows and seeps, cismontane woodland, coastal scrub, lower montane coniferous forest, marshes and swamps, valley and foothill grassland. Vernal mesic grassland or near ditches, streams and springs; disturbed areas. 3-2045 m.	Jul-Nov	<b>Low:</b> Limited suitable habitat may be present within pockets of the BSA; the closest CNDDDB record is approximately 2.25 miles to the north from 1993.
<p>Source: Baldwin et al. 2012; CDFW, 2019a; CNPS, 2019.</p> <p>* Months appearing in parenthesis listed under blooming periods above indicates and additional but uncommon blooming period for that specific species.</p> <p>**</p> <p><b>Status Codes</b></p> <p><b>US Fish and Wildlife Service (Fed.) Designations:</b></p> <p>END: Federally listed, endangered.</p> <p>THR: Federally listed, threatened.</p> <p><b>California Department of Fish and Wildlife (Calif.) Designations:</b></p> <p>END: State listed, endangered.</p> <p>THR: State listed, threatened.</p> <p><b>California Rare Plant Rank (CRPR) designation</b></p> <p>1A Plants presumed extinct in California.</p> <p>1B Plants rare, threatened, or endangered in California and elsewhere.</p> <p>2A Plants rare, threatened, or endangered in California, but more common elsewhere.</p> <p>2B Plants presumed extinct in California but more common elsewhere.</p> <p>3 Plants about which we need more information – a review list.</p> <p>4 Plants of limited distribution – a watch list.</p> <p>.1 Seriously threatened in California (high degree/immediacy of threat).</p> <p>.2 Fairly threatened in California (moderate degree/immediacy of threat).</p> <p>.3 Not very threatened in California (low degree/immediacy of threats or no current threats known).</p>				

## 5.5 SPECIAL-STATUS WILDLIFE

Special-status taxa include those listed as threatened or endangered under the federal or California ESAs, taxa proposed for such listing, Species of Special Concern, and other taxa that have been identified by the USFWS, CDFW, or local jurisdictions as unique or rare and which have the potential to occur within the BSA. No special-status wildlife species were either observed within or immediately adjacent to the BSA during the survey conducted in 2019.

The CNDDDB was queried for occurrences of special-status wildlife taxa within the USGS topographical quadrangles in which the BSA occurs and the eight surrounding quadrangles, as discussed above in Section 2.0 (refer to Appendix A, Figures 4a and 4c). The specific habitat requirements and the locations of known occurrences of each special-status wildlife taxa were the principal criteria used for inclusion in the list of taxa potentially occurring within the BSA. Table 6 summarizes the special-status wildlife taxa known to regionally occur and their potential for occurrence in the BSA;



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refer to Appendix A, Figures 4a and 4c for a graphical depiction of species locations. Each of the taxa identified in the database reviews/searches were assessed for its potential to occur within the BSA based on the following criteria:

- **Present:** Taxa (or sign) were observed in the BSA or in the same watershed (aquatic taxa only) during the most recent surveys, or a population has been acknowledged by CDFW, USFWS, or local experts.
- **High:** Habitat (including soils) for the taxa occurs on site and a known occurrence occurs within the BSA or adjacent areas (within 5 miles of the Project Area) within the past 20 years; however, these taxa were not detected during the most recent surveys.
- **Moderate:** Habitat (including soils) for the taxa occurs on site and a known regional record occurs within the database search, but not within 5 miles of the BSA or within the past 20 years; or a known occurrence occurs within 5 miles of the BSA and within the past 20 years and marginal or limited amounts of habitat occurs on site; or the taxa's range includes the geographic area and suitable habitat exists.
- **Low:** Limited habitat for the taxa occurs on site and no known occurrences were found within the database search and the taxa's range includes the geographic area.
- **Not Likely to Occur:** The environmental conditions associated with taxa presence do not occur within the BSA.



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**Table 6 Known and Potential Occurrence of Special-Status Wildlife within the BSA**

Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
INVERTEBRATES					
<i>Ablautus schlingeri</i>	Oso Flaco robber fly	SA	Known from sand dunes in the general vicinity of Oso Flaco Lake in San Luis Obispo County.	Suitable dune habitat is present within the BSA and there is a historical CNDDDB record approximately 1.5 miles to the west.	Low
<i>Areniscythris brachypteris</i>	Oso Flaco flightless moth	SA	Known from sand dunes in the general vicinity of Oso Flaco Lake in San Luis Obispo County.	Suitable dune habitat is present within the BSA and there are historical CNDDDB records approximately 1.5 miles to the northwest and southwest.	Low
<i>Bombus caliginosus</i>	obscure bumble bee	SA	Coastal areas from Santa Barbara County to north to Washington state. Food plant genera include <i>Baccharis</i> , <i>Cirsium</i> , <i>Lupinus</i> , <i>Lotus</i> , <i>Grindelia</i> and <i>Phacelia</i> .	Suitable habitat and food plants are present within the BSA. The nearest CNDDDB records are from approximately 1.5 miles to the southwest (1968) and 0.75 miles to the northwest (1973).	Low
<i>Chlosyne leanira elegans</i>	Oso Flaco patch butterfly	SA	Sand dune habitat around Oso Flaco Lake, San Luis Obispo County.	While suitable dune habitat for this species occurs within the BSA, the foodplant for this species (coast Indian paintbrush [ <i>Castilleja affinis</i> ssp. <i>affinis</i> ]), has not been observed; this plant species is known to occur in adjacent areas. The CNDDDB reports an occurrence approximately 1 mile to the southwest from 1983.	Low
<i>Cicindela hirticollis gravida</i>	sandy beach tiger beetle	SA	Habitat preference is moist sand near the ocean; often found in depressions behind sand dunes or along the upper portions of sandy beaches beyond the normal high tide mark.	This species prefers moist sand, closer to the beach, that is not present within the BSA. The nearest CNDDDB record is approximately 1.5 miles to the west from 1969.	Not Likely to Occur
<i>Danaus plexippus</i> pop. 1	monarch - California overwintering population	SA	Winter roost sites extend along the coast from northern Mendocino to Baja California, Mexico. Roosts located in wind-protected tree groves (eucalyptus, Monterey pine, cypress), with nectar and water sources nearby.	Suitable roosting habitat is not present in the BSA but does occur in adjacent areas. Suitable nectar sources may be present in the BSA There is a CNDDDB record from 1983 approximately 0.25 miles to the east.	Not Likely to Occur (roosting)/Moderate (foraging)
<i>Lichnanthe albipilosa</i>	white sand bear scarab beetle	SA	Inhabits coastal dunes of San Luis Obispo County, generally in the vicinity of dune lakes.	While sand dunes are the preferred habitat for his species all known occurrences have near some kind of dune lake/aquatic feature which is lacking within the BSA. The nearest CNDDDB record for this species is approximately 1.5 miles to the northwest from 2004.	Low



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Plebejus icarioides moroensis</i>	Morro bay blue butterfly	SA	Inhabits coastal areas of San Luis Obispo and Santa Barbara Counties; requires <i>Lupinus chamissonis</i> as a host plant.	Suitable habitat for this species occurs throughout the BSA. The nearest CNDDDB record is approximately 1.5 miles to the west from 2004.	High
<i>Tryonia imitator</i>	mimic tryonia (California brackishwater snail)	SA	Habitat preference includes brackish water marshes, coastal lagoons, and estuaries; species can occur in a wide range of salinities.	Suitable habitat for this species does not occur within the BSA. The nearest CNDDDB record for this species is approximately 4 miles to the north from 1979.	Not Likely to Occur
<b>FISH</b>					
<i>Eucyclogobius newberryi</i>	tidewater goby	FE, SSC	Brackish water habitats along the California Coast from Agua Hedionda Lagoon, San Diego County to the mouth of the Smith River. Found in shallow lagoons and lower stream reaches, they need fairly still but not stagnant water and high oxygen levels.	The nearest CNDDDB record for this species is approximately 4 miles to the north from 2008 however, there is no suitable habitat within or adjacent to the BSA.	Not Likely to Occur
<i>Gila orcuttii</i>	arroyo chub	SSC	Native to streams from Malibu creek to San Luis Rey river basin. Introduced into streams in Santa Clara, Ventura, Santa Ynez, Mojave and San Diego river basins. Slow water stream sections with mud or sand bottoms. Feeds heavily on aquatic vegetation and associated invertebrates.	Although there is a CNDDDB record approximately 6 miles to the south, from 1996, no suitable aquatic habitat occurs within or adjacent to the BSA.	Not Likely to Occur
<i>Oncorhynchus mykiss irideus</i> pop. 9	steelhead - southern California DPS	FT	Federal listing refers to populations from Santa Maria river south to southern extent of range (San Mateo creek in San Diego County). Southern steelhead likely have greater physiological tolerance to warmer water and more variable conditions.	Although there is a CNDDDB record approximately 3 miles to the north, from 2008, no suitable aquatic habitat occurs within or adjacent to the BSA.	Not Likely to Occur
<b>AMPHIBIANS</b>					
<i>Ambystoma californiense</i>	California tiger salamander	FT, ST, WL	Grasslands and foothills will aquatic habitat for breeding and abundant small mammal activity for burrows.	Suitable habitat for this species does not occur within the BSA. The nearest CNDDDB record is approximately 9 miles to the south.	Not Likely to Occur
<i>Rana boylei</i>	foothill yellow-legged frog	SC, SSC	Inhabits shallow, small to medium-sized, rocky streams, from sea level to about 6,365 feet	Suitable habitat for this species does not occur within the BSA. The nearest CNDDDB record (historic) is approximately 7.75 miles to the north.	Not Likely to Occur
<i>Rana draytonii</i>	California red-legged frog	FT, SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation; requires 11-20 weeks of permanent water for larval development; must have access to aestivation habitat.	Suitable habitat for this species does not occur within the BSA. There are multiple CNDDDB records from within 0.5 – 1.5 miles to the west and southwest.	Not Likely to Occur



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Spea hammondi</i>	western spadefoot	SSC	Occurs primarily in grassland habitats but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	Suitable habitat for this species does not occur in the BSA. The nearest CNDDB record is approximately 6.5 miles to the southeast from 1995.	Not Likely to Occur
<b>REPTILES</b>					
<i>Anniella pulchra</i>	Northern California legless lizard	SSC	Sandy or loose loamy soils under sparse vegetation; soil moisture is essential; prefer soils with high moisture content.	Suitable habitat is present within the BSA. There are multiple CNDDB records from within approximately 1 mile, including several in adjacent areas.	High
<i>Emys marmorata</i>	western pond turtle	SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.	Suitable aquatic habitat is not present within or adjacent to the BSA. There is a CNDDB record for this species approximately 0.5 miles to the west from 2006.	Low
<i>Phrynosoma blainvillii</i>	coast horned lizard	SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.	Suitable habitat is present within the BSA and this species was observed in the BSA during the surveys conducted in 2019.	Present
<i>Thamnophis hammondi</i>	two-striped gartersnake	SSC	Coast California form vicinity of Salinas to northwest Baja California. From sea to about 7000 ft. elevation. Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth.	Suitable aquatic habitat for this species does not occur in the BSA. The nearest CNDDB record is approximately 5 miles to the southwest from 2008.	Not Likely to Occur
<b>BIRDS</b>					
<i>Accipiter striatus</i>	sharp-shinned hawk	WL	Prefers, but not restricted to riparian habitats; breeds in ponderosa pine, black oak, riparian deciduous, mixed conifer, and Jeffrey pine habitats; requires north-facing slopes with perches.	Suitable nesting habitat is not present in the BSA but may be available in adjacent areas. This species may forage within the BSA. The nearest CNDDB record is approximately 2.25 miles to the south from 2003.	Not Likely to Occur (nesting)/Moderate (foraging)
<i>Athene cunicularia</i>	burrowing owl	SSC	Open, dry annual or perennial grasslands, deserts and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.	Limited suitable nesting habitat is present in the BSA; limited foraging habitat is available as small mammal activity within the BSA was noted as minimal during the 2019 surveys. The nearest CNDDB record is approximately 5 miles to the southwest from 2006. eBird reports multiple occurrences within approximately 2 miles of the BSA to the west and south.	Moderate



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Buteo swainsoni</i>	Swainson's hawk	ST, BCC	Breeds in stands with few trees in juniper-sage flats, riparian areas, and oak savannahs.	Suitable nesting habitat is not present in the BSA but may be available in adjacent areas. This species may forage within the BSA. The nearest CNDDDB record is approximately 4.0 miles to the south from the late 1800's. eBird reports a recent occurrence approximately 2 miles to the west of the BSA.	Not Likely to Occur (nesting)/Low (foraging)
<i>Charadrius alexandrinus nivosus</i>	western snowy plover	FT, SSC, BCC	Sandy beaches, salt pond levees and shores of large alkali lakes. Needs sandy, gravelly or friable soils for nesting.	Suitable nesting habitat is not present within the BSA but is known to occur further west along the coastal beaches. The CNDDDB reports multiple occurrences of this species ranging from approximately 1.5 – 4 miles to the west and northwest. Multiple occurrences of this species are reported in eBird from approximately 1 – 2 miles to the west, northwest, and southwest of the BSA.	Not Likely to Occur (nesting)/Low (foraging)
<i>Falco mexicanus</i>	prairie falcon	WL, BCC	Resident and winter visitor. Inhabits dry, open terrain, including grasslands, scrub and desert. Breeding sites typically located on remote cliffs. Forages widely.	Suitable nesting habitat is not present in the BSA but may be available in adjacent areas. This species may forage within the BSA. The nearest CNDDDB record for this species is approximately 7.5 miles to the northeast of the BSA from the 1970's. eBird reports a recent occurrence approximately 2 miles to the west of the BSA.	Not Likely to Occur (nesting)/Low (foraging)
<i>Falco peregrinus anatum</i>	American peregrine falcon	CFP, BCC	Occurs in various open habitats, especially where suitable nesting cliffs present.	Suitable nesting habitat is not present in the BSA but may be available in adjacent areas. This species may forage within the BSA. The nearest CNDDDB record for this species is approximately 3.75 miles to the southwest of the BSA from 2013. eBird reports multiple occurrences approximately 1.5 – 2 miles to the west along the coastline.	Not Likely to Occur (nesting)/Moderate (foraging)
<i>Laterallus jamaicensis coturniculus</i>	California black rail	ST, CFP, BCC	Inhabits tidal emergent wetlands dominated by <i>Salicornia pacifica</i> and brackish marshes supporting <i>Schoenoplectis</i> species. Forages on invertebrates found on the surface of mud or other vegetation.	Suitable nesting habitat for this species does not occur in the BSA. There are multiple CNDDDB records for this species approximately 0.75 – 1.75 miles to the northwest and southwest of the BSA.	Not Likely to Occur (nesting)/Low (foraging)



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Taxa		Status	Habitat Type	Comments	Occurrence Potential
Scientific Name	Common Name				
<i>Sternula antillarum browni</i>	California least tern	FE, SE, CFP	Prefers coastal areas; generally, nests on beach areas in loose sandy soils.	Suitable nesting habitat is not present in the BSA but may be available in adjacent areas. The nearest CNDDDB record for this species is approximately 1.5 miles to the southwest of the BSA from 2016. eBird reports multiple occurrences approximately 1.5 – 2.0 miles to the west along the coastline.	<b>Not Likely to Occur (nesting)/Low (foraging)</b>
<b>MAMMALS</b>					
<i>Corynorhinus townsendii</i>	Townsend's big-eared bat	SSC	Coastal conifer and broadleaved forests, oak and conifer woodlands, arid grasslands and deserts, and high-elevation forests and meadows. Primarily roosts in caves and abandoned mines, but may roost in buildings, bridges, rock crevices, and hollow trees in many habitat types.	Suitable roosting habitat does not occur in the BSA but may occur in adjacent areas; suitable foraging may be present within portions of the BSA. The nearest CNDDDB record is approximately 8 miles to the north from 1992.	<b>Not Likely to Occur (roosting)/Low (foraging)</b>
<i>Lepus californicus bennettii</i>	San Diego black-tailed jackrabbit	SSC	Intermediate canopy stages of shrub habitats and shrub, tree, herbaceous edges; primarily coastal sage scrub habitats.	This species was observed during surveys within the BSA.	<b>Present</b>
<i>Taxidea taxus</i>	American badger	SSC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils. Needs sufficient food, friable soils and open, uncultivated ground. Preys on burrowing rodents. Digs burrows.	Suitable habitat is present in the BSA. There was a badger den observed on SMR property in 2018 several miles from the BSA. The nearest CNDDDB record is approximately 0.25 miles to the southwest from 2006.	<b>High</b>

**Federal Rankings:**

FE = Federally Endangered  
FT = Federally Threatened  
FP = Federally Protected  
FC = Federal Candidate for Listing  
BCC = USFWS Bird of Conservation Concern

**State Rankings:**

SE = State Endangered  
ST = State Threatened  
SC = State Candidate for Listing  
CFP = California Fully Protected  
CPF = California Protected Fur-bearer  
SA = CDFW Special Animal  
WL = CDFW Watch List  
SSC = Species of Special Concern



## 5.6 WILDLIFE CORRIDORS AND SPECIAL LINKAGES

Linkages and corridors facilitate regional animal movement and are generally centered in or around waterways, riparian corridors, flood control channels, contiguous habitat, or upland habitat. Drainages generally serve as movement corridors because wildlife can move easily through these areas and fresh water is available. Corridors also offer wildlife unobstructed terrain for foraging and for dispersal of young individuals.

As the movements of wildlife species are more intensively studied using radio-tracking devices, there is mounting evidence that some wildlife species do not necessarily restrict their movements to some obvious landscape element, such as a riparian corridor. For example, recent radio-tracking and tagging studies of amphibians and reptiles found that long-distance dispersal involved radial or perpendicular movements away from a water source with little regard to the orientation of the assumed riparian “movement corridor” (Hunt, 1993; Rathbun et al., 1992; Bulger et al., 2002; Trentham, 2002; Ramirez, 2002, 2003a, 2003b). Likewise, carnivores do not necessarily use riparian corridors as movement corridors, frequently moving overland in a straight line between two points when traversing large distances (Newmark, 1995; Beier, 1993, 1995; Noss, et al., 1996; Noss et al., no date). In general, the following corridor functions can be utilized when evaluating impacts to wildlife movement corridors:

- Movement corridors are physical connections that allow wildlife to move between patches of suitable habitat. Simberloff et al. (1992) and Beier and Loe (1992) correctly state that, for most species, we do not know what corridor traits (length, width, adjacent land use, etc.) are required for a corridor to be useful. But, as Beier and Loe (1992) also note, the critical features of a movement corridor may not be its physical traits but rather how well a particular piece of land fulfills several functions, including allowing dispersal, plant propagation, genetic interchange, and recolonization following local extirpation.
- Dispersal corridors are relatively narrow, linear landscape features embedded in a dissimilar matrix that links two or more areas of suitable habitat that would otherwise be fragmented and isolated from one another by rugged terrain, changes in vegetation, or human-altered environments. Corridors of habitat are essential to the local and regional population dynamics of a species because they provide physical links for genetic exchange and allow animals to access alternative territories as dictated by fluctuating population densities.
- Habitat linkages are broader connections between two or more habitat areas. This term is commonly used as a synonym for a wildlife corridor (Meffe and Carroll, 1997). Habitat linkages may themselves serve as source areas for food, water, and cover, particularly for small- and medium-size animals.
- Travel routes are usually landscape features, such as ridgelines, drainages, canyons, or riparian corridors within larger natural habitat areas that are used frequently by animals to facilitate movement and provide access to water, food, cover, den sites, or other necessary resources. A travel route is generally preferred by a species because it provides the least amount of topographic resistance in moving from one area to another yet still provides adequate food, water, or cover (Meffe and Carroll, 1997).
- Wildlife crossings are small, narrow areas of limited extent that allow wildlife to bypass an obstacle or barrier. Crossings typically are manmade and include culverts, underpasses, drainage pipes, bridges, and tunnels to provide access past roads, highways, pipelines, or other physical obstacles. Wildlife crossings often represent “choke points” along a movement corridor because useable habitat is physically constricted at the crossing by human-induced changes to the surrounding areas (Meffe and Carroll, 1997).





### 5.6.1 Wildlife Movement in the BSA

There has been no known widespread analysis on wildlife movement conducted on the BSA; the 2015 Final Environmental Impact Report for the nearby Phillips SMR Rail Project did not identify any wildlife corridors within the vicinity of the SMR (Marine Research Specialists, 2015). Terrestrial wildlife, such as coyote and badger, are known from the area and may use portions of the BSA as a pathway around the adjacent development. The presence of larger mammals, such as coyote, within the BSA indicates that wildlife is able to navigate the existing fencing.

## 5.7 SUFFICIENCY OF BIOLOGICAL DATA

Surveys and data collected to support the analysis presented in this BRTR was sufficient in terms of analyzing impacts special-status wildlife as they were done during appropriate times of the year when wildlife known to occur in the general area would have been present and active. Surveys for botanical resources, however, were not floristic in nature, and may not have captured the blooming periods for all special-status species that have the potential to occur in the BSA. Therefore, as described below under Section 6.5, focused floristic surveys will be conducted in the spring/summer of 2020 and a survey report submitted to the County of San Luis Obispo for review and approval as an addendum to this BRTR.

## 6.0 IMPACTS AND AVOIDANCE/MINIMIZATION MEASURES

Construction of the Project would temporarily impact both native and non-native vegetation communities that support a variety of common and sensitive species. The Project proposes to excavate and remove soils and debris from within portions of the NIWS and transport them off-site. During construction activities, if present, direct impacts to special-status plants include trampling or crushing from heavy equipment, vehicles, or foot traffic; alterations to the native seed bank due to soil compaction; and modifications to existing hydrological conditions. Indirect impacts could include the disruption of native seed banks through soil alterations, the accumulation of fugitive dust, increased erosion and sediment transport, and the colonization of non-native and invasive plant species. Excessive dust can decrease or limit plant survivorship by decreasing photosynthetic output, reducing transpiration, and adversely affecting reproductive success. Ground-disturbing activities that would occur during the Project can result in the proliferation and spread of non-native invasive plants to new areas. Because noxious weeds can permanently degrade rare plant and animal habitats, their proliferation could adversely affect sensitive plant species if they are present.

Table 5 (Section 5) lists special-status plants that have the potential to occur within the BSA due to the presence of suitable habitat and known occurrences within five miles of the BSA or are known to be present within the BSA. Nipomo Mesa lupine and sand almond, while present in the BSA, have not been documented within the proposed excavation/impact areas nor are they expected to occur due to the disturbed soils associated with the landfill proposed for removal.

Other special-status species such as sand mesa manzanita (*Arctostaphylos rudis*), Nipomo Mesa ceanothus (*Ceanothus impressus* var. *nipomensis*), Coastal goosefoot (*Chenopodium littoreum*), surf thistle (*Cirsium rhotophyllum*), La Graciosa thistle (*Cirsium scariosum* var. *loncholepis*), Pismo clarkia (*Clarkia speciose* ssp. *immaculata*), dune larkspur (*Delphinium parryi* ssp. *blochmaniae*), beach spectaclepod (*Dithyrea maritima*),



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Blockman's leafy daisy (*Erigeron blochmaniae*), suffrutescent wallflower (*Erysimum suffrutescens*), Crisp monardella (*Monardella undulata* ssp. *crispa*), San Luis Obispo monardella (*Monardella undulata* ssp. *undulata*), coast wooly-heads (*Nemacaulis denudata* var. *denudata*), black-flowered figwort (*Scrophularia atrata*), and Blochman's ragwort (*Senecio blochmaniae*) were determined to have a high or moderate potential of occurrence within the BSA (based on the presence of potentially suitable habitat and known occurrences within five miles of the BSA). Although suitable habitat is present and there are known occurrences within five miles these species have not been observed to date within the BSA during surveys to support this report or surveys conducted by the San Luis Obispo Land Conservancy within the BSA over the last approximately 10 years. Therefore, while they meet the criteria for the high or moderate potential of occurrence, based on multiple years of survey data these species are not expected to occur within proposed Project excavation area or the entirety of the BSA.

Impacts to federally and/or state listed plant species from Project related activities, should they occur, would be significant. The avoidance and minimization measures (AMM), presented below, would require pre-construction floristic surveys to document the presence/absence of all listed plant species and require avoidance of all listed plant species, with a minimum 25-foot no activity buffer. Therefore, with implementation of the proposed AMM, impacts to listed plant species would be less than significant.

Impacts to non-listed, CRPR species, would be significant if Project activities would result in impacts to more than 10% of the on-site population of a particular species; conversely, impacts to less than 10% of an on-site population of a CRPR species would not be considered significant. The avoidance and minimization measures (AMM), presented below, would require pre-construction floristic surveys to document the presence/absence of all CRPR species and require avoidance of all CRPR species, with a minimum 25-foot no activity buffer, where feasible. Where avoidance is not possible the plants will be salvaged (e.g., entire plant transplanted to a nursery pot and/or seed collection for propagation). If more than 10% of the on-site population of a CRPR species is impacted, compensatory mitigation will be required as detailed below under Section 6.7. Therefore, with implementation of the proposed AMM, impacts to CRPR species would be less than significant.

Construction activities associated with the Project could result in the direct loss of sensitive wildlife such as horned lizards. Direct impacts could result from potential mechanical crushing during construction, fugitive dust, and general disturbance due to increased human activity. Indirect impacts could include compaction of soils and the introduction of exotic plant species. Direct impacts to special-status birds, should they occur, include ground-disturbing activities associated with construction, increased noise levels from heavy equipment, increased human presence, and exposure to fugitive dust. Construction during the breeding season could result in the displacement of breeding birds and the abandonment of active nests. Indirect impacts include human disturbance, the spread of noxious weeds, and disruption of breeding or foraging activity. Ongoing weed management could also affect nesting.

Impacts to special-status wildlife from Project related activities, should they be present during construction, would be significant. The AMM presented below would require pre-construction wildlife surveys, biological monitoring, implementation of wildlife specific best management practices, and environmental awareness training would reduce impacts to special-status wildlife to less than significant levels.

To avoid and minimize impacts to both common and special-status plants and wildlife, the following AMM are proposed:



## 6.1 WILDLIFE PRE-CONSTRUCTION CLEARANCE SURVEYS AND BIOLOGICAL MONITORING

Prior to ground disturbance or vegetation clearing within the proposed Project site, a qualified biologist shall conduct pre-construction clearance surveys for wildlife (no more than 7 days prior to site disturbing activities) where suitable habitat is present and directly impacted by construction activities. Wildlife found within the proposed Project site or in areas potentially affected by the proposed Project would be relocated to the nearest suitable habitat that would not be affected by the proposed Project prior to the start of construction. Special-status species found within a proposed Project impact area shall be relocated by an authorized biologist to suitable habitat outside the impact area.

Phillips 66 shall retain a qualified lead biologist(s) to oversee compliance with the avoidance and minimization measures outlined in this document. The lead biologist shall be onsite during all initial ground disturbance activities and then occasionally throughout the construction phase. The lead biologist(s) shall have the right to halt all activities that are in violation of special-status species protection measures. Work shall proceed only after hazards to special-status species are removed, the species are allowed to leave, or are removed (if allowed) and the species is no longer at risk. The lead biologist(s) shall have a copy of all the compliance measures in their possession while work is being conducted onsite. Construction activity may also be monitored by biological monitors under the lead biologist's supervision to ensure compliance with mitigation measures.

## 6.2 ENVIRONMENTAL AWARENESS TRAINING

Phillips 66 shall submit proof to the County of San Luis Obispo that all proposed Project personnel have attended an environmental awareness and compliance training program. The training program shall present the environmental regulations and applicable permit conditions that the proposed Project team shall comply with. The training program shall include applicable measures established for the proposed Project to minimize impacts to water quality and avoid sensitive resources, habitats, and species. Subsequent training events shall be scheduled to support the training of new personnel. Dated sign-in sheets for attendees at these meetings shall be maintained and submitted to the County.

## 6.3 IMPLEMENT BEST MANAGEMENT PRACTICES

Prior to the issuance of any grading permits and/or notice to proceed, the Applicant shall submit grading plans and specifications to the County of San Luis Obispo, which indicate that the proposed Project shall implement the following Best Management Practices:

- Restrict non-essential equipment to the existing roadways and/or ruderal areas to avoid disturbance to native vegetation.
- All excavation, steep-walled holes or trenches shall be provided with one or more escape ramps constructed of earth dirt fill or wooden planks. Trenches would also be inspected for entrapped wildlife each morning prior to onset of construction activities. Before such holes or trenches are filled, they would be thoroughly inspected for entrapped wildlife. Any wildlife discovered would be allowed to escape before construction activities are allowed to resume or removed from the trench or hole by a qualified biologist holding the appropriate permits (if required).



- Minimize mechanical disturbance of soils to reduce impact of habitat manipulation on small mammals, reptiles, and amphibians.
- Removal or disturbance of vegetation shall be minimized to the greatest extent feasible.
- Implementation of a 15-miles-per-hour speed limit within all proposed Project areas.
- To avoid impacts to undisturbed habitat within the BSA, no vehicles will be allowed to travel outside of existing asphalt/dirt roads within the BSA; refer to Figure 2 (Appendix A) for a depiction of the existing roads.

## **6.4 NESTING BIRD SURVEYS AND AVOIDANCE MEASURES**

If initial site disturbance is scheduled to begin during the avian nesting season (February 15 through September 15; January 1 through August 15 for raptors), breeding/nesting bird surveys shall be conducted by a qualified biologist no more than 3 days prior to the start of site disturbance. Surveys shall be conducted within 500 feet of all proposed Project activities.

If endangered or threatened species are observed, consultation with U.S. Fish and Wildlife Service and/or California Department of Fish and Wildlife is required. If breeding birds with active nests are found prior to or during construction, a qualified biological monitor shall establish a 300-foot buffer around the nest, and no activities would be allowed within the buffer(s) until the young have fledged from the nest or the nest fails; initial buffers for nesting raptors shall be 500 feet. The prescribed buffers for common species may be adjusted by the qualified biologist based on existing conditions around the nest, planned construction activities, tolerance of the species, and other pertinent factors; for example, buffers for common passerines, often found to be habituated to human activity, may be adjusted down to 25 - 50 feet depending on the disturbance tolerance of each specific species. Buffer adjustments for listed and/or other special-status species shall be done in coordination with the United States Fish and Wildlife Service and California Department of Fish and Wildlife as applicable. The qualified biologist shall conduct regular monitoring of the nest to determine success or failure and to ensure that proposed Project activities are not conducted within the buffer(s) until the nesting cycle is complete or the nest fails.

## **6.5 SPECIAL-STATUS PLANT SURVEYS AND AVOIDANCE MEASURES**

Prior to the start of proposed Project activities, a qualified biologist/botanist shall conduct focused floristic surveys within the entirety of the BSA in the spring of 2020. A minimum of three survey events should be conducted and timed to account for the variance in blooming periods for special-status plants known or with the potential to occur in the BSA. Upon completion of the surveys a detailed survey report shall be prepared and submitted to the County of San Luis Obispo, as an addendum to this BRTR, for review and approval. This report shall include, at a minimum, a description of survey methodologies, a compendium of all species observed, and detailed GIS based maps showing locations of all mapped species.

All occurrences of special-status plants will be mapped and occurrences within 100 feet of proposed Project activities flagged in the field. A minimum of a 25-foot buffer shall be placed around all known locations of special-status species within 100-ft of Project activities to avoid potential impacts to seed banks and microhabitats that support the species. These buffers shall be flagged/fenced and avoided during construction. All occurrences of Nipomo Mesa lupine, or any other federal or state listed species, will be avoided. Occurrences of CRPR species will be avoided to the extent possible. If CRPR species (e.g., sand almond) cannot be avoided the individual plants shall be salvaged (e.g., plant placed in large nursery pot and/or seed collection) for use in habitat restoration activities (refer to Section 6.6 below)



once Project related construction activities are complete. Details of the proposed salvage activity will be presented in the Habitat Restoration Plan (refer to section 6.6 below). All plants directly salvaged or propagated from collected seed shall be monitored and must survive in good health or demonstrate stable or expanding populations, for a minimum of three years, post planting, for salvage to be considered successful. Details of the salvage methodology will be presented in the Habitat Restoration Plan (HRP) detailed under Section 6.6 below.

## **6.6 VEGETATION REMOVAL AND REPLACEMENT**

Construction activities shall be done in such a manner as to minimize the removal of native vegetation. If native vegetation removal cannot be avoided, and the removal is approved by the County of San Luis Obispo, the impacted plant communities shall be replaced at a mitigation ratio of 1:1. Sensitive communities (e.g., silver dune lupine – mock heather scrub) shall be replaced at a mitigation ration of 2:1. The compensation for the loss of habitats may be achieved either by a) on-site habitat creation or enhancement of impacted communities with similar species compositions to those present prior to construction, b) off-site creation or enhancement of dune scrub communities, or c) participation in an established mitigation bank program.

Prior to the removal of native vegetation, if on- or off-site mitigation is required, a HRP shall be prepared that will guide all restoration and monitoring activities. This plan shall include, at a minimum, the following:

- Proposed species list for creation/enhancement;
- Planting/seeding methodology;
- Details on methodologies for salvage of CRPR species;
- Irrigation plan;
- Weeding schedule;
- Success criteria;
- Monitoring methodology and schedule;
- Reporting requirements; and
- Contingency plan.

## **6.7 COMPENSATION FOR IMPACTS TO CRPR SPECIES**

If Project-related impacts result in the loss of more than 10% of the on-site (BSA) population of any CRPR plant species, compensatory mitigation will be required. Compensation will be required for all impacts that exceed the 10% threshold (e.g. impacts to 15% of a population will only require compensation for 5% or the amount of impacts that exceed the 10% threshold). Compensation for permanent impacts to CRPR species may be achieved either by a) on-site habitat creation or enhancement of impacted communities with similar species compositions to those present prior to construction, b) off-site creation or enhancement of dune scrub communities, or c) participation in an established mitigation bank program.at a 1:1 mitigation ratio (one acre preserved for each acre impacted).



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Compensation for temporary impacts will be at a 0.5:1 ratio. Enhanced/restored habitat for an impacted plant species shall be of equal or greater habitat quality to the impacted areas in terms of soil features, extent of disturbance, and vegetation structure.

## **7.0 REFERENCES**

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**BIOLOGICAL RESOURCES TECHNICAL REPORT  
NORTHERN INACTIVE WASTE SITE REMEDIATION PROJECT  
PHILLIPS 66 SANTA MARIA REFINERY**

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**BIOLOGICAL RESOURCES TECHNICAL REPORT  
NORTHERN INACTIVE WASTE SITE REMEDIATION PROJECT  
PHILLIPS 66 SANTA MARIA REFINERY**

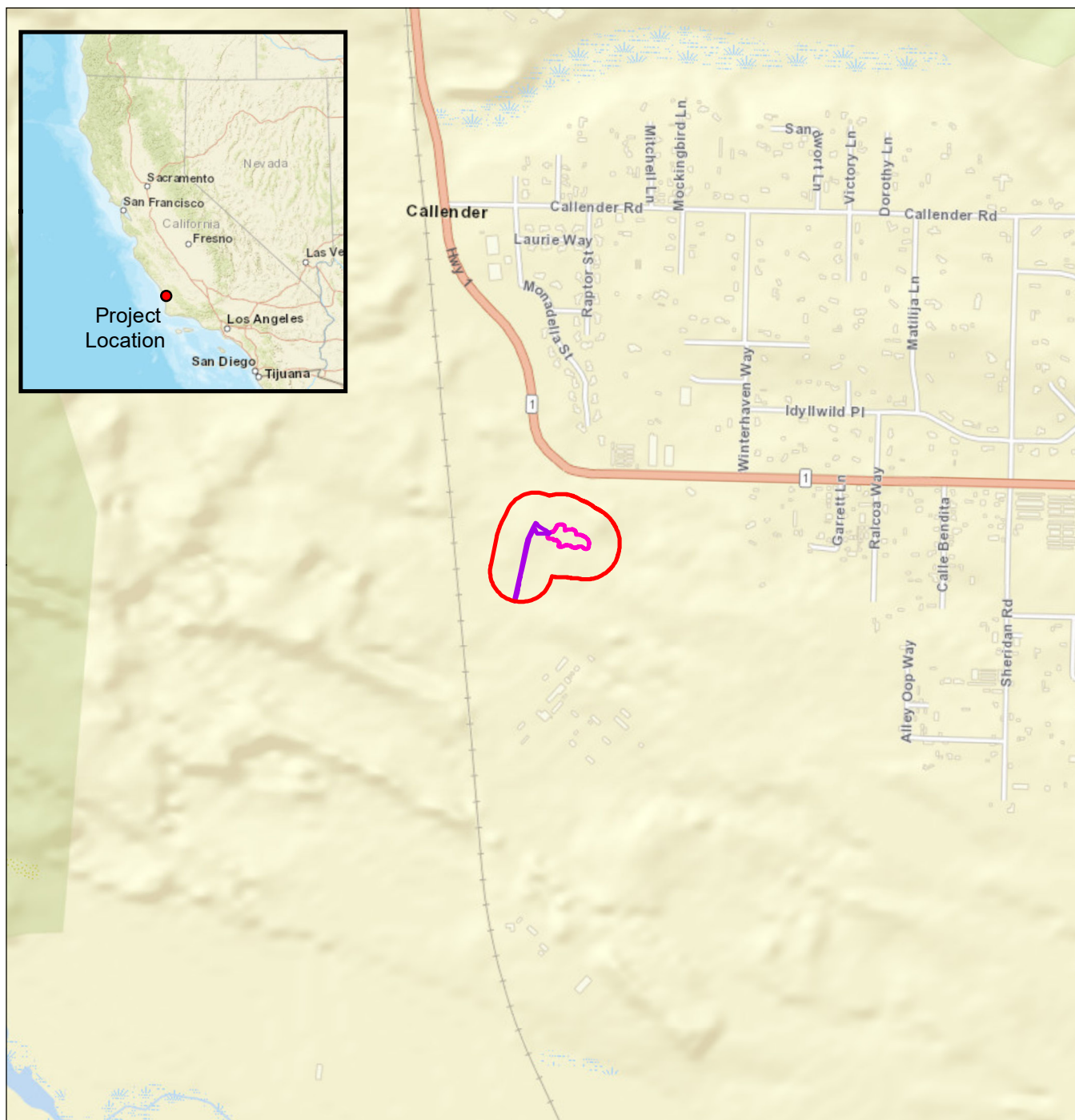
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## Appendix A FIGURES





Biological Survey Area

#### Project Components

Asphalt/ Dirt Road

Excavation Perimeter/  
Landfill Footprint

#### Notes

1. Coordinate System: NAD 1983 2011 StatePlane California V FIPS 0405 Ft US
2. Data Sources: Stantec 2019
3. Background: Sources: Esri, HERE, Garmin, USGS, Intermap, INCREMENT P, NRCan, Esri Japan, METI, Esri China (Hong Kong), Esri Korea, Esri (Thailand), NGCC, (c) OpenStreetMap contributors, and the GIS User Community

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(At original document size of 8.5x11)  
1:18,179



Project Location  
Arroyo Grande, CA

Prepared by DL on 2020-01-06  
TR by RB on 2020-01-06  
IR Review by JV on 2020-01-06

Client/Project 185804380  
Northern Inactive Waste Site Remediation Project  
Phillips 66 Santa Maria Refinery

Figure No.

1

Title

**Project Location Map**



  Biological Survey Area

#### Project Components

  Asphalt/ Dirt Road

  Excavation Perimeter/ Landfill Footprint

#### Vegetation Communities & Land Cover Types

  *Lupinus chamissonis*-*Ericameria ericoides* Shrubland Alliance, *Ericameria ericoides* Association

  Disturbed *Lupinus chamissonis*-*Ericameria ericoides* Shrubland Alliance, *Ericameria ericoides* Association

  Disturbed/ Developed

#### Notes

1. Coordinate System: NAD 1983 2011 StatePlane California V FIPS 0405 Ft US

2. Data Sources: Stantec 2019

3. Background: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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(At original document size of 8.5x11)  
1:2,410



Project Location Prepared by DL on 2020-01-06  
Arroyo Grande, CA TR by RB on 2020-01-06  
IR Review by JV on 2020-01-06

Client/Project 185804380

Northern Inactive Waste Site Remediation Project  
Phillips 66 Santa Maria Refinery

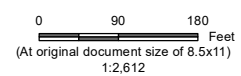
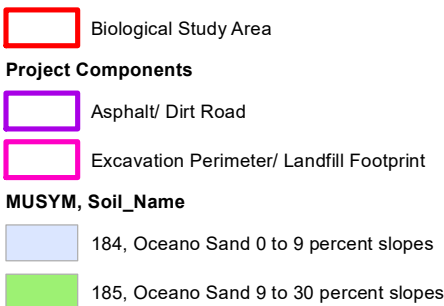
Figure No.

**2**

Title

**Vegetation Communities & Land  
Cover Types**





Project Location Prepared by DL on 2020-01-06  
Arroyo Grande, CA TR by RB on 2020-01-06  
IR Review by JV on 2020-01-06

Client/Project 185804380  
Northern Inactive Waste Site Remediation Project  
Phillips 66 Santa Maria Refinery

Figure No.

**3**

Title

**Historical Soils**

**Notes**

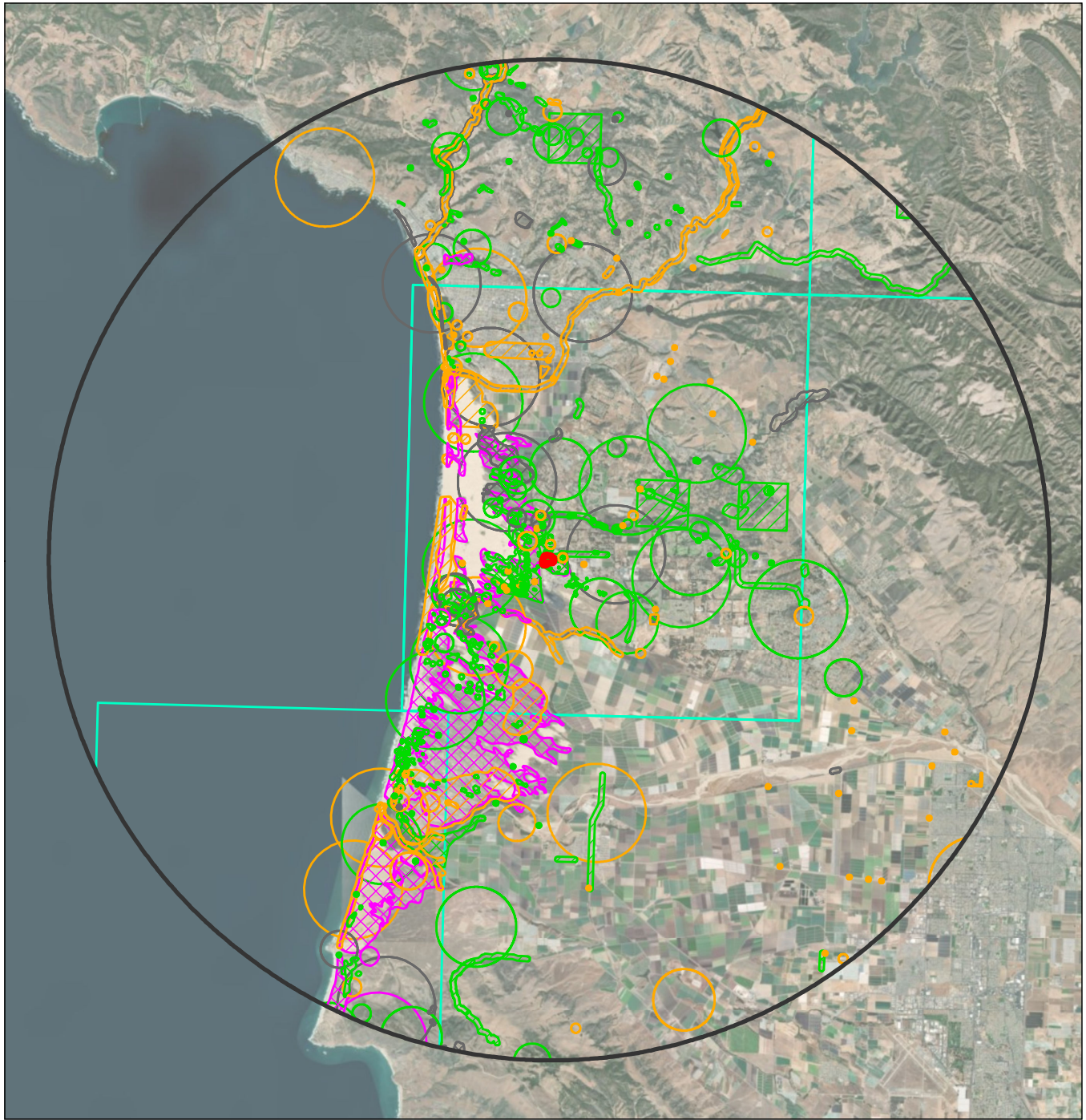
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2. Data Sources: Stantec 2019, NRCS 2019
3. Background: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
4. Refer to section 4.5 in Biological Resources Technical Report.


















V:\185804380\05 report deliv\dwgs design\gis figures\WXDs\Figure3 SoilsMap\_09192019.mxd Revised: 2020-03-11 By: dalaw

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V:\185804380\05\_report\_delivdwgs\_design\figs\10MileCNDDDB\_Map\_09192019V2.mxd Revised: 2020-01-06 By: dalaw



	Biological Survey Area		Animal (80m)		Multiple (80m)
	10 Mile Project Radius		Animal (specific)		Multiple (specific)
	Plant (80m)		Animal (non-specific)		Multiple (non-specific)
	Plant (specific)		Animal (circular)		Multiple (circular)
	Plant (non-specific)		Terrestrial Comm. (specific)		Sensitive EO's (Commercial only)
	Plant (circular)		Terrestrial Comm. (circular)		

0 1 2 Miles  
(At original document size of 8.5x11)  
1:197,154



Project Location  
Arroyo Grande, CA

Prepared by DL on 2020-01-06  
TR by RB on 2020-01-06  
IR Review by JV on 2020-01-06

Client/Project  
Northern Inactive Waste Site Remediation Project  
Phillips 66 Santa Maria Refinery

Figure No.

4a

Title  
10 Mile CNDDDB Search

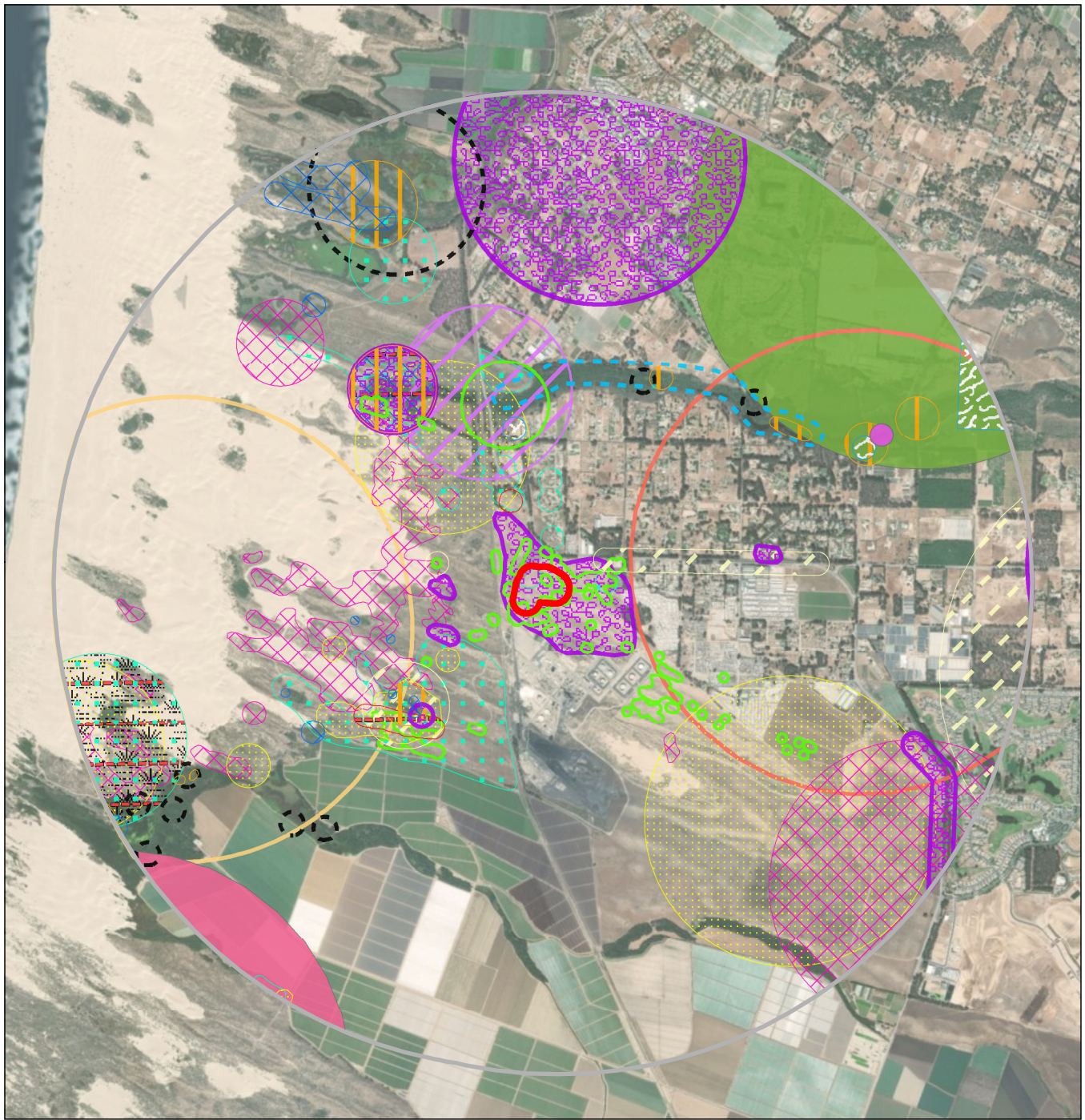
#### Notes






















1. Coordinate System: NAD 1983 2011 StatePlane California V FIPS 0405 Ft US
2. Data Sources: Stantec 2019, CNDDDB 2019.
3. Background: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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	Biological Study Area		<i>Chenopodium littoreum</i>		<i>Monardella sinuata</i> ssp. <i>sinuata</i>
	2 Mile Project Buffer		<i>Cirsium scariosum</i> var. <i>loncholepis</i>		<i>Monardella undulata</i> ssp. <i>crispa</i>
<b>Plants</b>					
	<i>Agrostis hooveri</i>		<i>Cladium californicum</i>		<i>Monardella undulata</i> ssp. <i>undulata</i>
	<i>Arctostaphylos pilosula</i>		<i>Delphinium parryi</i> ssp. <i>blochmaniae</i>		<i>Nasturtium gambelii</i>
	<i>Arctostaphylos rufis</i>		<i>Erigeron blochmaniae</i>		<i>Nemacaulis denudata</i> var. <i>denudata</i>
	<i>Arenaria paludicola</i>		<i>Horkelia cuneata</i> var. <i>puberula</i>		<i>Orobancha parishii</i> ssp. <i>brachyloba</i>
	<i>Ceanothus impressus</i> var. <i>nipomensis</i>		<i>Horkelia cuneata</i> var. <i>sericea</i>		
			<i>Lupinus nipomensis</i>		

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Project Location Prepared by DL on 2019-09-19  
Arroyo Grande, CA TR by RB on 2019-09-19  
IR Review by JV on 2019-09-19

Client/Project 185804380

Northern Inactive Waste Site Remediation Project  
Phillips 66 Santa Maria Refinery

Figure No.

4b

Title

2 Mile CNDDB Search - Plants

#### Notes

1. Coordinate System: NAD 1983 2011 StatePlane California V FIPS 0405 Ft US

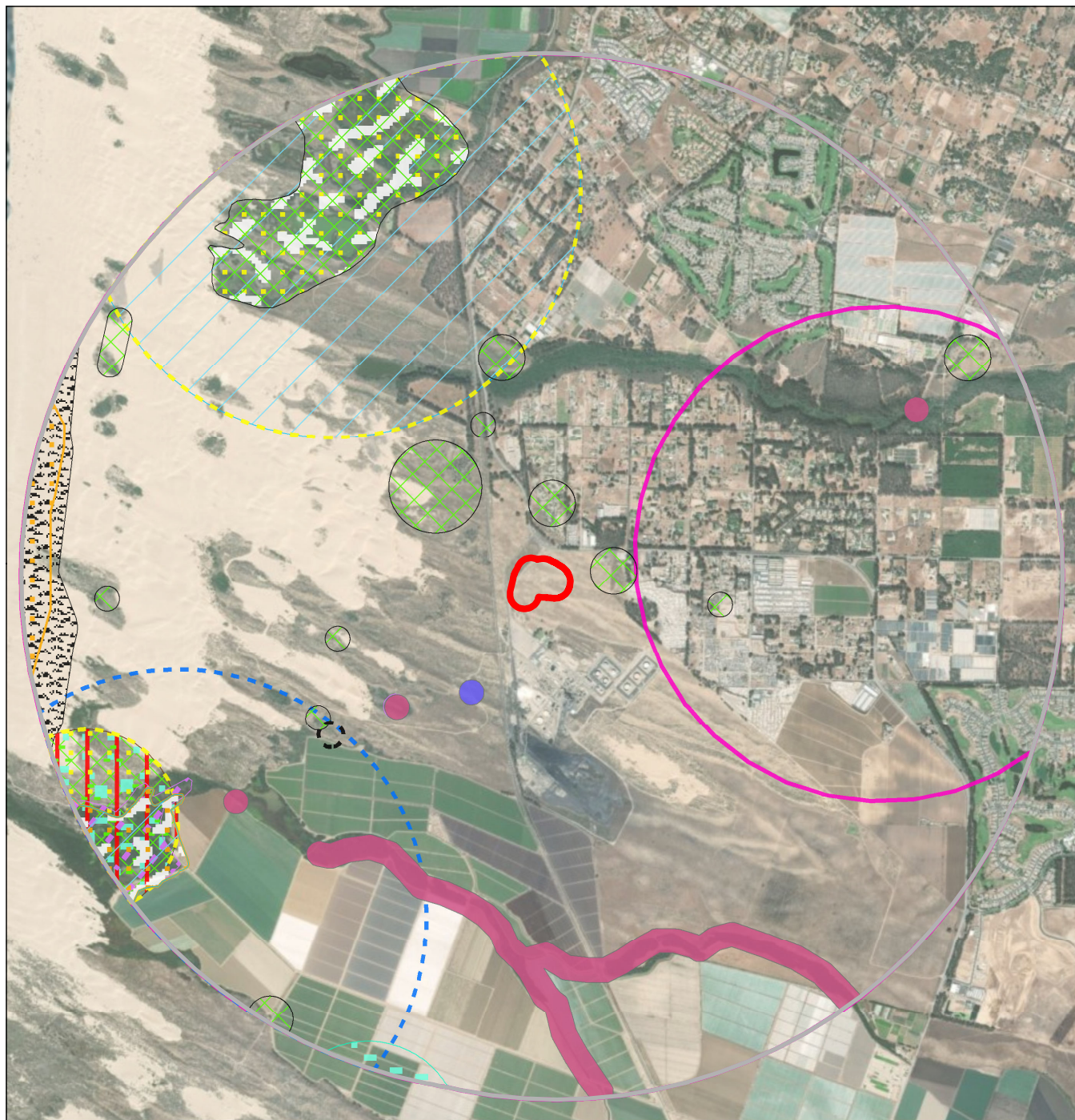
2. Data Sources: Stantec 2019, CNDDB 2019.



















3. Background: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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V:\1858\active\185804380\05\_report\_delivd\figs\_desktop\figs\Map\_09192019.mxd Map\_09192019.mxd Revised: 2020-01-06 By: dalaw



	Biological Study Area		Charadrius alexandrinus nivosus		Phrynosoma blainvillii
	2 Mile Project Buffer		Chlosyne leanira elegans		Plebejus icarioides moroensis
<b>Wildlife</b>					
	Ablautus schlingeri		Cicindela hirticollis gravida		Rana draytonii
	Anniella pulchra		Danaus plexippus pop. 1		Sternula antillarum browni
	Areniscythris brachypterus		Emys marmorata		Taxidea taxus
	Bombus caliginosus		Laterallus jamaicensis coturniculus		
			Lichnanthe albipilosa		

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1:39,080



Project Location  
Arroyo Grande, CA

Prepared by DL on 2019-09-19  
TR by RB on 2019-09-19  
IR Review by JV on 2019-09-19

Client/Project 185804380

Northern Inactive Waste Site Remediation Project  
Phillips 66 Santa Maria Refinery

Figure No.

4c

Title

2 Mile CNDDDB Search - Wildlife

#### Notes

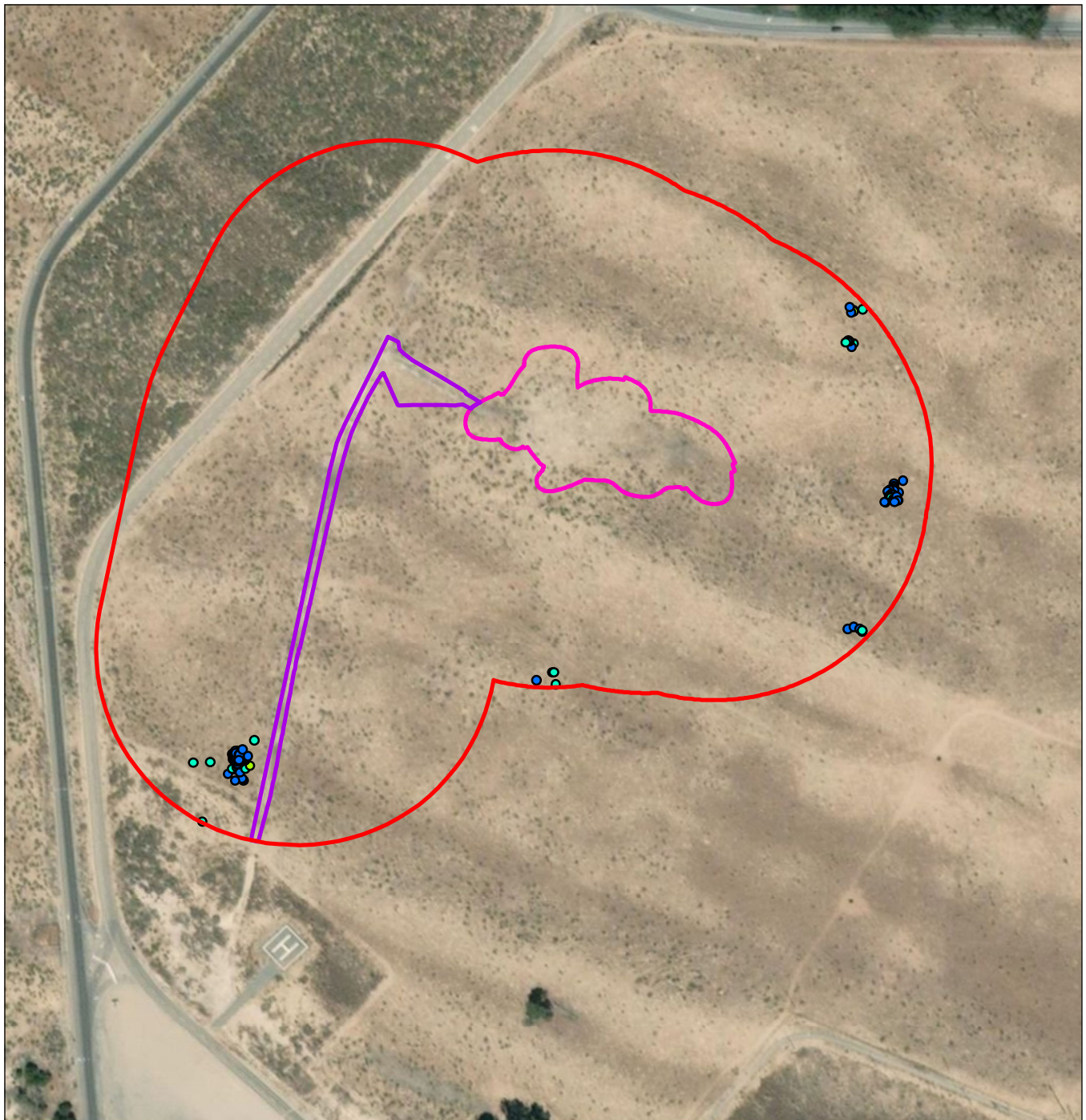
1. Coordinate System: NAD 1983 2011 StatePlane California V FIPS 0405 Ft US

2. Data Sources: Stantec 2019, CNDDDB 2019.

3. Background: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

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**Biological Survey Area**

### Project Components

**Asphalt/ Dirt Road**

**Excavation Perimeter/ Landfill Footprint**

### Nipomo Lupine (\*\* LC of SLOC)

- Dead
- In Fruit
- Missing

0 100 200 Feet  
(At original document size of 8.5x11)  
1:2,825



Project Location Prepared by DL on 2020-01-06  
Arroyo Grande, CA TR by RB on 2020-01-06  
IR Review by JV on 2020-01-06

Client/Project 185804380

Northern Inactive Waste Site Remediation Project  
Phillips 66 Santa Maria Refinery

Figure No.

**5**

Title

**Nipomo Mesa Lupine Data**

### Notes

1. Coordinate System: NAD 1983 2011 StatePlane California V FIPS 0405 Ft US

\*\*2. Data Sources: \*\* The Land Conservancy of San Luis Obispo County 2017, Stantec 2019, all other data from client.

3. Background: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Disclaimer: This document has been prepared based on information provided by others as cited in the Notes section. Stantec has not verified the accuracy and/or completeness of this information and shall not be responsible for any errors or omissions which may be incorporated herein as a result. Stantec assumes no responsibility for data supplied in electronic format, and the recipient accepts full responsibility for verifying the accuracy and completeness of the data.



## BIOLOGICAL RESOURCES TECHNICAL REPORT

Appendix B Photographic Log  
March 10, 2020

### Appendix B PHOTOGRAPHIC LOG



**STANTEC CONSULTING SERVICES INC.  
PHOTOGRAPHIC LOG**

**Client:** P66

**Job Number:** 185804380

**Site Name:** NIWS

**Photographer:** J. Varonin

**Photo 1: July 12, 2019**



View looking northeast at the Project area.

**Photo 2: September 12, 2019**



View looking north at the Project area from the southern portion of the BSA.

**STANTEC CONSULTING SERVICES INC.  
PHOTOGRAPHIC LOG**

**Client:** P66

**Job Number:** 185804380

**Site Name:** NIWS

**Photographer:** J. Varonin

**Photo 3: September 12, 2019**



View looking east at the Project area from the center of the BSA.

**Photo 4: September 12, 2019**



View looking west at the Project area from the center of the BSA.



**STANTEC CONSULTING SERVICES INC.  
PHOTOGRAPHIC LOG**

**Client:** P66

**Job Number:** 185804380

**Site Name:** NIWS

**Photographer:** J. Varonin

**Photo 5: September 12, 2019**



View looking west at the existing access road in the northern portion of the BSA.

**Photo 6: September 12, 2019**



View looking east at the access road to the Project area from Willow Road.

## **Appendix C DECLARATIONS OF BIOLOGIST QUALIFICATIONS**



## APPENDIX E - DECLARATIONS OF BIOLOGIST QUALIFICATIONS

---

### General Biological Report Declaration

PROJECT NAME/NUMBER: P66 Northern Inactive Waste Site Remediation Proejct

NAME OF BIOLOGIST: Jared Varonin, Principal Biologist FIRM: Stantec Consulting Services Inc.

I am the primary/lead field biologist for the above referenced project. I have the following minimum qualifications to comply with the County of San Luis Obispo's biological reporting requirements for this type of biological report (General):

- I have a bachelor's degree in (circle one or more) biology, zoology, wildlife biology, natural resources, ecology, conservation biology, environmental biology, or related field (specify) \_\_\_\_\_; from (specify school & year completed) \_\_\_\_\_  
California Polytechnic State University San Luis Obispo, San Luis Obispo, California, 1999
- I have previously conducted independent field work and reporting, and demonstrated the following:
  - Knowledge and experience in identification of habitats and vegetation associations found in San Luis Obispo County;
  - General knowledge of local plant and wildlife species;
  - General knowledge of sensitive habitats and plant and wildlife species;
  - Ability and experience in identifying potential impacts to plants, animals, and habitats;
  - Ability and experience in recommending mitigation measures to minimize impacts to plants, animals, and habitats;
  - Experience in monitoring for compliance with biological mitigation measures; and
  - Ability and experience in writing complete, well-written technical reports as per the County Guidelines for Preparation of Technical Reports.

**Check one:**

- ☐ Attached is a representative copy (electronic) of a recent report I authored.
- ☒ I previously submitted a representative copy of a report I authored.

**With my signature I confirm that I meet all of the above qualifications and that I was a primary author of this report and provided field oversight and/or conducted a substantial portion of the field survey work.**

\_\_\_\_\_  
Signature of Biologist

\_\_\_\_\_  
30 March 2020

\_\_\_\_\_  
Date

**BIOLOGICAL RESOURCES TECHNICAL REPORT**

Appendix D CNPS Rare Plant Inventory Database Search Results  
March 10, 2020

**Appendix D CNPS RARE PLANT INVENTORY DATABASE  
SEARCH RESULTS**



Scientific Name	Common	CRPR	GRank	SRank	CESA	FESA	Blooming Period	Habitat	Counties	Quads	Notes	Element Code	Date Added	Last Update
Abronia maritima	red sand-verbena	4.2	G4	S3?	None	None	Feb-Nov	Coastal dunes	ANA, LAX, ORA, SBA, SCM, SCT, SCZ, SDG, SLO, SMI, SNI, VEN	Imperial Beach (3211751), Point Loma (3211762), La Jolla (3211772), Del Mar (3211782), San Clemente Island North (3211885), Encinitas (3311713), Oceanside (3311724), Las Pulgas Canyon (3311734), Newport Beach (3311768), Santa Catalina North (3311844), Venice (3311884), San Nicolas Island (3311924), Anacapa Island (3311983), Santa Cruz Island D (3311984), Santa Cruz Island C (3311985), Santa Cruz Island A (3311987), San Miguel Island East (3312083), San Miguel Island West (3312084), Triunfo Pass (3411818), Point Mugu (3411911), Ventura (3411933), Dos Pueblos Canyon (3411948), Point Conception (3412044), Point Arguello (3412056), Lompoc (3412064), Surf (3412065), Casmalia (3412075), Point Sal (3412086), Oceano (3512015), Morro Bay South (3512037), Morro Bay North (3512047), Cayucos (3512048)	Nearly extirpated in southern CA; more common to north? Field surveys needed. Hybridizes with A. latifolia and A. umbellata. See Botany of California 2:4 (1880) for original description.	PDNYC010E0	1/1/1994	2/8/2019
Aphanisma blitoides	aphanisma	1B.2	G3G4	S2	None	None	Feb-Jun	Coastal bluff scrub, Coastal dunes, Coastal scrub	ANA, LAX, ORA, SBA, SBR, SCM, SCT, SCZ, SDG, SNI, SRO, VEN	Imperial Beach (3211751), National City (3211761), Point Loma (3211762), La Jolla (3211772), Del Mar (3211782), San Clemente Island South (3211873), San Clemente Island Central (3211874), San Clemente Island North (3211885), San Onofre Bluff (3311735), Dana Point (3311746), Laguna Beach (3311757), Newport Beach (3311768), Santa Catalina East (3311833), Santa Catalina South (3311834), Santa Catalina North (3311844), Santa Catalina West (3311845), Santa Barbara Island (3311848), San Pedro (3311863), Redondo Beach (3311874), San Nicolas Island (3311924), Anacapa Island (3311983), Santa Cruz Island A (3311987), Santa Rosa Island South (3312071), Ventura (3411933), Casmalia (3412075), Point Sal (3412086)	In steep decline on mainland, and also declining on islands. May occur on ANA Island. Threatened by urbanization, recreational development, foot traffic, and non-native plants. Threatened by feral herbivores on SCT, SCZ, and SRO Islands.	PDCHE02010	1/1/1980	7/23/2015
Astragalus nuttallii var. nuttallii	ocean bluff milk-vetch	4.2	G4T4	S4	None	None	Jan-Nov	Coastal bluff scrub, Coastal dunes	ALA, MNT, MRN, SBA, SFO, SLO, SMT	Surf (3412065), Casmalia (3412075), Point Sal (3412086), Oceano (3512015), Morro Bay South (3512037), Cambria (3512151), Pico Creek (3512152), San Simeon (3512162), Piedras Blancas (3512163), Cape San Martin (3512184), Lopez Point (3612115), Big Sur (3612137), Soledad (3612143), Soberanes Point (3612148), Monterey (3612158), Marina (3612167), Pigeon Point (3712224), San Gregorio (3712234), Montara Mountain (3712254), San Francisco South (3712264), San Francisco North (3712274), Point Bonita (3712275)	Possibly threatened by foot traffic and road maintenance. See Leaflets of Western Botany 5(6):107 (1948) for revised nomenclature.	PDFAB0F641	1/1/2001	8/17/2016



Scientific Name	Common	CRPR	GRank	SRank	CESA	FESA	Blooming Period	Habitat	Counties	Quads	Notes	Element Code	Date Added	Last Update
Chenopodium littoreum	coastal goosefoot	1B.2	G1	S1	None	None	Apr-Aug	Coastal dunes	LAX, SBA, SLO	Venice (3311884), Surf (3412065), Casmalia (3412075), Oceano (3512015), Morro Bay South (3512037)	Possibly threatened by recreational activities, vehicles, and non-native plants. Previously identified as C. carnosulum var. patagonicum. See Madroño 57(1):64-72 (2010) for original description.	PDCHE091Z0	6/1/2011	1/10/2013
Cirsium occidentale var. compactum	compact cobwebby thistle	1B.2	3G4T2	S2	None	None	Apr-Jun	Chaparral, Coastal dunes, Coastal prairie, Coastal scrub	LAX, MNT, SBA, SFO, SLO	Santa Catalina East (3311833), Santa Rosa Island South (3312071), Santa Rosa Island North (3312081), Santa Rosa Island West (3312082), San Miguel Island East (3312083), San Miguel Island West (3312084), Point Sal (3412086), Cayucos (3512048), Cambria (3512151), Pico Creek (3512152), San Simeon (3512162), Piedras Blancas (3512163), Pfeiffer Point (3612127), Big Sur (3612137), Point Sur (3612138), San Francisco South (3712264)	Threatened by grazing and insect predation, and potentially by road construction and development. Some inland plants weakly separated from var. occidentale. Compact, low-growing plants from MNT Co. (344C) are probably not var. compactum.	PDAST2E1Z1	1/1/1974	4/18/2019
Cirsium rathophilum	Surf thistle	1B.2	G1	S1	CT	None	Apr-Jun	Coastal bluff scrub, Coastal dunes	SBA, SLO	Point Conception (3412044), Tranquillon Mtn. (3412055), Point Arguello (3412056), Surf (3412065), Casmalia (3412075), Guadalupe (3412085), Point Sal (3412086), Oceano (3512015), Pismo Beach (3512026), Morro Bay South (3512037)	Threatened by vehicles, foot traffic, and non-native plants. See Botanical Gazette 39:45 (1905) for original description.	PDAST2E2J0	1/1/1974	3/15/2010
Cirsium scariosum var. loncholepis	La Graciosa thistle	1B.1	G5T1	S1	CT	FE	May-Aug	e woodland, Coastal dunes, Coastal scrub, Marshes and	MNT, SBA, SLO	Surf (3412065), Sisquoc (3412073), Orcutt (3412074), Guadalupe (3412085), Point Sal (3412086), Oceano (3512015), Pismo Beach (3512026), San Luis Obispo (3512036)	Threatened by development, vehicles, groundwater pumping, and non-native plants. Possibly threatened by grazing.	PDAST2E1N0	1/1/1974	4/23/2019
Corethrogyne leucophylla	branching beach aster	3.2	G3Q	S3	None	None	May,Jul,Aug,Sep,	cone coniferous forest, Coastal dunes	MNT, SCR, SLO, SMT	Oceano (3512015), Piedras Blancas (3512163), Burro Mountain (3512173), Lopez Point (3612115), Partington Ridge (3612126), Big Sur (3612137), Point Sur (3612138), Soberanes Point (3612148), Monterey (3612158), Marina (3612167), Ano Nuevo (3712213)	Move to CRPR 4? Potentially threatened by development. Needs taxonomic study; a synonym of Lessingia filaginifolia var. filaginifolia in TJM (1993).	PDAST2M030	1/1/1974	7/27/2017
Delphinium parryi ssp. blochmaniae	dune larkspur	1B.2	G4T2	S2	None	None	Apr-Jun	Chaparral (maritime), Coastal dunes	SBA, SLO, VEN	Thousand Oaks (3411827), Camarillo (3411921), Los Alamos (3412063), Lompoc (3412064), Surf (3412065), Orcutt (3412074), Casmalia (3412075), Santa Maria (3412084), Point Sal (3412086), Oceano (3512015), Arroyo Grande NE (3512025), Pismo Beach (3512026), Lopez Mtn. (3512035), Morro Bay South (3512037), Santa Margarita (3512045), Pico Creek (3512152), Pebblestone Shut-in (3512161), San Simeon (3512162)	Field work needed. Threatened by development.	PDRAN0B1B1	1/1/1988	3/15/2010

Scientific Name	Common	CRPR	GRank	SRank	CESA	FESA	Blooming Period	Habitat	Counties	Quads	Notes	Element Code	Date Added	Last Update
Dithyrea maritima	beach spectaclepod	1B.1	G1	S1	CT	None	Mar-May	Coastal dunes, Coastal scrub (sandy)	LAX, SBA, SCT, SLO, SMI, SNI, VEN	(3311834), Santa Catalina North (3311844), Santa Catalina West (3311845), Redondo Beach (3311874), Venice (3311884), San Nicolas Island (3311924), San Miguel Island East (3312083), San Miguel Island West (3312084), Beverly Hills (3411814), Topanga (3411815), Surf (3412065), Casmalia (3412075), Guadalupe (3412085), Point Sal (3412086), Oceano (3512015), Pismo Beach (3512026), Morro Bay South (3512037)	Extirpated from half of its historical range. Need historical quads for SCT Isl. Last seen in LAX Co. in 1932. Threatened by trampling, vehicles, and non-native plants. See Erythea 2:179 (1894) for original description.	PDBRA10020	1/1/1980	3/15/2010
Erigeron blochmaniae	Blochman's leafy daisy	1B.2	G2	S2	None	None	Jun-Aug	Coastal dunes, Coastal scrub	SBA, SLO	Point Conception (3412044), Tranquillon Mtn. (3412055), Point Arguello (3412056), Surf (3412065), Casmalia (3412075), Santa Maria (3412084), Guadalupe (3412085), Point Sal (3412086), Oceano (3512015), Pismo Beach (3512026), Morro Bay South (3512037), Morro Bay North (3512047)	Threatened by development, non-native plants, and vehicles. See Pittonia 3:27-28 (1896) for original description, and Phytologia 72(3):157-208 (1992) for taxonomic treatment.	PDAST3M5J0	1/1/1974	11/15/2010
Erysimum suffrutescens	suffrutescent wallflower	4.2	G3	S3	None	None	Jan-Jul(Aug)	Coastal bluff scrub, Chaparral (maritime) , Coastal dunes, Coastal scrub	LAX, SBA, SLO, VEN	Venice (3311884), Oceano (3512015), Morro Bay South (3512037)	Threatened by coastal development, vehicles, and non-native plants. Includes E. suffrutescens var. grandifolium. Hybridizes locally with E. capitatum.	PDBRA160D2	1/1/1980	11/29/2010
Horkelia cuneata var. sericea	Kellogg's horkelia	1B.1	G4T1?	S1?	None	None	Apr-Sep	Closed- cone coniferous forest, Chaparral (maritime) , Coastal dunes, Coastal scrub	ALA, MNT, MRN, SBA, SCR, SFO, SLO, SMT	Point Conception (3412044), Tranquillon Mtn. (3412055), Point Arguello (3412056), Lompoc (3412064), Surf (3412065), Orcutt (3412074), Casmalia (3412075), Guadalupe (3412085), Point Sal (3412086), Nipomo (3512014), Oceano (3512015), Morro Bay South (3512037), Santa Margarita (3512045), San Miguel (3512076), Cambria (3512151), Spreckels (3612156), Seaside (3612157), Monterey (3612158), Salinas (3612166), Marina (3612167), Prunedale (3612176), Watsonville West (3612187), Soquel (3612188), Felton (3712211), Davenport (3712212), Ano Nuevo (3712213), Half Moon Bay (3712244), Montara Mountain (3712254), San Francisco South (3712264), Oakland East (3712272), Oakland West (3712273), San Francisco North (3712274), Point Bonita (3712275), Drakes Bay (3812218)	Threatened by coastal development. Historical occurrences need field surveys. Occurrence from the Crocker Hills probably last remaining location in S.F. Bay; remaining plants less distinct from ssp. cuneata than those formerly occurring near San Francisco. See Novon 17(3):315-325 (2007) for revised nomenclature.	PDROS0W043	1/1/1988	5/30/2012
Lupinus nipomensis	Nipomo Mesa lupine	1B.1	G1	S1	CE	FE	Dec-May	Coastal dunes	SLO	Oceano (3512015)	Threatened by development, vehicles, and non-native plants. See Leaflets of Western Botany 2(10):186-188 (1939) for original description.	PDFAB2B550	1/1/1974	5/7/2019

Scientific Name	Common	CRPR	GRank	SRank	CESA	FESA	Blooming Period	Habitat	Counties	Quads	Notes	Element Code	Date Added	Last Update
Malacothrix incana	dunedelion	4.3	G3G4	S3S4	None	None	(Jan)Apr-Oct	Coastal dunes, Coastal scrub	SBA, SCM, SCZ, SDG, SLO, SMI, SNI, SRO, VEN	San Nicolas Island (3311924), San Miguel Island East (3312083), San Miguel Island West (3312084), Surf (3412065), Casmalia (3412075), Point Sal (3412086), Oceano (3512015)	Last collected on SCZ Isl in the 1880's. See American Midland Naturalist 58(2):506 (1957) for taxonomic treatment.	PDAST66070	1/1/1974	3/15/2010
Monardella sinuata ssp. sinuata	southern curly-leaved monardella	1B.2	G3T2	S2	None	None	Apr-Sep	Chaparral, Cismontane woodland, Coastal dunes, Coastal scrub (openings)	SBA, SLO, VEN	Newbury Park (3411828), Santa Paula (3411931), Goleta (3411947), Zaca Creek (3412062), Los Alamos (3412063), Lompoc (3412064), Surf (3412065), Foxen Canyon (3412072), Orcutt (3412074), Casmalia (3412075), Oceano (3512015), Arroyo Grande NE (3512025), Pismo Beach (3512026), Morro Bay South (3512037), San Simeon (3512162)	Several historical occurrences are presumed extirpated by urbanization and non-native plants. Seriously threatened by veldt grass (Ehrharta calycina) invasion. Also threatened by development, habitat loss, habitat fragmentation, vehicles, foot traffic, and recreational activities. Possibly threatened by climate shifts. Previously included in M. undulata. Similar to M. breweri and M. douglasii. See Novon 19(3):315-345 (2009) for original description.	PDLAM18161	12/31/2013	12/17/2014
Monardella undulata ssp. crispa	crisp monardella	1B.2	G3T2	S2	None	None	Apr-Aug(Dec)	Coastal dunes, Coastal scrub	SBA, SLO	Tranquillon Mtn. (3412055), Point Arguello (3412056), Surf (3412065), Casmalia (3412075), Guadalupe (3412085), Point Sal (3412086), Oceano (3512015)	Threatened by vehicles. Hybridizes with M. frutescens.	PDLAM18070	1/1/1974	4/27/2012
Monardella undulata ssp. undulata	San Luis Obispo monardella	1B.2	G2	S2	None	None	May-Sep	Coastal dunes, Coastal scrub (sandy)	SBA, SLO	Tranquillon Mtn. (3412055), Point Arguello (3412056), Surf (3412065), Orcutt (3412074), Casmalia (3412075), Guadalupe (3412085), Point Sal (3412086), Oceano (3512015), Morro Bay South (3512037)	Threatened by coastal development and vehicles. Potentially threatened by non-native plants. Hybridizes with M. crispa. See Leaflets of Western Botany 5:179-182 (1949) for original description, and Phytologia 72(1):9-16 (1992) for revised nomenclature.	PDLAM180X0	1/1/1974	7/29/2013

Scientific Name	Common	CRPR	GRank	SRank	CESA	FESA	Blooming Period	Habitat	Counties	Quads	Notes	Element Code	Date Added	Last Update
Mucronea californica	California spineflower	4.2	G3	S3	None	None	Mar-Jul(Aug)	Chaparral, Cismontane woodland, Coastal dunes, Coastal scrub, Valley and foothill grassland	KRN, LAX, MNT, RIV, SBA, SBD, SDG, SLO, VEN	Otay Mesa (3211658), Point Loma (3211762), Zaca Creek (3412062), Los Alamos (3412063), Lompoc (3412064), Surf (3412065), Caliente Mtn. (3511917), Oceano (3512015), Arroyo Grande NE (3512025)	Rare in southern California. Many herbarium records old. Threatened by aggregate mining, vehicles, flood control modification, urbanization, and water percolation projects. Possibly threatened by non-native plants. Includes Chorizanthe californica var. suskdorfii. See Phytologia 66(3):203-205 (1989) for revised nomenclature.	PDPGN0F010	1/1/1988	9/17/2010
Nemacaulis denudata var. denudata	coast woolly-heads	1B.2	3G4T2	S2	None	None	Apr-Sep	Coastal dunes	LAX, ORA, SCT, SDG, SLO	Imperial Beach (3211751), National City (3211761), Point Loma (3211762), La Jolla (3211772), Del Mar (3211782), Encinitas (3311713), San Luis Rey (3311723), Oceanside (3311724), Las Pulgas Canyon (3311734), Newport Beach (3311768), Santa Catalina East (3311833), Seal Beach (3311861), San Pedro (3311863), Long Beach (3311872), Torrance (3311873), Oceano (3512015), Morro Bay South (3512037)	Much reduced by coastal development. Intergrades with var. gracilis at some localities. Threatened by foot traffic, trampling, and non-native plants. See Madroño 27(2):101-109 (1980) and Phytologia 66(4):390-91 (1989) for taxonomic treatments.	PDPGN0G011	1/1/1994	8/17/2016
Orobanche parishii ssp. brachyloba	short-lobed broomrape	4.2	G4?T4	S3	None	None	Apr-Oct	Coastal bluff scrub, Coastal dunes, Coastal scrub	SBA, SCT, SCZ, SDG, SLO, SMI, SNI, SRO, VEN	Imperial Beach (3211751), Point Loma (3211762), Del Mar (3211782), Encinitas (3311713), Santa Catalina South (3311834), San Nicolas Island (3311924), Santa Cruz Island C (3311985), Santa Cruz Island A (3311987), Santa Rosa Island North (3312081), Santa Rosa Island West (3312082), San Miguel Island East (3312083), San Miguel Island West (3312084), Oceano (3512015)	Parasitic on shrubs such as Isocoma menziesii. See Madroño 22(2):68 (1973) for original description.	PDORO040A2	1/1/1974	3/15/2010
Phacelia ramosissima var. austrolitoralis	south coast branching phacelia	3.2	5?T3Q	S3	None	None	Mar-Aug	Chaparral, Coastal dunes, Coastal scrub, Marshes and swamps (coastal salt)	LAX, MNT, ORA, SBA, SDG, SLO, VEN	Encinitas (3311713), San Luis Rey (3311723), Dana Point (3311746), San Juan Capistrano (3311756), Laguna Beach (3311757), Newport Beach (3311768), Anaheim (3311778), La Habra (3311788), Venice (3311884), Santa Cruz Island D (3311984), Santa Cruz Island B (3311986), San Miguel Island East (3312083), San Miguel Island West (3312084), Point Dume (3411817), Triunfo Pass (3411818), Point Mugu (3411911), Oxnard (3411922), Ventura (3411933), Carpinteria (3411945), Santa Barbara (3411946), Goleta (3411947), Dos Pueblos Canyon (3411948), Point Conception (3412044), Tranquillon Mtn. (3412055), Point Arguello (3412056), Lompoc (3412064), Surf (3412065), Zaca Lake (3412071), Orcutt (3412074), Casmalia (3412075), Nipomo (3512014), Oceano (3512015), Monterey (3612158)	Previously on List 4.2. Occurrences from MON and SLO counties may be misidentified. Many collections old; need field surveys. Threatened by development. Possibly threatened by non-native plants. Characters distinguishing the varieties of P. ramosissima do not work most of the time; needs further study. A synonym of P. ramosissima in TJM 2.	PDHYD0C416	5/18/2007	10/18/2016

Scientific Name	Common	CRPR	GRank	SRank	CESA	FESA	Blooming Period	Habitat	Counties	Quads	Notes	Element Code	Date Added	Last Update
Prunus fasciculata var. punctata	sand almond	4.3	G5T4	S4	None	None	Mar-Apr	Chaparral (maritime) , Cismontan e woodland, Coastal	SBA, SLO	Lompoc (3412064), Oceano (3512015)		PDROS1C0E2	1/1/1974	3/15/2010
Scrophularia atrata	black- flowered figwort	1B.2	G2?	S2?	None	None	Mar-Jul	cone coniferous forest, Chaparral, Coastal dunes, Coastal scrub, Riparian	SBA, SLO	Santa Barbara (3411946), Goleta (3411947), Dos Pueblos Canyon (3411948), Tajiguas (3412041), Gaviota (3412042), Solvang (3412052), Santa Rosa Hills (3412053), Lompoc Hills (3412054), Tranquillon Mtn. (3412055), Point Arguello (3412056), Los Alamos (3412063), Lompoc (3412064), Surf (3412065), Orcutt (3412074), Casmalia (3412075), Guadalupe (3412085), Point Sal (3412086), Oceano (3512015), Arroyo Grande NE (3512025), Pismo Beach (3512026)	Plants from south of Pt. Conception (143A, 143B, 144A, 144B) are probably hybrids with S. californica ssp. floribunda. Threatened by energy development and mining.	PDSCR1S010	1/1/1974	3/15/2010
Senecio blochmaniae	Blochman' s ragwort	4.2	G3	S3	None	None	May-Oct	Coastal dunes	SBA, SLO	Surf (3412065), Casmalia (3412075), Santa Maria (3412084), Point Sal (3412086), Oceano (3512015)	Threatened by non-native plants, development, and vehicles. See Erythea 1:7 (1893) for original description.	PDAST8H0G0	1/1/1974	3/15/2010

## BIOLOGICAL RESOURCES TECHNICAL REPORT

Appendix E CNDDDB Database Search Results  
March 10, 2020

### Appendix E CNDDDB DATABASE SEARCH RESULTS



[illegible]

54	Arctostaphylos pilosula	Santa Margarita manzanita	Oceano	400	19360226	19360226	UNKNOWN	None	None	G2?	S2?	1B.2		BLM_S; SB_SBBG; USFS_S	SOUTH OF LOS BERROS CREEK NEAR HIGHWAY 1, SOUTHEAST OF ARROYO GRANDE.	MAPPED BY CNDDB AROUND SECTION 1 BASED ON TRS INFORMATION ON COLLECTION LABEL.	CHAPARRAL WITH TOXICODENDRON DIVERSILOBUM, MIMULUS AURANTIACUS, AND PAEONIA BROWNII.	SITE BASED ON 3 HISTORIC COLLECTIONS FROM THIS VICINITY. NEEDS FIELDWORK. THIS OCCURRENCE WAS PREVIOUSLY A. WELLSII OCCURRENCE #1. SITE BASED ON AN UNDATED BRANDEGEE COLLECTION AND A 1947 HOOVER COLLECTION. SURVEYS BY JOHN CHESNUT, DAVE IMPER, AND OTHER DUNE-EXPERIENCED BOTANISTS IN PRICE CANYON DID NOT FIND THIS SPECIES (DATE OF SURVEYS UNKNOWN).	
55	Monardella sinuata ssp. sinuata	southern curly-leaved monardella	Pismo Beach	0	19470716	19470716	UNKNOWN PVT, DPR-PISMO	None	None	G3T2	S2	1B.2			PRICE CANYON.	EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS AS A NON-SPECIFIC POLYGON ALONG PRICE CANYON.	IN SANDY SOIL IN SHADE OF LIVE OAKS.	THERE IS A LOT OF VELDT GRASS IN THIS AREA.	
56	Emys marmorata	western pond turtle	Pismo Beach	100	XXXXXXX	XXXXXXX	SB, UNKNOWN	None	None	G3G4	S3		SSC	BLM_S; IUCN_VU; USFS_S	PISMO CREEK, NORTH OF GROVER CITY.	TURTLES OCCUR IN OR ALONG CREEK. EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS AS A NON-SPECIFIC POLYGON ALONG PRICE CANYON.		OBSERVED BY D. HOLLAND, DATE UNKNOWN. ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1947 HOOVER COLLECTION. NEEDS FIELDWORK.	
57	Agrostis hooveri	Hoover's bent grass	Pismo Beach	0	19470716	19470716	UNKNOWN	None	None	G2	S2	1B.2		BLM_S; USFS_S	PRICE CANYON.	MAPPED BY CNDDB AROUND SECTION 10 ACCORDING TO TRS INFORMATION ON COLLECTION LABELS; ELEVATION ON ONE COLLECTION LABEL IS 1100 FEET, ELEVATION ON THE OTHER COLLECTION LABEL IS 1600 FT.	ON NORTH-FACING SANDSTONE SLOPE.		
58	Arctostaphylos pilosula	Santa Margarita manzanita	Tar Spring Ridge	1350	19360429	19360429	PVT	None	None	G2?	S2?	1B.2		BLM_S; SB_SBBG; USFS_S	TAR SPRING RIDGE; 1.5 TO 2 MILES NORTHWEST OF TAR SPRING RANCH, EAST OF ARROYO GRANDE.		ABUNDANT ON RIDGETOPS. IN CHAMISE CHAPARRAL WITH ARCTOSTAPHYLOS GLANDULOSA, DENDROMECON RIGIDA, AND QUERCUS BERBERIDIFOLIA.	ONLY SOURCES OF INFORMATION FOR THIS SITE ARE 1936 COLLECTIONS BY LEE. THIS OCCURRENCE WAS PREVIOUSLY A. WELLSII OCCURRENCE #3. TYPE LOCALITY. ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 1927 EASTWOOD COLLECTION. ACCORDING TO CHESNUT, SITE MAY BE LOCATED AT CHALK OUTCROPS NEAR SE END OF TAR SPRING RIDGE JUST NORTH OF HUASNA ROAD 1 MI OUTSIDE OF HUASNA.	
59	Malacothamnus gracilis	slender bush-mallow	Tar Spring Ridge	500	19270730	19270730	UNKNOWN	None	None	G1Q	S1	1B.1			ON ROAD FROM ARROYO GRANDE TO HUASNA.	EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS NON-SPECIFICALLY ALONG THE MAIN ROAD BETWEEN ARROYO GRANDE AND HUASNA.			
60	Anniella pulchra	northern California legless lizard	Oceano	20	20150307	20150307	DPR-OCEANO DUNES SVRA	None	None	G3	S3		SSC	USFS_S	COASTAL SAND DUNES SOUTH OF ARROYO GRANDE CREEK AND OCEANO, AND NORTH OF BIG POCKET LAKE, PISMO DUNES NATURAL PRESERVE.	2015 COLLECTION FROM EAST SIDE OF DUNES PRESERVE NEAR THE RV CAMPGROUND AT THE WEST END OF SILVER SPUR PLACE.	VEGETATION GENERALLY DESCRIBED BY STATE PARKS AS COASTAL STRAND OF BEACH SALTBUSH, COASTAL SALTBUSH, & SAND VERBENA; FOREDUNES WITH SAND-VERBENA; DUNE SCRUB OF MOCK HEATHER AND SILVER BEACH LUPINE.	COLLECTED FROM THE GENERAL AREA ON 28 SEP 1959. ONE COLLECTED ON 7 MAR 2015. NATURAL PRESERVE CLOSED TO VEHICLES AND DOGS. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BA CKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.	
61	Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	Oceano	100	197606XX	197606XX	PVT	None	None	G3	S2.1				DUNE LAKES, 2 MILES SOUTH OF OCEANO.		TYPHA SPP., SCIRPUS SPP, ETC. ON MARGINS OF VERY DEGRADED DUNE LAKE SYSTEM.	LAKES RECEIVE AGRICULTURAL RUNOFF.	
62	Areniscythris brachypteris	Oso Flaco flightless moth	Oceano	75	19730824	19730824	PVT	None	None	G1	S1				DUNE LAKES, 3 AIR MILES SOUTH OF OCEANO.		SOME ADULTS REARED FROM LARVAE COLLECTED BENEATH MONARDELLA CRISPA AND SENECIO BLOCHMANAE.	HOLOTYPE MALE, ALLOTYPE FEMALE (BOTH DEPOSITED AT CAS ON INDEFINITE LOAN FROM UCB), AND 56 MALE AND 34 FEMALE PARATYPES.	
63	Lichnanthe albipilosa	white sand bear scarab beetle	Oceano	60	19760521	19760521	PVT	None	None	G1	S1				DUNE LAKES 3 MILES SOUTH OF OCEANO.		LITTLE IS KNOWN ABOUT THIS BEETLE'S LIFE HISTORY.	THREATS INCLUDE DEVELOPMENT (DUNE LAKES LTD) & ORV USE OF THE DUNES.	ONE FEMALE COLLECTED (UCB-CIS).
64	Anniella pulchra	northern California legless lizard	Oceano	100	196602XX	196602XX	UNKNOWN	None	None	G3	S3		SSC	USFS_S	DUNE LAKES AREA OF CALLENDER DUNES, ABOUT 2 MILES SOUTH OF OCEANO.	DUNE LAKES (GNIS) REFERS TO THE AREA OF SEVERAL SMALL LAKES IN THE COASTAL SAND DUNES WEST OF HWY 1 AND SOUTH OF CIENEGA VALLEY; E.G. PIPELINE LAKE, HOSPITAL LAKE, WHITE LAKE, MUD LAKE, ETC. BETTER MAP DETAIL NEEDED FOR EASTERN PORTION OF OCCURRENCE; POSSIBLY CONTINUOUS WITH ED #34 AND #35 BUT MORE COMPREHENSIVE SURVEYS NEEDED. PORTIONS OF SITE HAVE BEEN PLANTED. ADDITIONAL POPULATION INFORMATION AVAILABLE AT CNDDB.	IN RIVER BOTTOMLAND AND COASTAL DUNE WETLAND WITH DISTICHLIS SPICATA, SALIX LASIOLEPIS, ANEMOPSIS CALIFORNICA, BACCHARIS PILULARIS, ISOCOMA MENZIESII, JAUMEA CARNOSA, PLANTAGO SUBNUDA, P. MAJOR, RUMEX SP., POTENTILLA EGEDII, ETC. EXPERT OPINION IS THAT THEY WERE EXTIRPATED FROM HERE AROUND 1975-1978. THE ONLY KNOWN EXTANT POPULATION IN SAN LUIS OBISPO CO IS NEAR THE COUNTY LINE & RAGGED POINT IN THE FAR NW PORTION OF THE COUNTY.	GRAZING, ORVS, DEVELOPMENT, REDUCED WATER, FLOODING, INVASIVES, OIL REMEDIATION ACTIVITIES, FERAL PIGS.	POP NUMBERS FOR PORTIONS OF SITE: 1000-10,000 PLANTS IN 1983; ~6000 IN 1986; 54,000 EST IN 1990; 1746 IN 2006; 1339 IN '07; 8362 IN '08; 9751 IN '09; 4464 IN '10; 2861 IN '14; 2833 IN '15; 1510 IN '16, SEEN IN '17. INCL FORMER ED #5 7 & 15.
65	Cirsium scariosum var. loncholepis	La Graciosa thistle	Point Sal	20	20170321	20170321	PVT, SBA COUNTY??	Endangered	Threatened	G5T1	S1	1B.1			SANTA MARIA RIVER; EXTENDS FROM NEAR THE RIVER MOUTH TO ABOUT 2.5 MILES EAST, ON BOTH SIDES OF THE SLO/SBA COUNTY LINE.	ARROYO GRANDE CREEK FROM CEECHETTI RD NE TO BIDDLE REGIONAL PARK, ABOUT 4 MILES UPSTREAM (NE) FROM ARROYO GRANDE.			TADPOLES COLLECTED ON 22 JUL 1940. NOT FOUND BY INDEPENDENT RESEARCH CREWS IN SOUTHERN CALIFORNIA IN 1981-1993, 1988-1991, OR 2011-2014.
66	Rana boylei	foothill yellow-legged frog	Arroyo Grande NE	272	2014XXXX	19400722	UNKNOWN USFWS-GUADALUPE-NIPOMO DUNES	None	Candidate Threatened	G3	S3		SSC	BLM_S; IUCN_NT; USFS_S	EAST SIDE OF THE GUADALUPE-NIPOMO DUNES ABOUT 2.5 MILES NW OF GUADALUPE AND ABOUT 6.75 MILES SOUTH OF OCEANO.				
67	Anniella pulchra	northern California legless lizard	Oceano	85	19890114	19890114	NIPOMO DUNES	None	None	G3	S3		SSC	USFS_S	MUSSEL ROCK DUNES, SOUTH OF SANTA MARIA RIVER, EXTENDS ABOUT 1.6 MILES, 0.75 -1.5 MILES INLAND.		STABILIZED BACKDUNES AND SLOPES: VEG VARIES WITH EXPOSURE TO WIND. DOMS INCLUDE ERICAMERIA ERICOIDES, LUPINUS CHAMISSONIS, ERIOGONUM PARVIFOLIUM, ARTEMISIA CALIFORNICA.	EHRHARTA CALYCINA INTRODUCED TO AREA. ALSO OIL LEASES AND MINING PERMITS. RECOVERING FOLLOWING ORV CLOSURE IN 1982.	ONCE INHABITED BY NATIVE CHUMASH. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BA CKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.
68	Central Dune Scrub	Central Dune Scrub	Point Sal	200	19850317	19850317	PVT	None	None	G2	S2.2					EXTENSIVE OCCURRENCE MAPPED MOSTLY ACCORDING TO 1979 HOWALD MAP, 1987 GRIFFITHS COLLECTION LOCALITY (0.25 MI W OF BLACK LAKE...RIDGE BORDERING S EDGE OF MUD LAKE), 1998 CHESNUT MAP, & 2012 GOSLINER COORDINATES.	INTRODUCED GRASSES LOCALLY COMMON, ESPECIALLY ERHARTA CALYCINA AND BROMUS DIANDRUS. ASSOC W/ ABRONIA, CARPOBROTUS, AMMOPHILA ARENARIA, ETC. 1972: SPAWNING GRAVELS PRESENT BUT NOT ABUNDANT & NO FISH OBS FROM MOUTH TO EDNA. 1974: STEELHEAD OBS SUMMER & FALL IN ELECTROFISHING SURVEYS IN UPPER HALF OF PISMO CR & LOWERMOST WEST CORRAL DE PIEDRA CR. 2002: DENSE WILLOWS IN LOWER CR.	ORV ACTIVITY, PIPELINE MAINTENANCE VEHICLES CLOSE BY.	POPULATION NUMBERS FOR PORTIONS OF SITE: 100+ PLANTS SEEN IN 1979, 10+ PLANTS IN 1984, <10 PLANTS IN 1985, MANY SCATTERED PLANTS IN 1995, <10 PLANTS IN 2012. ALSO SEEN IN 2006 & 2010. POSSIBLE HYBRIDS. INCLUDES FORMER OCCS #2, 3, 4, AND 5.
69	Monardella undulata ssp. crispa	crisp monardella	Oceano	100	20120609	20120609	SVRA	None	None	G3T2	S2	1B.2		BLM_S	OCEANO/NIPOMO DUNES, FROM OSO FLACO LAKE NORTH TO BLACK LAKE, SOUTH OF OCEANO.				BASED ON 1990 DFG FILE DOCUMENTS, STEELHEAD APPARENTLY STILL ENTER PISMO CREEK. 8 JUL 2002: A 2" FRY WAS FOUND DEAD, AND 2 OTHERS OBSERVED ALIVE IN LOWER PISMO CREEK BY RR BRIDGE. BOUNDARY FROM SOIL SURVEY ORTHOPHOTO. BETTER DATA ON COMPOSITION, CONDITION NEEDED. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BA CKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.
70	Oncorhynchus mykiss irideus pop. 9	steelhead - south-central California coast DPS	Arroyo Grande NE	90	20020708	20020708	PVT, DPR-PISMO SB, UNKNOWN	Threatened	None	G5T2Q	S2			AFS_TH	PISMO CREEK & TRIBUTARY, WEST CORRAL DE PIEDRA CREEK, PRICE CANYON, BETWEEN EDNA & PISMO BEACH.	FROM LOWER MIDDLE PISMO CREEK TO THE LOWERMOST PORTION OF WEST CORRAL DE PIEDRA CREEK.	OF PISMO CR & LOWERMOST WEST CORRAL DE PIEDRA CR. 2002: DENSE WILLOWS IN LOWER CR.	SILTATION, CHEMICAL POLLUTION, 1 METER HIGH DIVERSION DAM, DEVELOPMENT.	
71	Central Dune Scrub	Central Dune Scrub	Point Sal	400	1968XXXX	1968XXXX	UNKNOWN	None	None	G2	S2.2				WITHIN 0.5 MILE OF COAST BETWEEN MUSSEL POINT & POINT SAL.		COOPER, 1967, REPORTS DENSE SCRUB W/ ERICAMERIA, LUPINUS, ABRONIA.		
72	Erigeron blochmaniae	Blochman's leafy daisy	Oceano	50	20160719	20160719	DUNES SVRA	None	None	G2	S2	1B.2		BLM_S	GUADALUPE DUNES, NORTH AND WEST OF OSO FLACO LAKE. IMMEDIATELY WEST OF THE INTERSECTION OF CALLENDAR ROAD AND HIGHWAY 1.	MAPPED BY CNDDB TO ENCOMPASS SEVERAL OBSERVATIONS FROM "OUTLET FROM OSO FLACO TO THE OCEAN," "ABOUT DUNES W OF OSO FLACO LAKES," "DUNES ON NW SHORE OF OSO FLACO LAKE," "OSO FLACO LAKE, DUNES JUST N FROM THE BEACH ACCESS BOARDWALK,"	ON EXTENSIVE SAND DUNES. ASSOCIATED WITH HALOPAPPUS ERICOIDES, RHAMNUS CALIFORNICA, FRANSERIA BIPINNATIFIDA, AND RUMEX MARITIMUS. IN HOLLOWES AMONG DUNES, ALWAYS IN AREAS WELL-VEGETATED.		SITE IS BASED ON MANY COLLECTIONS AND OBSERVATIONS FROM 1940 THROUGH 2016. INCLUDES GENERAL OBSERVATIONS FROM OSO FLACO LAKE.
73	Erigeron blochmaniae	Blochman's leafy daisy	Oceano	100	19980721	19980721	UNKNOWN	None	None	G2	S2	1B.2		BLM_S		EXACT LOCATION UNKNOWN, MAPPED BY CNDDB AS A BEST GUESS.		SITE IS BASED ON A 1998 COLLECTION BY HRUSA & RAGAN; PLANTS NOTED AS ""SCATTERED.""	
74	Nasturtium gambelii	Gambel's water cress	Oceano	20	19810629	19810629	PVT	Endangered	Threatened	G1	S1	1B.1		SB_RSABG; SB_SBBG	NEAR SMALL TWIN LAKE AND CELERY LAKE, SOUTH OF ARROYO GRANDE.	MAPPED TO INCLUDE BOTH LAKES SPECIFIED IN COLLECTIONS.	IN SWAMP AMONG DENSE GROWTH OF SCIRPUS AND SPARANGIUM. AREA IS MANAGED AS THE COUNTY'S RANCHO GUADALUPE DUNES PRESERVE, THOUGH THERE APPEARS TO BE A SAND MINING OPERATION NEAR THE NE PORTION OF THIS OCCURRENCE ALONG W MAIN ST THAT APPEARS ACTIVE IN 2012 GOOGLE STREETVIEW AND 2016 AERIALS.	SITE LIKELY EXTIRPATED BY DEVELOPMENT OR ALTERATION OF HABITAT.	EXTIRPATED BY DEVELOPMENT OR ALTERATION OF HABITAT (M. MCLEOD, PERS COMM; SEE PRI88U0001).
75	Anniella pulchra	northern California legless lizard	Point Sal	122	19880102	19880102	SBA COUNTY	None	None	G3	S3		SSC	USFS_S	COASTAL SAND DUNES 1 MILE E OF THE BEACH AND S OF SANTA MARIA RIVER, E SIDE OF RANCHO GUADALUPE DUNES PRESERVE.	ACCESSIBLE FROM W MAIN ST, ABOUT 4 MILES WSW OF GUADALUPE. DUNES IN THIS AREA ARE NOTED AS THE MUSSEL ROCK DUNES IN GNIS.		SPECIMENS COLLECTED IN 1982 AND 1988.	
76	Agrostis hooveri	Hoover's bent grass	Arroyo Grande NE	500	19920528	19920528	PVT?	None	None	G2	S2	1B.2		BLM_S; USFS_S	MONTECITO RIDGE AREA. BETWEEN SAN LUIS OBISPO AND ARROYO GRANDE ALONG HIGHWAY 227.	MAPPED BY CNDDB AS BEST GUESS AROUND MONTECITO RIDGE DRIVE ON THE EAST SIDE OF CARPENTER CANYON ROAD (HWY 227).	SANDY HILLS WITH COASTAL LIVE OAK WOODLAND, MANZANITA CHAPARRAL, AND COASTAL SCRUB.	OCCASIONAL"" IN 1992. A 1948 HOOVER COLLECTION FROM ""EDGE OF SAN LUIS VALLEY ON CARPENTER CANYON ROAD TO ARROYO GRANDE"" IS ALSO ATTRIBUTED TO THIS SITE.	
77	Chorizanthe rectispina	straight-awned spinyflower	Arroyo Grande NE	500	19920528	19920528	PVT?	None	None	G2	S2	1B.3		BLM_S; USFS_S	MONTECITO RIDGE AREA. BETWEEN SAN LUIS OBISPO AND ARROYO GRANDE ALONG HIGHWAY 227.	MAPPED BY CNDDB AS BEST GUESS AROUND MONTECITO RIDGE DRIVE ON THE EAST SIDE OF CARPENTER CANYON ROAD (HWY 227).	SANDY HILLS WITH COASTAL LIVE OAK WOODLAND, MANZANITA CHAPARRAL, AND COASTAL SCRUB.	ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1992 KEIL COLLECTION; ""LOCAL IN OPENINGS"" IN 1992.	
78	Ceanothus impressus var. nipomensis	Nipomo Mesa ceanothus	Nipomo	300	19740310	19740310	PVT?	None	None	G3T2	S2	1B.2			GATES' PROPERTY, GRAND VIEW MESA, NIPOMO.	EXACT LOCATION UNKNOWN. MAPPED BY CNDDB AS BEST GUESS AROUND THE GRAND VIEW MESA AREA.	WITH ARCTOSTAPHYLOS, SANDY SOIL, MESA. DOMINANT WOODY SHRUB ON NORTH-FACING SLOPES. COMMON CHAPARRAL SPECIES.	SITE BASED ON 1974 COPELAND COLLECTIONS. NEEDS FIELDWORK.	
79	Agrostis hooveri	Hoover's bent grass	Arroyo Grande NE	0	19690605	19690605	UNKNOWN	None	None	G2	S2	1B.2		BLM_S; USFS_S	OAK PARK DISTRICT, ARROYO GRANDE.	OAK PARK DISTRICT, ARROYO GRANDE.	IN FINE WHITE SAND AND CLAY FROM SANDSTONE. STABILIZED SAND DUNES. WITH ADENOSTOMA FASCICULATUM, ERICAMERIA ERICOIDES, ERIOGONUM PARVIFOLIUM, LOTUS SCOPARIUS, RHAMNUS CALIFORNICA, CROTON CALIFORNICUS, HELIANTHEMUM SCOPARIUM, ETC. EXPOSED SLOPE ABOVE QUERCUS AGRIFOLIA.	ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1969 HOOVER COLLECTION. NEEDS FIELDWORK.	
80	Arctostaphylos rudis	sand mesa manzanita	Arroyo Grande NE	0	199105XX	199105XX	UNKNOWN	None	None	G2	S2	1B.2		BLM_S	SLOPE TO SW OF PISMO CREEK; NEAR INTERSECTION OF HIGHWAY 101 AND 4TH STREET, GROVER CITY.	MAPPED BY CNDDB AS BEST GUESS AROUND THE JUNCTION OF HIGHWAY 101 AND 4TH STREET.		THIS REGION HAS HAD MUCH DEVELOPMENT AND CONVERSION TO GRAPES, OLIVES, AND HORSES.	1 PLANT OBSERVED IN 2007. A 1936 YATES COLLECTION FROM "3/4 MILE SW REEDS, 500 FEET, T32S R13E SEC 5" AND A 1947 HOOVER COLLECTION FROM "PRICE CANYON (JUST S OF)" ARE ALSO ATTRIBUTED TO THIS SITE.
81	Ceanothus impressus var. nipomensis	Nipomo Mesa ceanothus	Arroyo Grande NE	450	20070605	20070605	UNKNOWN	None	None	G3T2	S2	1B.2			TIBER CANYON SOUTH OF ORMONDE ROAD, CA. 1 MILE EAST OF PRICE CANYON ROAD.	MAPPED AS BEST GUESS BASED ON LOCATION DESCRIPTION ON 2007 CARROLL COLLECTION. GIVEN ELEVATION IS 450 FEET.	SANDY SOIL ADJACENT TO ROAD. ASSOCIATED WITH RUBUS UPSINUS AND CAREX BARBARAE.		







135	<i>Ceanothus impressus</i> var. <i>nipomensis</i>	Nipomo Mesa ceanothus	Oceano	375	20190219	20190219 UNKNOWN	None	None	G3T2	S2	1B.2				VICINITY OF THE JUNCTION OF POMEROY ROAD AND WILLOW ROAD, NIPOMO MESA.	MAPPED AS 3 POLYGONS TO INCLUDE VARIOUS SOURCES OF INFORMATION. SW POLYGON IS NON-SPECIFIC TO ENCOMPASS SEVERAL COLLECTION LOCATIONS. NORTHERN POLYGON BASED ON 2004 HELMKAMP COORDINATES. EASTERN POLYGON BASED ON 2019 BEHRMANN COORDINATES.	FOUND WITH EUCALYPTUS GLOBULUS, CEANOETHUS RAMULOSUS, QUERCUS AGRIFOLIA ON SANDY SOIL.	TYPE LOCALITY. SW POLYGON: MAPPED AROUND JUNCTION OF POMEROY RD AND WILLOW RD BASED ON LOCATION INFO FROM HISTORIC COLLECTIONS. N POLYGON: "OCCASIONAL" IN 2004. E POLYGON SEEN IN 2019. VAGUE COLLECTIONS FROM W OF NIPOMO ATTRIBUTED HERE.
136	<i>Eucyclogobius newberryi</i>	tidewater goby	Pismo Beach Arroyo Grande NE	10	20080217	20080217 PVT	Endangered	None	G3	S3		SSC	AFS_EN; IUCN_VU		PISMO CREEK (PRICE CANYON), FROM MOUTH TO 1.0 MILE UPSTREAM, PISMO BEACH.	SITE OCCUPIES 7.5-10 ACRES. 2/13/96, 13 FISH RELOCATED OUT OF CONSTRUCTION ZONE.		LACM 36673-3, COLLECTED 6/16/77. POPULATION PRESUMED EXTANT IN 1990 BY SWIFT. 2280 COLLECTED IN 1995. 347 COLLECTED FROM SEVERAL SAMPLE DATES IN 1996. GOBIES COMMON AND FISH COLLECTED FOR GENETIC SAMPLES ON 15-17 FEB 2008.
137	<i>Horkelia cuneata</i> var. <i>puberula</i>	mesa horkelia		300	19770127	19770127 UNKNOWN	None	None	G4T1	S1	1B.1		USFS_S		CARPENTER CANYON, 2.5 MILES NORTH OF ARROYO GRANDE ON HIGHWAY 227.	MAPPED AS BEST GUESS TO ENCOMPASS THE AREA ABOUT 2.5 ROAD MILES NORTH OF WHERE HIGHWAY 227 INTERSECTS HIGHWAY 101.	COASTAL SAGE SCRUB WITH CROTON CALIFORNICUS.	ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1977 BARBE COLLECTION. NEEDS FIELDWORK.
138	<i>Monardella undulata</i> ssp. <i>undulata</i>	San Luis Obispo monardella	Oceano	45	19610915	19610915 UNKNOWN	None	None	G2	S2	1B.2		BLM_S		ROAD AT EAST END OF WHITE LAKE, DUNE LAKES, SOUTH OF OCEANO.	MAPPED AS BEST GUESS AROUND THE EAST END OF WHITE LAKE.	SANDY SOIL.	SITE BASED ON A 1961 SMITH COLLECTION. A 1957 SMITH COLLECTION FROM "DUNES LAKES, SOUTH OF OCEANO" IS ALSO ATTRIBUTED TO THIS SITE.
139	<i>Anniella pulchra</i>	northern California legless lizard	Oceano	83	19870327	19870327 UNKNOWN	None	None	G3	S3		SSC	USFS_S		ROAD AT HWY 1, SOUTH OF OCEANO.	AREA REFERRED TO AS CALLENDER DUNES.		SEVERAL COLLECTED ON 27 MAR 1987.
140	<i>Lupinus ludovicianus</i>	San Luis Obispo County lupine	Arroyo Grande NE	500	19860601	19060517 PVT	None	None	G1	S1	1B.2		BLM_S; USFS_S		OAK PARK (SCHOOL).	MAPPED AS BEST GUESS BY CNDDb IN VICINITY OF THE HISTORIC LOCATION OF OAK PARK SCHOOL, ON THE NORTH SIDE OF ORMONDE RD AT THE NORTHERN TERMINUS OF OLD OAK PARK ROAD.	OAK PARK SCHOOL WAS RAZED MANY YEARS AGO AND HOUSE NOW ON SITE.	SITE IS BASED ON A 1906 UNANGST COLLECTION. MCLEOD AND RIGGINS-PIMENTEL HAVE REPEATEDLY SEARCHED AREA, BUT NO PLANTS FOUND.
141	<i>Anniella pulchra</i>	northern California legless lizard	Oceano	86	19600326	19600326 UNKNOWN	None	None	G3	S3		SSC	USFS_S		NEIGHBORHOOD OF FAIROAKS (GNIS), ARROYO GRANDE.	MAPPED TO THE GENERAL AREA OF FAIROAKS AS SHOWN ON 1964 EDITION OF THE 1952 TOPO MAP.	COMPARED TO 1960S AERIAL IMAGERY, THIS AREA IS NOW PRIMARILY DEVELOPED AS RESIDENTIAL HOUSING.	DEVELOPMENT.
142	<i>Scrophularia atrata</i>	black-flowered figwort	Point Sal	700	19820502	19820502 SBA COUNTY	None	None	G2?	S2?	1B.2		SB_RSABG		1.2 MILES WEST OF JUNCTION OF BROWN RD AND PT SAL ROAD, POINT SAL STATE BEACH.	EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDb AROUND TRAILS ABOUT 1.2 MILES WEST OF BROWN RD/POINT SAL RD, IN VICINITY OF GIVEN ELEVATION OF 700 FT. THIS AREA IS PART OF THE POINT SAL RESERVE, NOT POINT SAL STATE BEACH.	SHADED BY ADENOSTOMA FASCICULATUM IN COASTAL CHAPARRAL.	ONE COLLECTED ON 26 MAR 1960.
143	<i>Horkelia cuneata</i> var. <i>sericea</i>	Kellogg's horkelia	Oceano	100	19890523	19890523 PVT?	None	None	G4T1?	S1?	1B.1		USFS_S		JACK LAKE, 4 AIR MILES SOUTH OF OCEANO.	WEST OF OIL REFINERY. MAPPED AS BEST GUESS BY CNDDb IN THE GENERAL VICINITY OF JACK LAKE.	ON DRY SAND-FLATS, MOIST MARGIN OF LAKE IN SAND DUNES, LOW-LYING STABILIZED DUNES.	MAIN SOURCE OF INFORMATION FOR THIS SITE IS A 1982 FORBES COLLECTION; ""UNCOMMON"" IN 1982. A 1930 HOFFMANN COLLECTION FROM POINT SAL IS ALSO ATTRIBUTED TO THIS SITE.
144	<i>Anniella pulchra</i>	northern California legless lizard	Nipomo	363	19830109	19830109 SLO COUNTY	None	None	G3	S3		SSC	USFS_S		NIPOMO REGIONAL PARK, JUST NW OF W TEFFT STREET AT ORCHARD ROAD, NIPOMO.	MAPPED TO DESCRIPTION OF COLLECTION LOCATION.	WHEREAS THE PARK IS UNDEVELOPED, MORE DENSE RESIDENTIAL HOUSING HAS BEEN DEVELOPED IN THE SURROUNDING AREA SINCE THE TIME OF COLLECTION.	ONE COLLECTED BY S. SWEET ON 9 JAN 1983 (SSS #26145).
145	<i>Erigeron blochmaniae</i>	Blochman's leafy daisy	Oceano	30	19801118	19801118 DPR-PISMO SB	None	None	G2	S2	1B.2		BLM_S		ABOUT 1/3 SOUTH OF GROVER CITY BEACH RAMP TOWARDS OCEANO BEACH RAMP, PISMO DUNES.	MAPPED AS BEST GUESS BY CNDDb ABOUT 1/3 MILE SOUTH OF GRAND AVE, BETWEEN HIGHWAY 1 AND THE SHORELINE.	THICKET IN SHALLOW HOLLOW ON SOUTH SLOPE OF SANDY TRANSECT OCEANFRONT DUNE SYSTEM.	ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1980 GRIFFITHS COLLECTION. NEEDS FIELDWORK.
146	<i>Cirsium scariosum</i> var. <i>loncholepis</i>	La Graciosa thistle	Oceano	60	201701XX	19670421 DUNES SVRA	Endangered	Threatened	G5T1	S1	1B.1				1,000 YARDS SOUTHWEST OF OSO FLACO LAKE AND NORTHWEST OF SANTA MARIA.	EXACT LOCATION UNKNOWN; MAPPED APPROXIMATELY 1000 YARDS SOUTHWEST OF OSO FLACO LAKE AND TO INCLUDE AREA INDICATED BY KOFRON AS THE LIKELY LOCATION OF THIS COLLECTION.	GROWING IN SANDY SOIL.	VEHICLE TRACKS VISIBLE IN AREA. CONTROLLED BURN WITH WEED TREATMENT CONDUCTED IN 2009.
147	<i>Anniella pulchra</i>	northern California legless lizard	Point Sal	20	19871128	19871128 SBA COUNTY	None	None	G3	S3		SSC	USFS_S		ABOUT 0.5 MILE SOUTH OF ITS MOUTH, 4.25 MILES WSW OF GUADALUPE.	APPEARS TO BE THE AREA BETWEEN THE PARKING LOT FOR RANCHO GUADALUPE DUNES PRESERVE AND THE RIVER.		SPECIMENS COLLECTED IN THIS AREA IN 1978, 1979, AND 1987.
148	<i>Chorizanthe breweri</i>	Brewer's spineflower	Arroyo Grande NE	300	19770321	19770321 UNKNOWN	None	None	G3	S3	1B.3		BLM_S; USFS_S		PRICE CANYON ROAD ABOUT 1 MILE SOUTHWEST OF HIGHWAY 227, SOUTH OF SAN LUIS OBISPO.	PRICE CANYON TAR SANDS PROJECT.	IN OPEN GRASSLAND, SOUTH-FACING SLOPE, WITH FILAREE.	ONLY SOURCE OF INFORMATION FOR THIS OCCURRENCE IS 1977 COLLECTION BY IMPER CITED BY REVEAL AND HARDHAM (PHYTOLOGIA, 1989). COLLECTION CURRENTLY IDENTIFIED AS CHORIZANTHE DIFFUSA VAR. NIVEA; ID NEEDS CONFIRMATION.
149	<i>Arctostaphylos rudis</i>	sand mesa manzanita	Oceano	300	19850305	19850305 UNKNOWN	None	None	G2	S2	1B.2		BLM_S		ALONG RIDGE JUST SOUTH OF NATIVE SONS WHOLESALE NURSERY, EL CAMPO ROAD, NIPOMO MESA.	JUST SOUTH OF NATIVE SONS WHOLESALE NURSERY ON THE EAST SIDE OF EL CAMPO ROAD.	OPEN GRASSY FIELD AT SOUTHERN MARGIN OF OAK WOODLAND ALONG RIDGE.	SITE BASED ON A 1985 GRIFFITHS COLLECTION. A 1939 GRAHAM COLLECTION FROM "W LOS BERROS, 250 FT" IS ALSO ATTRIBUTED TO THIS SITE.
150	<i>Arctostaphylos rudis</i>	sand mesa manzanita	Oceano	300	19880728	19880728 PVT	None	None	G2	S2	1B.2		BLM_S		1.5 MILES SOUTH OF LOS BERROS ALONG BLACK LAKE CANYON, NIPOMO MESA.	ON BOTH SIDES OF UPPER CANYON, NORTH OF BLACK LAKE GOLF COURSE HOUSING DEVELOPMENT. NEAR BASINS A AND B.	ORIGINAL POPULATION REDUCED BY DEVELOPMENT.	200 PLANTS IN 1988. A 1964 HOOVER COLLECTION FROM ""2 MI S OF BERROS ON NIPOMO MESA"" IS ALSO ATTRIBUTED TO THIS SITE.
151	<i>Taxidea taxus</i>	American badger	Arroyo Grande NE	140	19910628	19910628 UNKNOWN	None	None	G5	S3		SSC	IUCN_LC		VICINITY OF LA CANADA ROAD AND JAMES WAY, ARROYO GRANDE.	HABITAT CONSISTS OF A GRASSY HILLSIDE WITH BRUSHY RIPARIAN AND OAK WOODLANDS INTERSPERSED.	THREATENED BY PLANNED HOUSING DEVELOPMENTS.	FAIRLY NUMEROUS FRESH DIGGINGS AND BURROWS PRESENT ON 15 MAR AND 28 JUN 1991.
152	<i>Cirsium scariosum</i> var. <i>loncholepis</i>	La Graciosa thistle	Oceano	70	2017XXXX	XXXXXXX UNKNOWN	Endangered	Threatened	G5T1	S1	1B.1				BLACK LAKE.	EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS AROUND BLACK LAKE. IF THIS SITE IS VALID AND NOT A MIS-ID, THEN IT IS LIKELY EXTIRPATED.	MUCH OF THE LAKE WAS DRY IN 1990 SEARCH. IN 2017, VERY LITTLE HABITAT REMAINED AND THERE WERE ABUNDANT BULRUSHES.	SITE BASED ON HOOVER'S "THE VASCULAR PLANTS OF SAN LUIS OBISO CO" WHERE THIS PLANT WAS REPORTED "AT LEAST FROM BLACK LAKE SOUTHWARD." ALL SUBSEQUENT SURVEYS IN THIS AREA (1983, 1986, 1990, 2017) INDICATE SITE MAY BE A MIS-ID. UNKNOWN NUMBER OF PLANTS SEEN. 1975 SMITH COLLECTION FROM "DUNE LAKES, ALONG SANDY ROAD IN DUNES" ATTRIBUTED TO THIS SITE.
153	<i>Chenopodium littoreum</i>	coastal goosefoot	Oceano	65	20100607	20100607 UNKNOWN	None	None	G1	S1	1B.2				LAND CONSERVANCY PRESERVE AT BLACK LAKE, NEAR HIGHWAY 1, GUADALUPE.	EXACT LOCATION UNKNOWN. MAPPED BY CNDDb CENTERED ON BLACK LAKE NEAR DUNES.	IN DUNES. SANDY, SEMI-STABILIZED BEACH DUNE.	MAIN SOURCE OF INFORMATION FOR THIS SITE IS A 1947 HOOVER COLLECTION. A 1974 COWAN COLLECTION FROM "NEAR HWY 1, W OF NIPOMO, 5 MI N OF TURNOFF TO OSO FLACO" IS ALSO ATTRIBUTED TO THIS SITE. NEEDS FIELDWORK.
154	<i>Delphinium parryi</i> ssp. <i>blochmaniae</i>	dune larkspur	Oceano	0	19740411	19740411 UNKNOWN	None	None	G4T2	S2	1B.2		BLM_S		BLACK LAKE, SOUTH OF ARROYO GRANDE.	EXACT LOCATION UNKNOWN. MAPPED BY CNDDb IN THE GENERAL VICINITY OF BLACK LAKE.	IN DRY LOOSE SAND. WITH LUPINUS ARBOREUS AND L. NANUS. OLD STABILIZED DUNE FORMATION.	MAIN SOURCE OF INFO FOR THIS SITE IS 1947 COLLECTION BY HOOVER. SOME EVIDENCE OF PROPER HABITAT, BUT NO PLANTS FOUND IN 1987 (M. MCLEOD) OR 1998 (CHESNUT). 9 PLANTS TRANSPLANTED 5-16-98, 6 FOUND SEP 1998, NONE SURVIVING IN 1999.
155	<i>Arenaria paludicola</i>	marsh sandwort	Oceano	70	1999XXXX	19980906 PVT	Endangered	Endangered	G1	S1	1B.1		SB_SBBG		BLACK LAKE, WEST OF NIPOMO MESA AND SOUTH OF ARROYO GRANDE.	IN 1998 NINE PLANTS TRANSPLANTED TO LAND CONSERVANCY EASEMENT OF BLACK LAKE.	COMPETITION FROM OTHER PLANTS.	APPARENT EUTROPHICATION AND BIOTRIMULATION IN WATERSHED.
156	<i>Taxidea taxus</i>	American badger	Arroyo Grande NE	220	19910405	19910405 PVT	None	None	G5	S3		SSC	IUCN_LC		WEST OF HIGHWAY 227, JUST SW OF THE JUNCTION OF HIGHWAY 227 AND THE EAST FORK OF PISMO CREEK, NNE OF GROVER CITY.	HABITAT CONSISTS OF GRAZED GRASSLAND BORDERED BY OAK WOODLAND AND CHAPARRAL.	POSSIBLE THREAT OF DEVELOPMENT INTO A GOLF COURSE.	RECENT DIGGINGS AND BURROWS PRESENT ON 5 APR 1991.
157	<i>Athene cunicularia</i>	burrowing owl	Point Sal	70	20060316	20060316 PVT-CHEVRON	None	None	G4	S3		SSC	BLM_S; IUCN_LC; USFWS_BCC		GUADALUPE OIL FIELDS, ABOUT 3 MILES WEST OF GUADALUPE.	HABITAT CONSISTS OF COASTAL DUNE SCRUB, DOMINATED BY ERICAMERIA ERICOIDES, LUPINUS CHAMISSONIS, AND ERIOGONUM PARVIFOLIUM. SUBSTRATE CONSISTS OF FINE SAND ON A FLAT ASPECT, WITH GENTLY SLOPING, STABILIZED DUNES NEARBY.	THREATENED BY REMEDIATION PLANS (INCLUDING PIPE REMOVAL) IN VARIOUS LOCATIONS.	2 SEPARATE BURROWING OWLS OBSERVED, ON 16 MAR 2006, USING SECTIONS OF OLD, EXPOSED PIPES, REMAINING FROM THE OILFIELD INFRASTRUCTURE, AS BURROWS.
158	<i>Arenaria paludicola</i>	marsh sandwort	Oceano	10	19930906	19500513 DPR-PISMO SB	Endangered	Endangered	G1	S1	1B.1		SB_SBBG		WEST SHORE OF OSO FLACO LAKE.	EXACT LOCATION UNKNOWN. MAPPED BY CNDDb AS A BEST GUESS.	MARSHY BORDER OF LAKE.	ORVS AND NON-NATIVE PLANTS HAD GREATLY DEGRADED THE SITE AS OF 1987.
159	<i>Clarkia speciosa</i> ssp. <i>immaculata</i>	Pismo clarkia	Pismo Beach	200	19830607	19280617 UNKNOWN	Endangered	Rare	G4T1	S1	1B.1		SB_RSABG; SB_SBBG		PRICE CANYON, 3 MILES SOUTH OF EDNA.	EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDb ALONG PRICE CANYON ROAD AROUND 3 ROAD MILES SOUTH OF EDNA.	DRY GRAVELLY SLOPE AT EDGE OF CHAPARRAL.	PROPOSED DEVELOPMENT IN AREA, AND NECESSARY ROAD, WILL LIKELY IMPACT THE SPECIES (1996).
160	<i>Erigeron blochmaniae</i>	Blochman's leafy daisy	Oceano	40	20060517	DPR-OCEANO DUNES SVRA	None	None	G2	S2	1B.2		BLM_S		GUADALUPE DUNES, VICINITY OF JACK LAKE & LETTUCE LAKE, ABOUT 4 MILES SOUTH OF OCEANO.	3 POLYGONS MAPPED ACCORDING TO A HOWALD MAPS FROM 1979 AND 1981, AND 2006 GEVIRTZ COORDINATES. INCLUDES A 1964 HOOVER COLLECTION FROM JACK LAKE.	GROWING IN BACKDUNE SCRUB ON SAND WITH HALOPAPPUS ERICOIDES, LUPINUS CHAMISSONIS, ERIOGONUM PARVIFOLIUM, AND CORETHROGYNE FILAGINIFOLIA.	ORV USE AND ILLEGAL HUNTING.
161	<i>Danaus plexippus</i> pop. 1	monarch - California overwintering population	Point Sal	500	19910118	19900202 UNKNOWN	None	None	G4T2T3	S2S3			USFS_S		ABOUT 0.75 MI SE OF MUSSEL POINT AND 1.25 MI N OF POINT SAL, 11.3 MI W OF THE SANTA MARIA AIRPORT.	1990: MAPPED TO CLUSTER DETECTION LOCATION, IN N-MOST AND LARGEST OF FOUR NEARBY GROVES. 1991: INDIVIDUAL FLYERS OBSERVED IN THE VICINITY OF ALL FOUR GROVES (S-MOST 3 GROVES NOT MAPPED). XERCES SITE #2693.	FOUR EUCALYPTUS GROVES IN DRAINAGES NORTH OF A ROCKY, EAST-WEST RIDGE; N-MOST GROVE ADJACENT TO A MUDDY, FLAT WETLAND. 2011: ACCESSIBLE ONLY ON FOOT SINCE ROAD WASHOUT IN 1998. THESE ARE LIKELY AUTUMNAL STABILIZED BACKDUNES & RIDGES ON INTERFACE BETWEEN WILLOW & GRASS/SHRUB-DOMINATED COMMUNITIES.	OBSERVED IN THIS AREA BEFORE 1990 (OCT 1983). ON 2 FEBRUARY 1990, 5-10K MONARCHS WERE OBSERVED ROOSTING. A FEW FLYERS, NO CLUSTERS OBSERVED 18-19 JAN 1991 (UNABLE TO CHECK IN EARLIER IN SEASON). INACCESSIBLE IN 1998-1999. MAP DETAIL AT CNDDb. SEVERAL RARE PLANTS IN AREA. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BA CKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.
162	Central Dune Scrub	Central Dune Scrub	Point Sal	360	19800725	19800725 UNKNOWN	None	None	G2	S2.2					ALONG STREAM APPROX 0.6 MILE EAST OF MUSSEL ROCK.		ON OIL LEASE LAND.	COLLECTED BY MORRIS E. CARUTHERS (NO DATE GIVEN), PROBABLY ABOUT 1930-40; ONE EMPTY SHELL, FRESH-APPEARING. NO SPECIMENS FOUND IN 1970 OR 2 NOV 1979; KELLOGG BELIEVES THAT TRYONIA IMITATOR HAS BEEN EXTIRPATED AT THIS SEE
163	<i>Tryonia imitator</i>	mimic tryonia (=California brackishwater snail)	Oceano	0	19791102	XXXXXXX DPR-PISMO SB	None	None	G2	S2			IUCN_DD		MOUTH OF LAGOON AT OCEANO.		HABITAT WAS FRESHWATER ON 2 NOV 1979.	WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BA CKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.
164	Central Dune Scrub	Central Dune Scrub	Oceano	20	19810923	19810923 DPR-PISMO SB	None	None	G2	S2.2					NIPOMO DUNES, WEST OF OSO FLACO LAKE.		BOUNDARY GENERALIZED FROM 1981 AIR PHOTO; LITTLE INFO ON COMPOSITION, SITE FORMERLY PASTED BY ORVS. UNABLE TO CONVERT TO FLORISTIC CLASSIFICATION, LACKS SPP. INFO.	BEGAN RECOVERY FOLLOWING ORV EXCLUSION IN 1982.

165	Lichnanthe albipilosa	white sand bear scarab beetle	Point Sal	18	19720520	19720520 PVT-UNION OIL	None	None	G1	S1							DUNE LAKES, 7 MI S OCEANO.		LITTLE IS KNOWN REGARDING THIS BEETLE'S LIFE HISTORY. COLLECTED IN SWAMP AMONG DENSE GROWTH OF SCIRPUS AND SPARGANIUM. WILLOW THICKETS AND BULLRUSHES SURROUNDING LAKE IN 1987.	THREATS INCLUDE DEVELOPMENT & ORV USE IN THE DUNES.	MALE HOLOTYPE COLLECTED FROM COREOPSIS SP., CAS #13332. MAIN SOURCE OF INFORMATION FOR THIS OCCURRENCE IS A 1947 COLLECTION BY HOOVER. NO PLANTS FOUND IN 1987 AND NO HABITAT REMAINS, ACCORDING TO MCLEOD. ONLY SOURCE OF INFORMATION FOR THIS SITE IS 1987 MCLEOD COMMENT: "'SITE AT THE ARROYO GRANDE CEMETERY IS EXTIRPATED.'" UNKNOWN WHEN PLANTS SEEN.
166	Arenaria paludicola	marsh sandwort	Oceano	60	19870618	19470802 PVT	Endangered	Endangered	G1	S1	1B.1		SB_SBBG				NEAR SMALL TWIN LAKE, SOUTH OF ARROYO GRANDE.			ACTIVITY OF MAINTAINING LAKES HAS REDUCED/ELIMINATED HABITAT.	
167	Clarkia speciosa ssp. immaculata	Pismo clarkia	Oceano	120	XXXXXXX	XXXXXXX PVT	Endangered	Rare	G4T1	S1	1B.1		SB_RSABG; SB_SBBG				ARROYO GRANDE CEMETERY, ARROYO GRANDE.	EXACT LOCATION UNKNOWN, MAPPED BY CNDDB AS A BEST GUESS.			
168	Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	Oceano	60	198008XX	198008XX UNKNOWN	None	None	G3	S2.1							BLACK LAKE CANYON APPROXIMATELY 2 MILES SOUTH OF OCEANO.	MARSH IS ALONG HIGHWAY 1 AT BASE OF CANYON. EXACT LOCATION UNKNOWN. SITE IS BASED ON 1937 EASTWOOD TYPE COLLECTION FROM "NIPOMO MESA, NOT FAR FROM THE SMALL POND WHERE THE YELLOW WATER LILIES GROW." HOWELL & JONES SUGGEST THIS POND WAS EAST OF HWY 1, JUST NORTH OF CALLENDER ROAD.	SLOW-MOVING STREAMS FROM SEVERAL FRESHWATER MARSHES WITH TYPHA SP DOMINANT AND RIMMED BY SCIRPUS ACUTUS.	HWY 1 CROSSES THE WESTERN END AND RESIDENTIAL DEVELOPMENT IS BEGINNING TO ENCROACH.	SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BA CKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES. TYPE LOCALITY: COLLECTED IN 1937, ADDITIONAL EASTWOOD COLLECTIONS FROM 1940 & 1941 ALSO ATTRIBUTED HERE. BLACK LAKE AREA SEARCHED IN 1980 & 1984, NO PLANTS FOUND. LILY POND AREA (JUST EAST OF HWY 1) SEARCHED IN 1988, NO PLANTS FOUND. SCARCE IN 1946. MCLEOD HAS BEEN TO SITE OFTEN TO SURVEY CLARKIA SPECIOSA SSP. IMMACULATA AND HAS NEVER SEEN CALOCHORTUS OBISPOENSIS AT THIS SITE. HE THINKS IT WOULD BE MORE VISIBLE AFTER A FIRE, AS IN 1946.
169	Lupinus nipomensis	Nipomo Mesa lupine	Oceano	0	19880401	19410421 UNKNOWN	Endangered	Endangered	G1	S1	1B.1		SB_SBBG				EAST OF HIGHWAY 1 IN BLACK LAKE CANYON, EAST OF BLACK LAKE, NIPOMO MESA.		DENSE CENTRAL COAST DUNE SCRUB OBSERVED IN THIS VICINITY IN 1988.	HABITAT TOO DENSE IN 1988; DEVELOPMENT HAS ELIMINATED SOME HABITAT IN THIS AREA.	
170	Calochortus obispoensis	San Luis mariposa-lily	Arroyo Grande NE	600	19880705	19460623 PVT	None	None	G2	S2	1B.2		BLM_S; SB_SBBG; USFS_S				SUMMIT AT HEAD OF CARPENTER CANYON, NORTH OF ARROYO GRANDE.		FOUND ON SANDSTONE OUTCROP AT TOP OF BURNED-OVER HILL.		
171	Delphinium parryi ssp. blochmaniae	dune larkspur	Oceano	200	19690425	19690425 UNKNOWN	None	None	G4T2	S2	1B.2		BLM_S				STATE HIGHWAY 1, 5-3 MILES SOUTH OF JUNCTION WITH HALCYON ROAD, SOUTH OF ARROYO GRANDE.	EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDB ALONG HIGHWAY 1 AROUND 5.3 ROAD MILES SOUTH OF HALCYON ROAD. MAPPED ALONG CHESAPEAKE PLACE FROM CAMINO PERILLO WEST TO ZENON WAY BASED MAINLY ON LOCATION DESCRIPTION FROM MCLEOD IN 1988. AN UNDATED REPORT MENTIONS THAT A. RUDIS WAS THE DOMINANT JUST NORTH OF CHESAPEAKE PLACE BUT IT IS NOW EXTIRPATED. SEVERAL COLONIES MAPPED IN THIS AREA AS THREE POLYGONS. MOSTLY LOCATED AS VERTICAL BAND THRU MIDDLE OF SECTION WITH SMALL OUTLIER TO THE EAST.	SANDY FIELD. GROWING WITH ERICAMERIA ERICOIDES, ERIOGONUM PARVIFOLIUM, CROTON CALIFORNICUS, ERIASTRUM DENSIFLORUM, QUERCUS AGRIFOLIA, PTERIDIUM AQUILINUM, RHAMNUS CALIFORNICA, R. CROCEA, AND MIMULUS AURANTIACUS. ON N AND S-FACING SLOPES.	PORTIONS OF POPULATION HAVE BEEN IMPACTED BY DEVELOPMENT AND AGRICULTURAL CONVERSION (AVOCADO ORCHARDS), NON-NATIVES.	ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1969 DOTY COLLECTION. NEEDS FIELDWORK.
172	Arctostaphylos rudis	sand mesa manzanita	Oceano	400	20160523	20160523 PVT	None	None	G2	S2	1B.2		BLM_S				NORTH OF BLACK LAKE CANYON ALONG CHESAPEAKE PLACE, ABOUT 1 MILE SSW OF LOS BERROS, NIPOMO MESA.				300 PLANTS OBSERVED IN 1988. UNKNOWN NUMBER OBSERVED AT EAST END OF SITE IN 2014. 2 PLANTS OBSERVED AT WEST END OF SITE IN 2016.
173	Erigeron blochmaniae	Blochman's leafy daisy	Point Sal	400	1990XXXX	1990XXXX UNKNOWN	None	None	G2	S2	1B.2		BLM_S				NORTH OF POINT SAL AND SOUTHEAST OF MUSSEL POINT.				LOCALLY COMMON IN 1990. FEWER THAN 10 PLANTS OBSERVED IN 1981, 10-50 PLANTS IN 1984. UNKNOWN NUMBER IN 1986. 20 PLANTS SEEN IN 1988 ON S SIDE OF BIG TWIN LAKE AND SMALL TWIN LAKE. NE END OF BIG TWIN LAKE: ~245 PLANTS IN 2017. NW END OF SMALL TWIN LAKE: 41 IN 2018. MAIN SOURCE OF INFO FOR THIS SITE IS A 1961 HALLER COLLECTION, PLANTS NOTED AS "ABUNDANT." A 1933 KECK COLLECTION AND A 1956 TWISSELMANN COLLECTION (INTERMEDIATE BTWN SSP. SERICEA/CUNEATA) ARE ALSO ATTRIBUTED TO THIS SITE. NEEDS FIELDWORK
174	Cirsium scariosum var. loncholepis	La Graciosa thistle	Oceano	10	20180405	20180405 PVT	Endangered	Threatened	G5T1	S1	1B.1						VICINITY OF BIG TWIN LAKE AND SMALL TWIN LAKE, SOUTH OF OCEANO.	COLONIES HAVE BEEN RECORDED ALONG THE NORTH, SOUTH, AND EAST SHORE OF BIG TWIN LAKE, AND ALONG THE SOUTH SHORE OF SMALL TWIN LAKE. A 1958 SMITH COLLECTION FROM "WHITE LAKE" IS ALSO ATTRIBUTED TO THIS SITE.		THREATENED BY SPRAYING FOR POISON OAK. PORTIONS OF OCCURRENCE ARE ALONG ROAD. LACK OF WATER, ORGANIC DEBRIS, INVASIVES.	
175	Horkelia cuneata var. sericea	Kellogg's horkelia	Oceano	100	19610601	19610601 UNKNOWN	None	None	G4T1?	S1?	1B.1		USFS_S				ADJACENT TO HIGHWAY 1, 3.3 ROAD MILES NW OF JUNCTION WITH ROAD TO OSO FLACO LAKE, ~6.5 ROAD MI S OF ARROYO GRANDE.	MAPPED BY CNDDB AS A BEST GUESS. ALSO INCLUDES COLLECTIONS FROM "5.5 MILES SOUTH OF OCEANO ON ROAD TO GUADALUPE" AND "NIPOMO MESA, 1/2 MILE EAST OF THE UNION OIL REFINERY." MAPPED TO INCLUDE POINTS FROM SHAPEFILES OF NEST SITES DOCUMENTED SINCE 1998. MAIN NESTING AREAS AT OCCURRENCE #52. THIS OCCURRENCE INCLUDES NEST SITES 004-99, 004-00, 005-98, 017-98, 035-03, & 120-15.	OPEN SANDY FIELD ADJACENT TO HIGHWAY. COASTAL CHAPARRAL ASSOCIATION.		
176	Charadrius alexandrinus nivosus	western snowy plover	Oceano	27	2015XXXX	2015XXXX DPR-OCEANO DUNES SVRA	Threatened	None	G3T3	S2S3		SSC	NABCI_RWL; USFWS_BCC				OCEANO DUNES SVRA, FROM ABOUT 1.3-1.8 MILES SW OF 22ND ST AT SILVER SPUR PL, OCEANO.		COASTAL DUNE HABITAT USED FOR OVERWINTERING AS WELL AS NESTING. REVEGETATION AND OTHER RESTORATION ACTIVITIES ARE ONGOING.	OFF-ROAD VEHICLES (1980S-2016). ROADWORK, GRAZING, SPRAYING, TRAMPLING, OIL DRILLING. SW POLYGON ELIMINATED BY CONSTRUCTION BASED ON 2015 AERIAL PHOTOS.	300+ PLANTS SEEN IN 1983, 2000+ PLANTS IN 1987. POPULATION SEEN BY MCLEOD IN 1996 - SAME SIZE AS IN PAST YEARS. "LARGE COLONY" IN VICINITY IN 1998. COLLECTED IN SW POLYGON IN 2008. SEEN IN OIL FIELDS IN 2009 & 2011. MALE HOLOTYPE AND FEMALE ALLOTYPE, DEPOSITED AT UCR. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BA CKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.
177	Clarkia speciosa ssp. immaculata	Pismo clarkia	Arroyo Grande NE	300	20110514	20110514 PVT, UNKNOWN	Endangered	Rare	G4T1	S1	1B.1		SB_RSABG; SB_SBBG				PRICE CANYON, 1 MILE SOUTH OF EDNA. OCEANO.	POPULATION ALSO EXTENDS ON TO PXP OIL FIELD. 3 POLYGONS MAPPED ACCORDING TO MAPS FROM 1983 AND 1987, AND 2008 CARROLL COORDINATES. BEACH DUNES MAPPED.	OAK WOODLAND WITH QUERCUS AGRIFOLIA ON SANDSTONE/TAR SAND. FOUND IN SAND DUNES.		
178	Ablautus schlingeri	Oso Flaco robber fly	Oceano	25	19620811	19620811 DPR-PISMO SB	None	None	G1	S1											
179	Coastal and Valley Freshwater Marsh	Coastal and Valley Freshwater Marsh	Pismo Beach	10	197510XX	197510XX DPR-PISMO SB	None	None	G3	S2.1							PISMO LAKE, NORTH OF GROVER CITY.		SCIRPUS SPP & TYPHA SPP. GROWING AMONG CHAMISE CHAPARRAL (HOLLAND AND OYLER, 1995) WITH ARTEMISIA CALIFORNICA, RHAMNUS CALIFORNICA, AND BACCHARIS PILULARIS (SCHREIBER, 1938).	SURROUNDED BY HOUSING; RECENTLY DEGRADED BY SILTATION.	
180	Calochortus obispoensis	San Luis mariposa-lily	Arroyo Grande NE	200	1995XXXX	1995XXXX UNKNOWN	None	None	G2	S2	1B.2		BLM_S; SB_SBBG; USFS_S				MOUTH OF CANYON NUMBER 1 NEAR GROVER CITY, NORTH OF ARROYO GRANDE.	NORTH END OF PROPOSED LOS ROBLES DEL MAR DEVELOPMENT; WEST OF OAK PARK BLVD AT JUNCTION WITH NOYES ROAD.	THE RARE CLARKIA SPECIOSA SSP. IMMACULATA AND ARCTOSTAPHYLOS WELLSII ARE FOUND NEARBY. PLANTS ALONG THE EDGE OF THE OAK WOODLAND THROUGH THE CHAPARRAL, AND IN GRASSLAND. WITH NASSELLA PULCHRA AND AVENA BARBATA. ARCTOSTAPHYLOS WELLSII AND CALOCHORTUS OBISPOENSIS ALSO REPORTED FROM THIS SITE. 160-360 FT ELEVATION. GROWING AMONG COASTAL LIVE OAKS (HOLLAND AND OYLER, 1995) AND IN CHAPARRAL WITH ARTEMISIA CALIFORNICA, RHAMNUS CALIFORNICA, AND BACCHARIS PILULARIS (SCHREIBER, 1938). THE RARE CLARKIA SPECIOSA SSP. IMMACULATA IS FOUND NEARBY.	DEVELOPMENT MAY THREATEN PLANTS AT THIS SITE.	5 PLANTS OBSERVED AT THIS SITE IN 1995, AN 1895 COLLECTION BY SOWE FROM ARROYO GRANDE IS ALSO ATTRIBUTED TO THIS SITE.
181	Clarkia speciosa ssp. immaculata	Pismo clarkia	Arroyo Grande NE	260	20060525	20060525 CITY OF PISMO BEACH	Endangered	Rare	G4T1	S1	1B.1		SB_RSABG; SB_SBBG				NORTHWEST OF ARROYO GRANDE; 0.8-1.1 MILES NORTH OF HWY 101, WEST SIDE OF OLD OAK PARK ROAD.	POLYGON MAPPED BY CNDDB REPRESENTS SENSITIVE HABITAT FOUND ON PROJECT SITE; CLARKIA WAS FOUND WIDELY SCATTERED WITHIN THIS AREA. PART OF LOS ROBLES DEL MAR DEVELOPMENT.		PROPOSED LOS ROBLES DEL MAR RESIDENTIAL DEVELOPMENT WOULD IMPACT PLANTS FOUND HERE.	ABOUT 3000 PLANTS OBSERVED DURING 1995 CENSUS. PLANTS NOTED AS "'OCCASIONAL'" IN 2006. 10 PLANTS OBSERVED AT THIS SITE IN 1995. 1938 SCHREIBER COLLECTION AND 1990 KEIL COLLECTION ARE ALSO ATTRIBUTED TO THIS SITE. THIS SPECIES IS APPARENTLY MORE COMMON ON NEARBY SITES. THIS OCCURRENCE WAS PREVIOUSLY A. WELLSII OCCURRENCE #7.
182	Arctostaphylos pilosula	Santa Margarita manzanita	Arroyo Grande NE	200	1995XXXX	1995XXXX UNKNOWN	None	None	G2?	S2?	1B.2		BLM_S; SB_SBBG; USFS_S				MOUTH OF CANYON NO. 1 NEAR GROVER CITY, NORTH OF ARROYO GRANDE.	NORTH END OF PROPOSED LOS ROBLES DEL MAR DEVELOPMENT; WEST OF OAK PARK BLVD AT JUNCTION WITH NOYES ROAD. EXACT LOCATION UNKNOWN. MAPPED AS BEST GUESS BY CNDDB 1.1 MILES NE OF THE TOWN OF PISMO BEACH ALONG PRICE CANYON ROAD. GIVEN ELEVATION IS 250 FEET WHICH SUGGESTS COLLECTION WAS NOT MADE IN CANYON BUT HIGHER UP ON SLOPES. COLLECTION LABEL SAYS "'0.7 MILE SOUTHWEST FROM NOYES ROAD ON STATE ROUTE 227'" BUT HIGHWAY 227 DOES NOT GO IN A SW DIRECTION FROM ITS JUNCTION WITH NOYES RD. MAPPED BY CNDDB AS BEST GUESS 0.7 MILE SE FROM NOYES ROAD ON HIGHWAY		DEVELOPMENT THREATENS; PROPOSED MITIGATION WOULD AVOID IMPACTS TO THE SPECIES.	
183	Horkelia cuneata var. puberula	mesa horkelia	Pismo Beach	250	19360319	19360319 UNKNOWN	None	None	G4T1	S1	1B.1		USFS_S				1.1 MILES NE OF PISMO.				SITE BASED ON A 1936 CARLSON COLLECTION. 1911 COLLECTIONS FROM PRICE CANYON ARE ALSO ATTRIBUTED TO THIS SITE. NEEDS FIELDWORK.
184	Arctostaphylos rudis	sand mesa manzanita	Arroyo Grande NE	500	19671012	19671012 UNKNOWN	None	None	G2	S2	1B.2		BLM_S				0.7 MILE SE FROM NOYES ROAD ON HIGHWAY 227, ARROYO GRANDE.				ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 1967 GANKIN COLLECTION. NEEDS FIELDWORK. PRESENCE OF A POPULATION DOCUMENTED IN A 1976 PAPER. HOWEVER THIS PAPER ALSO NOTES THAT BEETLES HAVE NOT BEEN FOUND "'FOR ABOUT 20 YEARS'" (SINCE MID 1950'S?) AND MAY BE EXTIRPATED AT THIS SITE. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BA CKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.
185	Coelus globosus	globose dune beetle	Oceano	40	XXXXXXX	XXXXXXX DPR-PISMO SB	None	None	G1G2	S1S2			IUCN_VU				PISMO BEACH.	LOCATION GIVEN ONLY AS PISMO BEACH, MAPPED TO THE CENTRAL FOREDUNES COMMUNITY WEST OF GRAND AVE IN GROVER CITY AND EXTENDING 1 MILE TO THE NORTH AND SOUTH.	ABRONIA LATIFOLIA, A. MARITIMA, MALACOTHRIX INCANA, CAKILE CARPROBROTUS, CALYSTEGIA SOLDANELLA, AMBROSIA CHAMISSONIS NOTED FOR FORDUNE COMMUNITY.	HEAVY RECREATIONAL AND ORV USE.	
186	Central Foredunes	Central Foredunes	Oceano	40	19801010	19801010 DPR-PISMO SB	None	None	G1	S1.2							DUE WEST OF GRAND AVE IN GROVER CITY AND EXTENDING ONE MILE IN BOTH THE NORTH AND SOUTH DIRECTIONS.	AREA BORDERED BY THE BEACH TO THE WEST AND DUNE SCRUB TO THE EAST.	ABRONIA LATIFOLIA, A. MARITIMA, MALACOTHRIX INCANA, CAKILE CARPROBROTUS, CALYSTEGIA SOLDANELLA, AMBROSIA CHAMISSONIS. DURING A 1978 SURVEY THE HABITAT WAS DEEMED NO LONGER SUITABLE DUE TO DEVELOPMENT AND/OR HUMAN ACTIVITY.	HEAVY RECREATIONAL AND ORV USE.	
187	Charadrius alexandrinus nivosus	western snowy plover	Pismo Beach	120	1978XXXX	19650426 DPR-PISMO SB	Threatened	None	G3T3	S2S3		SSC	NABCI_RWL; USFWS_BCC				PISMO STATE BEACH; 500 YARDS EAST OF OCEAN, 800 YARDS WNW OF CAMPGROUND.				3 EGGS SEEN ON EACH OF TWO NESTS ON SAND DUNES IN 1965. DURING A MAY TO JULY 1978 SURVEY NO BIRDS WERE OBSERVED. HISTORICAL RECORDS. 3 COLLECTED 7 JUN 1916; 2 COLLECTED 31 JUL 1924; UNKNOWN NUMBER COLLECTED 12 JUN 1939; 6 COLLECTED 3 SEP 1955. SEE WWW.DFG.CA.GOV/BIOGEODATA/VEGCAMP/NATURAL_COMM_BA CKGROUND.ASP TO INTERPRET AND ADDRESS THE PRESENCE OF RARE COMMUNITIES.
188	Cicindela hirticollis gravida	sandy beach tiger beetle	Pismo Beach	10	19550903	19550903 DPR-PISMO SB	None	None	G5T2	S2							PISMO BEACH.				
189	Central Foredunes	Central Foredunes	Oceano	40	19801010	19801010 UNKNOWN	None	None	G1	S1.2							SOUTHWEST OF CIENEGA VALLEY & WNW OF DUNE LAKES ALONG COAST.	TWO AREAS OF FOREDUNE VEGETATION BORDERED BY OPEN BEACH AND ACTIVE SAND DUNES.		HEAVY RECREATIONAL USE.	
190	Monardella undulata ssp. undulata	San Luis Obispo monardella	Oceano	80	20110704	20110704 PVT	None	None	G2	S2	1B.2		BLM_S				VICINITY OF COREOPSIS HILL, ABOUT 0.3 MILE SOUTH TO 1.3 MILE SOUTHEAST OF OSO FLACO LAKE, WEST OF SANTA MARIA VALLEY.	EIGHT COLONIES MAPPED ALONG THE NORTH END OF THE GUADALUPE DUNES INCLUDING COREOPSIS HILL.	CAKILE CAPROBROTUS, ABRONIA LATIFOLIA, AMBROSIA CHAMISSONIS, LOTUS SCOPARIUS, ERIOGONUM PARVIFOLIUM, AND LEPTODACTYLON CALIFORNICUS. HABITAT CONSISTS OF RIPARIAN, <45% OF STREAM BANK VEGETATED BY WILLOW, COTTONWOOD, POISON OAK, BLACKBERRY, NETTLE, AND SEDGES. STREAM INHABITED BY STEELHEAD (SOUTH / CENTRAL ESU).	IN CENTRAL DUNE SCRUB ON OLDER, STABILIZED DUNES WITH COREOPSIS GIGANTEA, ERICAMERIA ERICOIDES, LUPINUS CHAMISSONIS, AND LEPTODACTYLON CALIFORNICUS. INVADING THE HABITAT. ILLEGAL ORVS ON THIS SLOPE.	100+ PLANTS OBSERVED IN 1985, "MANY" PLANTS OBSERVED IN 1995, 325 PLANTS OBSERVED IN 1998, MENTIONED AS "SCARCE" IN 2008, SCATTERED COLONIES OBSERVED IN 2011. INCLUDES FORMER OCCURRENCE #33.
191	Rana draytonii	California red-legged frog	Arroyo Grande NE	140	19990912	19990912 PVT	Threatened	None	G2G3	S2S3		SSC	IUCN_VU				ARROYO GRANDE CREEK, 1 MILE EAST OF THE INTERSECTION OF CORBIT CANYON ROAD AND UPPER ARROYO GRANDE ROAD, ARROYO GRANDE.				1 ADULT OBSERVED ON 12 SEP 1999; MANY MORE EXPECTED TO BE IN THE AREA.











300	Ceanothus impressus var. nipomensis	Nipomo Mesa ceanothus	Arroyo Grande NE	550	XXXXXXX	XXXXXXX	PVT	None	None	G3T2	S2	1B.2			NW END OF VETTER LANE, SE OF PRICE CANYON, EAST OF PISMO BEACH.	GODFREY PARCEL. MAPPED ACCORDING TO A 2009 LFR INC MAP. ON THE SECTION LINE BETWEEN THE SW 1/4 OF SECTION 5 AND THE NW 1/4 OF SECTION 8. BLACK LAKE CANYON CALLENDER PROPERTY. MAPPED ACCORDING TO 2010 BANIAGA COORDINATES, IN THE NW 1/4 OF THE NW 1/4 OF SECTION 8. "80 M FROM SOUTH REFUGE BOUNDARY. MAPPED IN THE NE 1/4 OF THE NE 1/4 OF SECTION 31 ACCORDING TO 2013 ELVIN COORDINATES. INCLUDES COLLECTIONS FROM ""DUNES NW OF GUADALUPE"" AND ""STREAM NEAR GUADALUPE SAND DUNES.""	NEAR ROADSIDE. COAST LIVE OAK WOODLAND.		ONE PLANT OBSERVED. UNKNOWN WHEN OBSERVED; SURVEYS PERFORMED IN THIS AREA IN 1996, 2003, 2007, AND 2008.	
301	Ceanothus impressus var. nipomensis	Nipomo Mesa ceanothus	Oceano	90	20100331	20100331	PVT	None	None	G3T2	S2	1B.2			150 METERS EAST OF HIGHWAY 1 INTERSECTING CALLENDER ROAD, BLACK LAKE CANYON.		SOIL SANDY. AT EDGE OF BACCHARIS PILULARIS STAND GRADING INTO ANNUAL GRASSLAND.		OCCASIONAL"" IN 2010. MAIN SOURCE FOR THIS SITE IS A 2013 ELVIN COLLECTION, PLANTS NOTED AS "OCCASIONAL" IN 2013. ALSO INCLUDES A 1933 PURER COLLECTION (INTERMEDIATE BTWN SSP. SERICEA AND CUNEATA ACCORDING TO ERTTER) AND 1938 DEMAREE COLLECTION.	
302	Horkelia cuneata var. sericea	Kellogg's horkelia	Guadalupe	55	20130809	20130809	USFWS-GUADALUPE-NIPOMO DUNES	None	None	G4T1?	S1?	1B.1	USFS_S		GUADALUPE-NIPOMO DUNES NWR, NORTH OF SANTA MARIA RIVER, COLORADO POND, NORTHWEST OF GUADALUPE.		COASTAL DUNE SWALE SCRUB, SAND AND PEAT SOILS. WITH SALIX LASIOLEPIS, BACCHARIS PILULARIS, AND JUNCUS. GRASSLAND WITH SCATTERED SHRUBS AND SANDY SOILS. THE SITE HAS BEEN USED AS PASTURE LAND THUS DISTURBANCE IS EVIDENT.			
303	Clarkia speciosa ssp. immaculata	Pismo clarkia	Arroyo Grande NE	400	20030605	20030605	PVT	Endangered	Rare	G4T1	S1	1B.1	SB_RSABG; SB_SBBG		EAST SIDE OF CORBIT CANYON, HILLSIDE OPPOSITE DEER CANYON.	MAPPED IN THE NE 1/4 OF THE NW 1/4 OF SECTION 11.		PASTURE LAND. ONE SHRUB MAY BE IMPACTED AND/OR REMOVED FOR DEVELOPMENT OF AN ADDITION TO A SINGLE FAMILY RESIDENCE. FIRE.	~500 INDIVIDUALS OBSERVED IN 2003.	
304	Arctostaphylos rudis	sand mesa manzanita	Arroyo Grande NE	400	20110606	20110606	PVT	None	None	G2	S2	1B.2	BLM_S		ALONG BEAR CANYON LANE, BETWEEN CORBIT CANYON AND CARPENTER CANYON, NE OF ARROYO GRANDE.	MAPPED ACCORDING TO 2011 TERRA VERDE ENVIRONMENTAL CONSULTING COORDINATES, IN THE NW 1/4 OF THE NE 1/4 OF SECTION 15.			3 SHRUBS (2 MATURE AND 1 IMMATURE) OBSERVED IN 2011.	
305	Anniella pulchra	northern California legless lizard	Oceano	94	19600530	19600530	PVT	None	None	G3	S3		SSC	USFS_S	NORTHEAST CORNER OF FARROLL AVE AND BEECH ST, ABOUT 0.9 MILES SOUTH OF HWY 101 AT HALCYON RD, ARROYO GRANDE.	LOCATION GIVEN AS 451 BEECH STREET.		DEVELOPMENT.	ONE COLLECTED ON 30 APR 1960. LIKELY EXTIRPATED DUE TO RESIDENTIAL DEVELOPMENT OCCURING SINCE THE TIME OF THIS COLLECTION.	
306	Arctostaphylos rudis	sand mesa manzanita	Oceano	390	20080502	20080502	PVT	None	None	G2	S2	1B.2	BLM_S		JUST SOUTH OF THE JUNCTION OF WILLOW AND HETRICK ROADS, ABOUT 2 AIR MILES NW OF NIPOMO.	MAPPED ACCORDING TO 2008 LANGLE COORDINATES, IN THE NORTH 1/2 OF THE SE 1/4 OF SECTION 12. 1986 SURVEY REPORTS PLANTS AS 100 YARDS SOUTH OF THE RIVER AND 0.375 MILE EAST OF BEACH. MAPPED ACCORDING TO 2013 BLUNDELL COORDINATES, SLIGHTLY FURTHER AWAY FROM THE RIVER.	OPEN GRASSY FIELD ON PRIVATE PROPERTY. AREA IS MOWED (LIKELY FOR FIRE CONTROL). OAK WOODLAND AND NON-NATIVE ANNUAL GRASSLAND SURROUND PLANT.	POSSIBLE MOWING.	1 MATURE PLANT OBSERVED IN 2008.	
307	Monardella undulata ssp. crispa	crisp monardella	Point Sal	59	20131231	20131231	SBA COUNTY DPR-OCEANO	None	None	G3T2	S2	1B.2	BLM_S		DUNES AT MOUTH OF SANTA MARIA RIVER, JUST SOUTH OF RIVER AND ABOUT 0.3 MILE EAST OF BEACH, WEST OF GUADALUPE. 0.4 MILE NW OF JACK LAKE, OCEANO DUNES STATE VEHICULAR RECREATION AREA, WEST OF NIPOMO.		ON BACK DUNES AWAY FROM SPRAY ZONE GROWING WITH MESEMBRYANTHEMUM.	PLANT LOCATED WITHIN RESTRICTED USE AREA.	20 PLANTS OBSERVED IN VICINITY IN 1986. 1 PLANT OBSERVED IN 2013; PROJECT REMOVED REMNANT SECTION OF ASPHALT ON DUNES.	
308	Anniella pulchra	northern California legless lizard	Oceano	102	20180725	20180725	DUNES SVRA	None	None	G3	S3		SSC	USFS_S				COASTAL SAND DUNE SCRUB.		1 FOUND AND PHOTOGRAPHED ON 25 JUL 2018.
309	Monardella undulata ssp. crispa	crisp monardella	Point Sal	111	20080715	20080715	SBA COUNTY	None	None	G3T2	S2	1B.2	BLM_S		GUADALUPE-NIPOMO DUNES PRESERVE, 0.4 KM SOUTH OF SANTA MARIA RIVER, 1.7 KM EAST OF PACIFIC OCEAN.	MAPPED ACCORDING TO 2008 PARIKH COORDINATES. INCLUDES COLLECTIONS FROM "S AND ADJACENT TO MAIN ST, 0.45 MI W OF THE ENTRY STATION TO GUADALUPE DUNES BEACH PARK" & "SW MARGIN OF GORDON SAND MINE, NE CORNER OF MUSSEL ROCK DUNES."	ON SAND DUNE WITH SPARSE COASTAL SAGE SCRUB VEGETATION. DEGRADED CHAMISE-BLACK SAGE CHAPARRAL COMMUNITY AT MARGIN OF COAST LIVE OAK WOODLAND. SIGNIFICANT DISTURBANCE, INCLUDING INFESTATION OF VELDT GRASS, VEGETATION MOWING ALONG ROADSIDE, & DUMPING. IN RURAL RESIDENTIAL AREA.		PLANTS NOTED AS COMMON IN 2008. A 1986 GRIFFITHS COLLECTION AND A 1987 JOKERST COLLECTION ARE ALSO ATTRIBUTED TO THIS SITE.	
310	Anniella pulchra	northern California legless lizard	Oceano	378	20160523	20160523	PVT	None	None	G3	S3		SSC	USFS_S	NORTHEAST CORNER OF ZENON WAY AT CHESAPEAKE PLACE, ARROYO GRANDE.	MAPPED TO PROVIDED COORDINATES. FORMERLY A. P. PULCHRA EO #101.		DEVELOPMENT.	1 ADULT OBSERVED ON 23 MAY 2016.	
311	Agrostis hooveri	Hoover's bent grass	Arroyo Grande NE	540	20150619	20150619	PVT	None	None	G2	S2	1B.2	BLM_S; USFS_S		APPROXIMATELY 0.8 AIR MILE NW OF JUNCTION OF CORBETT CYN RD AND VERDE CYN RD, BETWEEN CORBETT CYN AND CARPENTER CYN.	MAPPED ACCORDING TO 2015 KEIL COORDINATES, IN THE NORTH 1/2 OF THE NW 1/4 OF SECTION 3.		CONTINUED CLEARING, CONSTRUCTION, INVASION BY VELDT GRASS & OTHER WEEDS. LANDOWNER HAS DONE MAJOR UNAUTHORIZED GRADING.	ABOUT 20 PLANTS OBSERVED IN 2015.	
312	Arctostaphylos pilosula	Santa Margarita manzanita	Arroyo Grande NE	540	20150619	20150619	PVT	None	None	G2?	S2?	1B.2	BLM_S; SB_SBBG; USFS_S		APPROXIMATELY 0.8 AIR MILE NW OF THE JUNCTION OF CORBETT CANYON RD WITH VERDE CANYON RD, NORTH OF ARROYO GRANDE.	MAPPED ACCORDING TO 2015 KEIL COORDINATES.		CONTINUED CLEARING, CONSTRUCTION ACTIVITY, INVASION BY VELDT GRASS AND OTHER WEEDS.	FEWER THAN 200 PLANTS OBSERVED IN 2015. THE LANDOWNER HAS DONE MAJOR UNAUTHORIZED GRADING.	
313	Horkelia cuneata var. puberula	mesa horkelia	Arroyo Grande NE	540	20150619	20150619	PVT	None	None	G4T1	S1	1B.1	USFS_S		APPROXIMATELY 0.8 AIR MILE NW OF JUNCTION OF CORBETT CYN RD AND VERDE CYN RD, BETWEEN CORBETT CYN AND CARPENTER CYN.	GROWING UNDER AND AROUND OAKS AND IN CHAPARRAL. MAPPED ACCORDING TO 2015 KEIL COORDINATES.		CONTINUED CLEARING, CONSTRUCTION, INVASION BY VELDT GRASS & OTHER WEEDS. LANDOWNER HAS DONE MAJOR UNAUTHORIZED GRADING.	FEWER THAN 100 PLANTS OBSERVED IN 2015.	
314	Clarkia speciosa ssp. immaculata	Pismo clarkia	Arroyo Grande NE	540	20150619	1998XXXX	PVT	Endangered	Rare	G4T1	S1	1B.1	SB_RSABG; SB_SBBG		APPROXIMATELY 0.8 AIR MILE NW OF JUNCTION OF CORBETT CYN RD AND VERDE CYN RD, BETWEEN CORBETT CYN AND CARPENTER CYN. 1 MILE N OF OSO FLACO LAKE, 1.7 MILES WSW OF HIGHWAY 1 AT CALLENDER RD, OCEANO DUNES STATE VEHICULAR RECREATION AREA.	MAPPED ACCORDING TO 2015 KEIL COORDINATES, PRESUMABLY BASED ON SITE DESCRIPTION OR MAP FROM 1998 MCLEOD OBSERVATION.		CONTINUED CLEARING, CONSTRUCTION, INVASION BY VELDT GRASS & OTHER WEEDS. LANDOWNER HAS DONE MAJOR UNAUTHORIZED GRADING.	UNKNOWN NUMBER OF PLANTS FOUND ON SITE IN 1998 BY MCLEOD. NO PLANTS FOUND BY KEIL IN 2015, PRESUMABLY DUE TO HABITAT DESTRUCTION.	
315	Anniella pulchra	northern California legless lizard	Oceano	43	20180528	20180528	DPR-OCEANO DUNES SVRA	None	None	G3	S3		SSC	USFS_S				COASTAL SAND DUNE SCRUB. CHAPARRAL ON DEPAUPERATE SOIL, INTERSPERSED AMONG DEVELOPED AREAS INCLUDING PRIVATE HOMES AND SOME POSSIBLY COMMERCIAL PROPERTY. COULD ONLY SEE AREAS IMMEDIATELY ADJACENT TO ROAD, AND DID NOT FOLLOW THE ROAD TO THE END OF THE OCCURRENCE.	ENCROACHMENT, OFF-ROAD VEHICLES.	1 FOUND AND PHOTOGRAPHED ON 28 MAY 2018. TENS OF PLANTS SEEN IN 2012. "SATELLITE PHOTOS SUGGEST POPULATION COULD BE MUCH LARGER." 1988 KNIGHT COLLECTION FROM "ON ORMONDE RD OFF OF PRICE CYN RD FROM PISMO BEACH, 510 FT" ATTRIBUTED HERE; 1000S OF PLANTS UNDER HIGH VOLTAGE LINES.
316	Arctostaphylos pilosula	Santa Margarita manzanita	Arroyo Grande NE	540	20120408	20120408	PVT	None	None	G2?	S2?	1B.2	BLM_S; SB_SBBG; USFS_S		ORMONDE ROAD 1.7 MILES FROM PRICE CANYON ROAD, ABOUT 3 MILES NE OF PISMO BEACH. BASE OF WEST SLOPE OF SMALL HILL IMMEDIATELY NORTH OF WEST FORK OF PISMO CREEK, WEST OF PRICE CANYON ROAD. NORTHERN GUADALUPE DUNES, ABOUT 2 MI SOUTH OF OSO FLACO LAKE AND 3.5 MI WEST OF HIGHWAY 1, NORTHWEST OF GUADALUPE.	MAPPED ACCORDING TO 2012 KEELAN COORDINATES, IN THE SE 1/4 OF THE NE 1/4 OF SECTION 5.				
317	Lupinus ludovicianus	San Luis Obispo County lupine	Pismo Beach	280	20070604	20070604	UNKNOWN USFWS-GUADALUPE-NIPOMO DUNES	None	None	G1	S1	1B.2	BLM_S; USFS_S		WEST FORK OF PISMO CREEK, WEST OF PRICE CANYON ROAD. NORTHERN GUADALUPE DUNES, ABOUT 2 MI SOUTH OF OSO FLACO LAKE AND 3.5 MI WEST OF HIGHWAY 1, NORTHWEST OF GUADALUPE.	MAPPED ACCORDING TO 2007 BERNSTEIN COORDINATES.	SANDY SOIL. EDGE OF OAK WOODLAND.		SITE IS BASED ON A 2007 BERNSTEIN & CARROLL COLLECTION.	
318	Monardella undulata ssp. crispa	crisp monardella	Oceano	80	1981XXXX	1981XXXX	NIPOMO DUNES	None	None	G3T2	S2	1B.2	BLM_S		GUADALUPE OIL FIELD, ABOUT 2.3 MILES NORTH OF SANTA MARIA RIVER AND 0.2 MILE ENE OF 'DEE' BENCHMARK, WEST OF GUADALUPE.	ABOUT 0.5 MILE SSW OF OSO FLACO BENCHMARK; SINGLE COLONY MAPPED AT THIS SITE.	CENTRAL COASTAL DUNE SCRUB.		UNKNOWN NUMBER OF PLANTS REPORTED BY VANDERWEIR IN 1981.	
319	Monardella undulata ssp. undulata	San Luis Obispo monardella	Point Sal	100	1981XXXX	1981XXXX	PVT	None	None	G2	S2	1B.2	BLM_S			SINGLE COLONY MAPPED.		CENTRAL COASTAL DUNE SCRUB.	UNKNOWN NUMBER OF PLANTS OBSERVED IN 1981. MAY BE THE SAME 'GUADALUPE OIL FIELDS' SITE REPORTED BY A. HOWALD (1981).	
320	Monardella undulata ssp. undulata	San Luis Obispo monardella	Point Sal	100	1981XXXX	1981XXXX	PVT	None	None	G2	S2	1B.2	BLM_S		GUADALUPE OIL FIELD, ABOUT 2 MILES NNE OF THE MOUTH OF THE SANTA MARIA RIVER, WEST OF GUADALUPE.	SINGLE COLONY MAPPED ABOUT 0.4 MILE NNW OF THE 'DEE' BENCHMARK.	CENTRAL COASTAL DUNE SCRUB.	UNKNOWN NUMBER OF PLANTS OBSERVED IN 1981. MAY BE THE SAME 'GUADALUPE OIL FIELDS' SITE REPORTED BY A. HOWALD (1981).		
321	Arctostaphylos rudis	sand mesa manzanita	Oceano	280	20050718	20050718	PVT	None	None	G2	S2	1B.2	BLM_S		QUIET OAKS DRIVE, 0.2 MILE SOUTH OF LOS BERROS ROAD AND IMMEDIATELY EAST OF POMEROY ROAD, LOS BERROS.	NEAR WATER TANK SERVICING RESIDENCE. MAPPED ACCORDING TO 2005 KEIL COORDINATES, IN THE NW 1/4 OF THE SW 1/4 OF SECTION 35.	NEAR FRINGE OF COASTAL DUNE SCRUB AND COAST LIVE OAK WOODLAND ABOVE STEEP, NORTH-FACING WOODED SLOPE. SANDY SOILS. PROPERTY IS A MOSAIC OF COAST LIVE OAK WOODLAND, RIPARIAN FRESHWATER MARSH AREA, CHAPARRAL DOMINATED BY ARCTOSTAPHYLOS PILOSULA AND DISTURBED GROUND. PLANTS FOUND IN UPLAND PORTION OF SITE AROUND FRINGE OF OAK WOODLAND AND CHAPARRAL.	SITE HAS BEEN CLEARED, DISKED, AND MOWED. SITE PROPOSED FOR LOT SPLIT. USE OF SITE BY RESIDENTS.	2 PLANTS OBSERVED IN 2005; PLANTS WERE FIRST YEAR RESPROUTS FROM SURVIVING BASAL BURLS. A 1925 COOPER COLLECTION FROM ""LOS BERROS"" AND A 1960 HOOVER COLLECTION FROM ""JUST ABOVE LOS BERROS"" ARE ALSO	
322	Horkelia cuneata var. puberula	mesa horkelia	Arroyo Grande NE	330	20100615	20100615	PVT	None	None	G4T1	S1	1B.1	USFS_S		615 ORMONDE RD, SOUTH OF INTERSECTION OF ORMONDE RD WITH PRICE CANYON RD, BETWEEN SAN LUIS OBISPO AND ARROYO GRANDE.	MAPPED ACCORDING TO COORDINATES ON 2010 KEIL COLLECTION LABEL.			ONLY SOURCE OF INFORMATION FOR THIS SITE IS A 2010 KEIL COLLECTION; ""LOCALLY COMMON"" IN 2010. "LOCALLY DOMINANT" IN 2010. 1936 WEISLANDER COLLECTION FROM "1.5 MI SW OF ASPHALT MINE, T32S R13E SEC 5, 350 FT" AND 1993 KEELEY COLLECTIONS FROM "ORMONDE RD, 1KM S OF PRICE CYN RD" ATTRIBUTED HERE. SITE WAS PREVIOUSLY A. WELLSII OCC	
323	Arctostaphylos pilosula	Santa Margarita manzanita	Arroyo Grande NE	330	20100615	20100615	PVT	None	None	G2?	S2?	1B.2	BLM_S; SB_SBBG; USFS_S		615 ORMONDE RD, SOUTH OF INTERSECTION OF ORMONDE RD WITH PRICE CANYON RD, BETWEEN SAN LUIS OBISPO AND ARROYO GRANDE.	MAPPED ACCORDING TO 2010 KEIL COORDINATES, IN THE NW 1/4 OF THE NW 1/4 OF SECTION 5.	MOSAIC COAST LIVE OAK WOODLAND, RIPARIAN-FRESHWATER MARSH AREA, CHAPARRAL. DISTURBED GROUND. HABITAT CONSISTS OF TWO AGRICULTURAL IMPOUNDMENTS (APPROX 4 FEET DEEP), WHICH ARE SPARSELY VEGETATED; SURROUNDED BY AGRICULTURAL FIELDS AND GRAZED GRASSLAND. HABITAT CONSISTS OF A FRESHWATER LAKE/POND SURROUNDED BY DUNES TO THE NORTH AND WEST, A CONOCO-PHILLIPS OIL REFINERY TO THE EAST, AND AGRICULTURAL FIELDS TO THE SOUTH. ARROYO WILLOW SERIES AROUND POND.			
324	Rana draytonii	California red-legged frog	Arroyo Grande NE	200	19950712	19950712	UNKNOWN	Threatened	None	G2G3	S2S3		SSC	IUCN_VU	JUST WEST OF THE INTERSECTION OF HUASNA ROAD AND BRANCH MILL ROAD, ARROYO GRANDE.			THREATENED BY REGULAR DRAINING FOR FARMING ACTIVITIES.	6 JUVENILE FROGS OBSERVED ON 12 JULY 1995.	
325	Emys marmorata	western pond turtle	Oceano	38	20060323	20060323	DPR-OCEANO DUNES SVRA	None	None	G3G4	S3		SSC	BLM_S; IUCN_VU; USFS_S	JACK LAKE, OCEANO DUNES STATE VEHICULAR RECREATION AREA, 4.5 MILES SOUTH OF OCEANO.			THREATENED BY A CHANGE IN VEHICULAR ACCESS, ALLOWING ORV ACCESS.	14 ADULTS OBSERVED ON 23 MAR 2006. TWO INDIVIDUALS WERE LOCATED AND IDENTIFIED. ONE INDIVIDUAL IS AT COORDIANTES GIVEN GROWING AT THE BASE OF QUERCUS AGRIFOLIA, THE OTHER WAS LOCATED 10 METERS UPSLOPE, TO THE EAST. THIS OCCURRENCE WAS PREVIOUSLY A. WELLSII OCCURRENCE #18.	
326	Arctostaphylos pilosula	Santa Margarita manzanita	Arroyo Grande NE	312	20030519	20030519	PVT	None	None	G2?	S2?	1B.2	BLM_S; SB_SBBG; USFS_S		EAST OF ARROYO GRANDE, RIDGE WEST OF POORMAN CANYON, SOUTH OF PRINTZ ROAD.	MAPPED ACCORDING TO COORDINATES PROVIDED BY ENGLAND: WGS84 N35 08' 17"" / W120 35' 01"".	OPEN AREAS OF WITHIN THE MARGINS OF A QUERCUS AGRIFOLIA WOODLAND.	FUTURE DEVELOPMENT.		







405	<i>Arenaria paludicola</i>	marsh sandwort	Oceano	50	2006XXXX	2006XXXX	DPR-PISMO SB	Endangered	Endangered	G1	S1	1B.1	SB_SBBG	NORTHEASTERN EDGE OF OSO FLACO LAKE, NIPOMO DUNES, SOUTH OF ARROYO GRANDE.	TWO ADJACENT COLONIES, MAPPED NEAR END OF THE NORTHEAST ARM OF OSO FLACO LAKE.	PEAT MARSH WITH SPARGANIUM EURYCARPUM, TYPHA LATIFOLIA, CAREX CUSICKII, BERULA ERECTA, EPILOBIUM CILIATUM, AND MIMULUS GUTTATUS. THE RARE RORIPPA GAMBELII ALSO OCCURS HERE. OPEN, SANDY AREAS IN COASTAL SCRUB DOMINATED BY MIMULUS AURANTIACUS AND ARTEMISIA CALIFORNICA AT THE EDGES OF A QUERCUS AGRIFOLIA WOODLAND WITH COASTAL SCRUB. ASPECT NW.	30% REDUCTION OF HABITAT NOTED FROM 2005-06 CAUSED BY PLANT OVERGROWTH. BIOSTIMULATION AND EUTROPHICATION IN WATERSHED.	PLANTS COLLECTED AT THIS SITE IN 1949. AREA SEARCHED IN 1987 BUT NO PLANTS SEEN BY MCLEOD. 85 PLANTS OBSERVED IN 1998. ABOUT 25 CLUMPS OBSERVED IN 2005, UNKNOWN NUMBER OBSERVED IN 2001 AND 2006.
406	<i>Chorizanthe rectispina</i>	straight-awned spineflower	Arroyo Grande NE	300	20030718	20030718	PVT	None	None	G2	S2	1B.3	BLM_S; USFS_S	JUST NORTH OF WATER TANK WEST OF NOYES ROAD AND SOUTH OF PRINTZ ROAD, EAST OF ARROYO GRANDE.		SANDY RUDERAL AREA ALONG THE SIDE OF THE ROAD, GROWING WITH AND HYBRIDIZING WITH ABOUT 75 OF THE COMMON CASTILLEJA DENSIFLORA SSP. DENSIFLORA. APPARENT HYBRIDS PRESENT HAVE LIGHT PINK BRACTS. ASSOCIATES INCLUDE VULPIA MYUROS, ETC.	FUTURE DEVELOPMENT.	550+ PLANTS OBSERVED IN THREE PATCHES IN 2003.
407	<i>Castilleja densiflora</i> var. <i>obispoensis</i>	San Luis Obispo owl's-clover	Oceano	368	20050413	20050413	UNKNOWN	None	None	G5T2	S2	1B.2	BLM_S	HALCYON ROAD, JUST WEST OF ZENON WAY, NIPOMO MESA, ARROYO GRANDE, SAN LUIS OBISPO.	MAPPED ALONG ROAD ON THE BORDER BETWEEN THE NW 1/4 OF THE NW 1/4 OF SECTION 3 AND THE NE 1/4 OF THE NE 1/4 OF SECTION 4.	ON ROCK OUTCROP ON SANDY SOIL AT THE EDGE OF COAST LIVE OAK WOODLAND AND ANNUAL GRASSLAND.	POTENTIAL RESIDENTIAL DEVELOPMENT.	9 PLANTS OBSERVED IN 2005. PRESUMABLY A LARGER POPULATION MAY BE PRESENT ON PRIVATE PROPERTY TO THE WEST.
408	<i>Scrophularia atrata</i>	black-flowered figwort	Arroyo Grande NE	190	20090609	20090609	PVT	None	None	G2?	S2?	1B.2	SB_RSABG	SOUTH OF CANADA VERDE, ABOUT 1.3 AIR MILES SSE OF EDNA.	2 POLYGONS MAPPED IN THE SOUTH 1/2 OF THE NW 1/4 OF SECTION 32.	ON ROCK OUTCROP ON SANDY SOIL AT THE EDGE OF COAST LIVE OAK WOODLAND. DOMINANTS INCLUDE AVENA BARBATA, HORDEUM SPP., ERODIUM SPP., AND BORMUS SPP. SANDY SOIL BENEATH THE OUTER CANOPY EDGE OF A COAST LIVE OAK TREE (QUERCUS AGRIFOLIA). HABITAT IS A MOSAIC OF CENTRAL MARITIME CHAPARRAL AND COAST LIVE OAK WOODLAND. ASSOCIATED WITH MEDITERRANEAN ANNUAL GRASSES, EHRHARTA CALYCINA, ETC.	POTENTIAL RESIDENTIAL DEVELOPMENT.	3 PLANTS OBSERVED IN 2009.
409	<i>Delphinium parryi</i> ssp. <i>blochmaniae</i>	dune larkspur	Arroyo Grande NE	190	20090609	20090609	PVT	None	None	G4T2	S2	1B.2	BLM_S	EAST OF PISMO CREEK, ABOUT 1 AIR MILE SOUTH OF THE INTERSECTION OF PRICE CANYON ROAD AND HIGHWAY 227.	MAPPED IN THE SW 1/4 OF THE NW 1/4 OF SECTION 32.	BETWEEN THE POND'S UPPER BANKS AND A THICKET OF MORELLA CALIFORNICA AND SALIX LASIOLEPIS. INDIVIDUALS ARE IN A DENSE, LOW-LYING LAYER OF CAREX PRAEGRACILIS AND JUNCUS PATENS. SOIL IS SANDY BUT HIGH IN ORGANIC MATTER.	POTENTIAL RESIDENTIAL DEVELOPMENT.	5 PLANTS OBSERVED IN 2009.
410	<i>Agrostis hooveri</i>	Hoover's bent grass	Oceano	450	20060612	20060612	PVT	None	None	G2	S2	1B.2	BLM_S; USFS_S	BETWEEN LOS BERROS ROAD AND DALE AVENUE, NIPOMO MESA.	MAPPED ACCORDING TO A 2006 DART MAP, IN THE NW 1/4 OF THE SE 1/4 OF SECTION 35.		VEGETATION MAINTENANCE.	2 PLANTS OBSERVED IN 2006. ADDITIONAL GOOD HABITAT IS PRESENT ON THE ESCARPMENT EAST AND WEST OF THE SUBJECT PROPERTY.
411	<i>Cirsium scariosum</i> var. <i>loncholepis</i>	La Graciosa thistle	Oceano	30	20190517	20190517	NIPOMO DUNES	Endangered	Threatened	G5T1	S1	1B.1		JUST WEST OF MYRTLE POND, SOUTH OF OSO FLACO LAKE, GUADALUPE-NIPOMO DUNES NATIONAL WILDLIFE REFUGE.	POND CREATED IN 2012. MAPPED ACCORDING TO 2019 RODDICK COORDINATES.		HERBIVORY- ALL THREE PLANTS HAD EVIDENCE OF HERBIVORY (LIKELY RABBITS). CIRSIUM VULGARE LOCATED WITHIN POND FENCE.	SEEDS COLLECTED FROM ""3 POND WEST"" (CNDDb OCCURRENCE #31) AND DISPERSED AT MYRTLE POND IN 2014. 3 PLANTS FOUND IN 2019.



**Additional Site Assessment  
Results and Conceptual Closure  
Plan – Northern Inactive Waste  
Site  
Phillips 66 Santa Maria Refinery**

July 25, 2019

Prepared for:

Phillips 66 Company  
Remediation Management  
1380 San Pablo Avenue  
Rodeo, CA 94572

Prepared by:

Stantec Consulting Services, Inc.  
3437 Empresa Drive, Suite A  
San Luis Obispo, California 93401



## Additional Site Assessment Results and Conceptual Closure Plan Northern Inactive Waste Site

Phillips 66 Santa Maria Refinery  
2555 Willow Road,  
Arroyo Grande, California 93420

July 25, 2019

Prepared for:

Phillips 66 Company  
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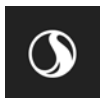
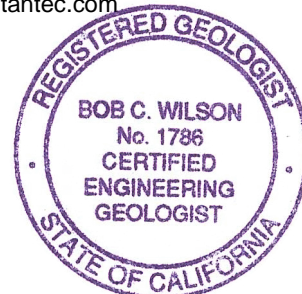
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## Executive Summary

Stantec has prepared this report summarizing the results of additional site assessment activities and to provide a Conceptual Closure Plan (CCP) for the site known as the Northern Inactive Waste Site (NIWS) located at the Phillips 66 Santa Maria Refinery (SMR) in Arroyo Grande, California. The purpose of the assessment was to further define the extent of petroleum hydrocarbons and asbestos containing materials (ACM) impacts to soil and evaluate for the presence of shallow groundwater.

The SMR was owned and operated by Unocal from 1955 to 1997. According to Unocal personnel, a NIWS was constructed and used from approximately 1955 to 1974. The former NIWS is located in a topographic low spot between two sand dunes near the entrance of the facility. Although records of NIWS operations are not available, the NIWS was reported to potentially contain refinery trash and nonhazardous debris, slop oil emulsion, API separator sludge, ACM, and domestic waste from local residents.

To evaluate the nature and extent of the waste, Environmental Solutions Inc. (ESI) advanced six exploratory trenches within the footprint of the NIWS in November 1990. Waste encountered was classified into three general categories including oily soil containing solid waste and debris, thick heavy tar-like hydrocarbons, and soil containing fibrous material assumed to represent ACM. Although the depth of the fill appeared to range from approximately 3 to 7.5 feet below ground surface (bgs), oily soil encountered in one trench extended to at least 15 feet bgs (maximum depth explored).

In 2016, Stantec reviewed historical aerial photographs to aid in evaluation of general land use in the investigation area. Aerial photographs were available in 1937 and 1957, and in approximately three to eleven-year increments from 1957 until present. Following review of the historical photographs, Stantec concluded that the NIWS may have extended further east than estimated in the previous ESI investigations.

Between September 20 and 29, 2017, 34 hand-auger borings were advanced at locations intended to further define the characteristics and extent of impacted soil. Soil samples from the hand auger borings were generally collected at 1, 3, 5, and 8-foot depth intervals. Between October 2 and 5, 2017, 17 of the hand-auger borings were advanced to greater depths using track-mounted dual tube, direct-push equipment. The borings were completed to depths ranging between 15 and 25 feet bgs.

Fine to medium-grained, poorly graded, loose dune sands comprise the predominant native soil lithology from the ground surface to the total depth explored during the investigation (up to 25 feet bgs). The presence of disposal material in several of the borings was indicated by tarry petroleum hydrocarbons, sulfur cake, metal debris, wood debris and fibrous materials. Groundwater was not encountered during assessment activities.

The assessment confirmed the contaminants of potential concern (COPC) as petroleum hydrocarbons (primarily total petroleum hydrocarbons in the oil range [TPHo]) and ACM (amosite and chrysotile). Other compounds that appear to be associated with the occurrence of TPHo included polynuclear



aromatic hydrocarbons (PAH), dioxins, and furans. The COPC were encountered at depths ranging from near surface soils to approximately 10 feet bgs. The lateral and vertical extent of TPHo and associated compounds have been adequately defined. However, ACM at concentrations of less than 1% were detected in samples from borings located within a majority of the NIWS area. Accordingly, further delineation of ACM is recommended.

Stantec performed air sampling in conjunction with the hand auger and drilling activities to quantify the concentration of airborne fibers at the perimeter of the work area. The analytical results of the air samples collected were below both the State of California Division of Occupational Safety and Health (DOSH) Permissible Exposure Limits (PELs) and the Environmental Protection Agency (EPA) indoor clearance levels.

For the purposes of this CCP, three remedial alternatives were considered to obtain closure for the former NIWS including no further action, soil containment/capping in place, and soil excavation/off-site disposal. Based on evaluation of these alternatives, Stantec recommends excavation of impacted soils as the preferred remedial action. Prior to excavation, a data gap assessment is proposed to further define the lateral and vertical extent of ACM identified from the 2017 soil assessment. This will be accomplished using a track-mounted direct-push rig to advance approximately 15 borings.

Remedial action objectives for this CCP were developed based on exposure pathways, cleanup goals, and regulatory requirements. Receptors such as workers and residents could be exposed to COPC via direct contact and inhalation of fugitive dust emissions. The proposed cleanup goals are based on the Tier I Environmental Screening Levels (ESLs) for TPHo and the other associated compounds described above (e.g. PAH, dioxins, and furans), and no detectable concentrations of ACM.

Soil remedial excavation will extend to depths ranging from approximately 3 to 10 feet bgs to meet the proposed soil cleanup goals. The areal extent of soil with COPC concentrations exceeding the soil cleanup goals is approximately 0.80 acres. As such, the total in-place volume of affected soil to be excavated, including both TPHo and ACM, is estimated to be 13,000 cubic yards (cy). Waste transport and disposal options for excavated impacted soil will be evaluated during the project permitting and planning phases. Waste management options may include transportation by rail and/or truck and disposal at either an in-state or out-of-state facility.

During the removal activities, confirmation soil sampling will be conducted by Stantec to document the final extent of the excavation. Discrete soil samples will be collected from the bottom and sidewalls of the excavation in accordance with the project sampling and analysis plan. Depending on final excavation conditions and/or Grading Permit requirements, backfilling of some of the areas may be necessary. The surface of all areas will be graded to match the design final grade. Habitat restoration will be addressed in a separate Habitat Restoration Plan. A comprehensive source area excavation completion report will be generated by Stantec following site remediation activities.



### 1.0 INTRODUCTION

Stantec Consulting Services, Inc. (Stantec), on behalf of Phillips 66 Company (Phillips 66), has prepared this report summarizing the results of further site assessment activities and to provide a Conceptual Closure Plan (CCP) associated with the site known as the Northern Inactive Waste Site (NIWS) located at the Phillips 66 Santa Maria Refinery (SMR) in Arroyo Grande, California (Figures 1 and 2). The purpose of the assessment was to further define the extent of petroleum hydrocarbons and asbestos containing materials (ACM) impacts to soil. The CCP recommends excavation of impacted soil to designated cleanup goals as the preferred remedial action at the site.

Stantec submitted a report entitled “Site Information Review and Workplan for Former Northern Landfill” to the San Luis Obispo Environmental Health Services (SLOEHS) – dated August 19, 2016 (Stantec, 2016). The report included a review of previous environmental reports pertaining to the NIWS including a preliminary site assessment report and CCP prepared by Environmental Solutions Inc (ESI). The report also included a review of historical aerial photography. Based on the results of the site information review, a workplan for additional site assessment was developed and included in the report. The SLOEHS conditionally approved the workplan in a meeting on August 24, 2016 and documented in email correspondence dated September 1, 2016. SLOEHS subsequently opted to relinquish lead environmental regulatory agency status for the project in email correspondence dated September 12, 2016. The project is not currently under lead agency oversight.

#### 1.1 PURPOSE AND WORK SCOPE

The purpose of the assessment was to further define the extent of petroleum hydrocarbons and ACM impacts to soil and evaluate the presence of shallow groundwater.

The assessment activities were performed by Stantec from September 18 through October 2, 2017. The generalized scope of work for assessment activities included the following tasks:

- Prepared a site-specific Health and Safety Plan (HASP).
- Assessed underground utility locations with assistance of Underground Service Alert (USA) and a private utility locating service.
- Conducted a Project Team kick-off and daily safety meetings.
- Conducted a biological survey for potential presence of Nipomo lupine.
- Advanced 34 hand-auger borings.
- Advanced 17 of the hand-auger borings to greater depths using dual tube direct-push technology.
- Daily air monitoring for asbestos fibers during drilling activities.
- Collected and analyzed selected soil samples.
- Prepared this assessment report and CCP.



## 2.0 BACKGROUND

### 2.1 SITE LOCATION AND DESCRIPTION

The SMR was built on the Nipomo Mesa in 1955 and is located at 2555 Willow Road, Arroyo Grande, California (Figure 1). The SMR is linked by a 200-mile pipeline to the San Francisco Refinery in Rodeo, California. The SMR receives crude oil from various sources located in Central California. The output of the refinery includes two semi-refined products, gas oil and pressure distillate, which are sent by pipeline to the San Francisco Refinery for upgrading into finished petroleum products.

The SMR was owned and operated by Unocal from 1955 to 1997. According to Unocal personnel, the NIWS was formed and used from approximately 1955 to 1974 in the location shown on Figure 1. The NIWS was located in a topographic low spot between sand dunes near the entrance of the facility. Although records of NIWS operations are not available, the NIWS was reported to potentially contain refinery trash and nonhazardous debris, slop oil emulsion, API separator sludge, ACM, and domestic waste from local residents (ESI, 1991).

### 2.2 GEOLOGIC SETTING

#### 2.2.1 Regional Geologic Setting

SMR is located on the Nipomo Mesa within the Southern Coast Ranges Geomorphic Province of California. The Southern Coast Ranges are characterized by northwest to southeast trending mountain ranges and valleys, which are separated by faults (Norris & Webb, 1990). The Nipomo Mesa triangular lobe is an elevated feature consisting of ancient sand dunes that are vegetated primarily with chaparral, oak trees, and eucalyptus trees. The Nipomo Mesa is more than four miles wide and extends inland more than 12 miles to east of Highway 101.

The dune sands directly underlying the project site consist of fine to coarse-grained, well rounded, massive sand with some silt and clay. The sands are largely composed of quartz and are loosely to slightly compacted. The older dune sands are anchored by vegetation and have a well-developed soil mantle. The older dunes have a maximum thickness of approximately 300 feet near the southern edge of Nipomo Mesa (DWR, 2002). Lithologic logs from monitoring wells and production wells at the refinery confirm sand with minor thin clay lenses extending to 100 feet or more.

The dune sand deposits are underlain by the Pliocene-Pleistocene Paso Robles Formation which is the major water producing formation in the vicinity of the project site. Typical thickness of the formation in the vicinity of the project site is between 500 and 600 feet. The formation is described as typically consisting of unconsolidated to poorly consolidated to sometimes cemented beds or lenses of coarse to fine-grained gravel and clay, sand and clay, shale gravel, silt, clay, silty clay, and sandy clay, with some lenses of gravel and sand (DWR, 2002).



## BACKGROUND

### 2.2.2 Northern Inactive Waste Site Topography

The NIWS is situated in an area of naturally occurring sand dune formations, vegetated by native and non-native plant species. The lowest point of the investigation area lies at an elevation of approximately 112 feet above mean sea level (msl). Except for an area to the southwest, dune formations completely surround the investigation area. Relatively taller dune formations bound the investigation area directly to the north, south, and west rising approximately 15 feet above the lowest point of the investigation area. A shorter dune formation, gradually rising approximately 5 feet, occurs to the east of the investigation area. An access road to the NIWS area is located to the west and lies in the channel of the northern and southern sand dunes.

## 2.3 HYDROGEOLOGY

### 2.3.1 Surface Water

Due to the localized dune topography and sand lithology, stormwater at the investigation area is contained within the SMR property. The nearest surface water bodies in the vicinity of the project site includes Oso Flaco Creek located approximately 0.6 miles to the southwest. Little Oso Flaco Lake and Oso Flaco Lake are located approximately 1.2 and 1.7 miles west of the project site, respectively. Two lakes (Jack Lake and Lettuce Lake located approximately one-mile northwest) that are depicted on the USGS topographic map (Oceano quadrangle), are shown to be intermittent (USGS, 2013).

### 2.3.2 Hydrogeology and Groundwater

The Phillips 66 SMR is located within the Santa Maria Groundwater Basin (SMGB). Most of the SMGB is within the Santa Maria River Watershed, which extends eastward into the coastal range region and covers more than 453,000 acres. The basin is bound on the north by the San Luis and Santa Lucia Ranges, on the east by the San Rafael Mountains, on the south by the Solomon Hills and the Casmalia Hills, and on the west by the Pacific Ocean. The Santa Maria Valley is drained by the Sisquoc, Cuyama and Santa Maria Rivers, and Orcutt Creek. Annual precipitation ranges from 13 to 17 inches with an average annual precipitation of 15 inches per year (Marine Research Specialists, 2011).

The aquifer system in the basin consists of unconsolidated Plio-Pleistocene alluvial deposits including gravel, sand, silt, and clay that range in thickness from 200 to nearly 3,000 feet. The underlying consolidated rocks typically yield relatively insignificant quantities of water of poor quality in the local wells. Franciscan and Knoxville Formation of Jurassic and Cretaceous age basement complex unconformably underlie the Tertiary and Quaternary deposits. The unconsolidated alluvial deposits in the SMGB comprising the aquifer system include the Careaga Sand, the Paso Robles Formation, the Orcutt Formation, the Quaternary Alluvium, river channel deposits, sediments, terrace deposits, and wind-blown dune sands at or near the surface (DWR, 2002).

Two groundwater zones exist beneath the site. The first groundwater zone exists in unconfined conditions at elevations ranging from approximately 40 to 50 feet mean sea level (msl). This groundwater occurs within an approximately 100-foot thick zone of stationary dune sands. The dune sands are underlain by the approximately 1,000-foot thick Paso Robles Formation which is the second groundwater zone and is





## BACKGROUND

the major water producing formation in the site's vicinity. Six water producing zones exist within the Paso Robles formation ranging in depth from 250 to 800 feet below ground surface (bgs). These water producing zones are composed of sand and gravel layers separated by fine sand, silt, and clay layers. The Paso Robles Formation is underlain by the Pismo Formation sandstones, which marks the base of "fresh" water bearing unconsolidated sediments in the site area (Groundwater Technology, 1992).

Groundwater quality varies significantly across the basin. Total Dissolved Solids (TDS) in the groundwater generally increases from east to west. In the vicinity of the Santa Maria Valley, the basin is classified as vulnerable to nitrate contamination, and in places concentrations of nitrate have increased from less than 30 mg/l in the 1950s to more than 100 mg/l in the 1990s. The Careaga Sand, the basal member of the system of alluvial sand, is generally considered to have poor water quality. In general, high TDS, sulfate, or chloride content impairs groundwater in some parts of the basin (DWR, 2002, Marine Research Specialists, 2011).

Groundwater monitoring has been conducted site wide at SMR in compliance with Permits and Orders issued by the Regional Water Quality Control Board - Central Coast Region (RWQCB) on a quarterly, and later, semi-annual basis since 1991. The depths to groundwater measurements obtained in September 2017 indicate a westward groundwater flow direction at an average gradient of 0.004 ft/ft and an average flow velocity of 0.18 feet per day. The groundwater flow direction and average gradient have remained consistent since groundwater monitoring commenced at the refinery in 1994. Based on the most recent groundwater measurements, the groundwater elevation at the NIWS is anticipated to be approximately 30 to 40 feet above msl and the depth to groundwater at the lower ground elevation of the NIWS area is anticipated to be approximately 60 to 70 feet bgs.

## 2.4 PREVIOUS INVESTIGATIONS

In April 1991, ESI prepared a Preliminary Site Assessment report for four features at the refinery, including the former NIWS (ESI, 1991). The report was submitted to the RWQCB in June 1991 and to the San Luis Obispo County Environmental Health Services (SLOEHS) in September 1991. According to the report, Unocal operated the NIWS from approximately 1955 to 1974. Although records of NIWS operations are not available, the NIWS was reported to potentially contain refinery trash and nonhazardous debris, slop oil emulsion, API separator sludge, ACM, and domestic waste from local residents. ESI estimated that the NIWS encompassed approximately 50,000 square feet (1.1 acres) and noted oily and darkened surface soil in the NIWS during a 1990 site visit.

To evaluate the nature and extent of the waste, ESI advanced six exploratory trenches within the footprint of the NIWS in November 1990. Waste encountered was classified into three general categories including oily soil containing solid waste and debris, thick heavy tar-like hydrocarbons, and soil containing fibrous material thought to represent ACM. Although the depth of the fill appeared to range from approximately 3 to 7.5 feet bgs, oily soil encountered in one trench (LF-5) extended to at least 15 feet bgs (maximum depth explored).

Representative soil samples collected during the assessment were analyzed for total petroleum hydrocarbons (TPH), volatile organic compounds (VOC), semi-volatile organic compounds (SVOC), regulated metals, and pH. A sample of the suspected ACM was confirmed to contain 20% amosite



## BACKGROUND

asbestos. Concentrations of TPH up to 61,000 milligrams per kilogram (mg/kg) were reported in the soil samples. Oily soil extending to 15 feet bgs in trench LF-5 was found to contain TPH at a concentration of 6,000 mg/kg. Metals were reported at concentrations below California hazardous waste threshold values. Non-detect to low concentrations of VOC and SVOC were reported in the soil, with one exception. A soil sample from 2.5 feet bgs in trench LF-3 contained several carcinogenic polynuclear aromatic hydrocarbons (PAH) including benz(a)anthracene, benzo(b)fluoranthene, benzo(a)pyrene, and dibenzo(a,h)anthracene at concentrations exceeding RWQCB Environmental Screening Levels (ESL) for direct contact by commercial/industrial workers.

Based on the assessment findings, ESI estimated the volume of the fill material at 10,000 to 15,000 cubic yards, not including the TPH impacted soil beneath the fill material. The assumed presence of friable ACM in the NIWS was cited as a concern for potential future remediation activities.

In 2016, Stantec reviewed historical aerial photographs to aid in evaluation of general land use of the investigation area. Aerial photographs were available in 1937 and 1957, and approximately three to eleven-year increments from 1957 until present. Following review of the historical photographs, Stantec concluded that the NIWS may have extended further east than estimated in previous investigations and additional field investigation was needed to further characterize the perimeter.



## 3.0 SITE ASSESSMENT METHODS

### 3.1 SITE HEALTH AND SAFETY

Stantec prepared and implemented a HASP in accordance with project requirements. The HASP complied with the OSHA Standard 29 CFR 1926/1910. All site employees that could potentially be exposed to remediation related hazardous substances, health, or safety hazards have completed HAZWOPER training as required by 29CFR 1910.120 and 29CFR1926.65. Asbestos workers and supervisors complied with California Asbestos Regulations and OSHA Asbestos regulations in 29 CFR1926.1101. In addition, all applicable medical monitoring and industrial hygiene sampling requirements defined in the above standards, including asbestos abatement work, were followed.

All field work activities were conducted in accordance with the “Safework Execution Plan for Soil and Groundwater Assessment” (SEP) prepared by Stantec in August 2017. The SEP included a “Technical Work Plan for Asbestos Management and Compliance” prepared by Entact, LLC, a California state certified asbestos contractor.

### 3.2 UTILITY LOCATING

Underground Service Alert (USA) was contacted a minimum of 48 hours prior to drilling to arrange for underground utility locating. In addition, Stantec utilized a private utility locator to further evaluate buried piping and other potential subsurface obstructions near the planned borings. Prior to drilling, the uppermost 8 feet of each boring were cleared using hand auger equipment.

### 3.3 BIOLOGICAL SURVEY

The NIWS is located in the vicinity of known habitat for the federally-listed endangered vegetative species Nipomo lupine (*Lupinus nipomensis*). A data review of recent and historical field surveys was conducted by a Stantec biologist prior to assessment activities to determine the need for any modifications to assessment activities.

The data review comprised reviewing data collected by the Land Conservancy of San Luis Obispo County, which has conducted annual biological surveys for Nipomo lupine at SMR since 2004. The results of the data review showed that no Nipomo lupines have been identified within or immediately adjacent to the approximate NIWS boundaries since the surveys began in 2004 (Land Conservancy, 2017). According to the results of the Spring 2017 survey, the nearest individual plants identified were located approximately 500 feet to the north, south, and east of the approximate NIWS boundaries. Based on the data review, no modifications to assessment activities were necessary based on the presence of Nipomo lupine.



### 3.4 SOIL BORINGS AND SOIL SAMPLING

#### 3.4.1 Hand Auger Borings

Between September 20 and 29, 2017, 34 hand-auger borings identified as HA-21 through HA-31, HA-32(1), HA-32(3), HA-32(a), HA-32(b), HA-33 through HA-37, HA-37(a), and HA-38 through HA-49 were advanced at the locations shown on Figure 2. The boring locations were selected based on the historical data review to provide lateral coverage of the approximate NIWS area. Additional locations were selected as step-outs when obstructions were encountered. The borings were completed to a minimum depth of eight feet bgs for utility clearance using a three-inch diameter auger. Obstructions were encountered in borings HA-32(1), HA-32(3), 32(a), and HA-37 which were completed to depths of 1, 5, 3 and 9 feet bgs, respectively. Soil samples were generally collected at 1, 3, 5, and 8-foot intervals and were placed in pre-cleaned laboratory-supplied sample jars and prepared for laboratory analysis. A portion of the sample from each depth interval was field screened for potential volatile organic vapors using a photo-ionization detector (PID). All soil borings were backfilled with hydrated bentonite chips. All boring locations were surveyed by Stantec for horizontal coordinates using a GPS unit capable of sub-meter accuracy. Soil encountered during drilling was logged in accordance with the United Soil Classification System (USCS) by a geologist or scientist working under the supervision of a State of California Professional Geologist. Boring logs for the borings are included in Appendix A. Standard Operating Procedures (SOPs) for drilling and soil sampling are in Appendix B.

#### 3.4.2 Direct-Push Borings

Between October 2 and 5, 2017, 17 of the hand-auger borings were further advanced to greater depths using track-mounted dual tube, direct-push equipment operated by S/G Drilling of Lompoc, California. The locations for the deeper borings were selected based on the historical review and/or field observation results from the initial hand-auger borings. The soil borings completed by direct-push are identified as HA-20, HA-26, HA-32(b), HA-34, HA-36, HA-37(a), and HA-39 through HA-49 (Figure 2). Further advancement by direct push was attempted in boring HA-37; however, an obstruction was encountered at the same depth as the hand auger boring (9 feet bgs) which prompted the step out location at HA-37(a).

The borings were completed to depths ranging between 15 and 25 feet bgs. Soil cores were collected in acetate sample liners and soil samples for potential laboratory analysis were collected at approximately five-foot intervals of depth to termination of the borings. All soil samples were prepared and retained for laboratory analysis. The soil cores were field screened for potential volatile organic vapors using a PID. All soil borings were backfilled with hydrated bentonite chips.

### 3.5 PERIMETER AIR MONITORING

Stantec performed air sampling in conjunction with the hand auger and drilling activities to monitor for potential airborne ACM fibers at the perimeter of the work area. Specific air sampling locations were selected based on wind direction and coverage of the exclusion zone. Air sampling pumps were positioned on the north, east, south, and west perimeters, just outside of the exclusion zone. The pumps were placed at these locations daily throughout the remainder of the work activities. Wind direction was typically westerly with occasional easterly winds in the morning, transitioning to westerly in the late



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morning and for the remainder of the day. The wind direction and placement of the air sampling pumps upwind, crosswind (on two sides), and downwind, was monitored during work activities.

The high-volume air sampling filter cassettes used for daily monitoring were 25-millimeter diameter, pre-loaded, three-piece cassettes equipped with 0.8-micron, mixed-cellulose ester filters and 50-millimeter long extension cowls.

After the air sampling pumps were placed by Stantec, they were individually calibrated at flowrates between 10 and 12 liters of air per minute (LPM). The air sampling cassettes were placed at a height of approximately 60 inches above the ground surface, perpendicular to the wind. Prior to shutting off the pump, a secondary calibration was performed to obtain the average flowrate.

### 3.6 WASTE MANAGEMENT

Soil and other solid wastes generated daily were managed using the standard practice of 6 milliliter (ml) double-bagging. The wastes included, but were not limited to, soil, personal protective equipment (PPE), disposable tools/materials, wipes used for tools and equipment decontamination, cleaning cloths, visqueen, and the contents of a wet/dry HEPA vacuum used in daily cleanup. Material was secured in bags, taped closed, and a labeled. Double-bags were individually labeled in accordance with 29CFR 1926.1101(k)(8) and 8CCR5208(j)(5), transported to the SMR ACM accumulation area, and placed in a roll-off bin designated and labelled for ACM waste. The roll-off bin was transported and disposed as part of the routine SMR ACM waste stream.

The only liquid generated during assessment activities was water from the shower used for personnel decontamination. The water was passed through a 100 micron drain filter before discharge to the ground as per the "Technical Work Plan for Asbestos Management and Compliance" prepared by Entact.

### 3.7 LABORATORY ANALYSIS

#### 3.7.1 Soil Samples

Laboratory analysis of soil samples was conducted by BC Laboratories in Bakersfield, California. BC Laboratories is certified under the State of California Environmental Laboratory Accreditation Program. Selected soil samples from each boring were analyzed for the following:

- TPH as gasoline (TPHg), diesel (TPHd), and motor oil (TPHo) by Environmental Protection Agency (EPA) Test Method 8015M/FFP.
- Asbestos by EPA Test Method 600/R-93/116.

Based on recorded soil descriptions and field monitoring results selected soil samples were additionally analyzed for the following:

- VOCs by EPA Test Method 8260B.
- PAH using select ion monitoring (SIM) by EPA Test Method 8270C.
- Dioxins and furans by EPA Test Method 8290.
- Chlorinated acid herbicides by EPA Test Method 8151A.
- Organochlorine pesticides and Polychlorinated biphenyl's (PCBs) by EPA Test Method 8080.



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- Organophosphorus pesticides by EPA Test Method 8141A.
- Cyanide by EPA Test Method 9012.
- pH by EPA Test Method 9045-D.
- Hexavalent chromium by EPA Test Method 7199.
- California Title 22 Metals by EPA Test Method 6010.

### 3.7.2 Perimeter Air Samples

Stantec submitted perimeter air samples to EMSL Laboratories, Inc. (EMSL) located in Cinnaminson, New Jersey for analysis of asbestos content using Phase Contrast Microscopy (PCM). EMSL is accredited by the State of California, Department of Public Health (CDPH) and the National Institute of Science and Technology's (NIST) National Voluntary Laboratory Accreditation Program (NVLAP, code #101048-0). EMSL participates in the National Institute for Occupational Safety and Health (NIOSH) Proficiency Analytical Testing Program and has substantial experience in the analysis of asbestos. All air samples were collected and analyzed following the NIOSH 7400 Method.



## 4.0 ASSESSMENT RESULTS

### 4.1 SUBSURFACE CONDITIONS

Subsurface conditions encountered in the soil borings were consistent with the 1990 site investigation. Fine to medium-grained, poorly graded, loose dune sands comprise the predominant native soil lithology from the ground surface to the total depth explored (up to 25 feet bgs). The presence of disposal material in several of the borings was indicated by petroleum hydrocarbons, sulfur cake, metal debris, wood debris and fibrous materials. The petroleum hydrocarbons were indicated by black stained sand, cohesive chunks of black tar binding the sand, and fragments of asphaltic material. VOC's were not detected by the PID field measurements in any of the soil samples.

### 4.2 ANALYTICAL RESULTS

The following sections summarize the analytical results for the soil samples collected from the borings and the perimeter monitoring air samples.

#### 4.2.1 Soil Analytical Results

Where applicable and available, the soil analytical results are compared with Tier I Environmental Screening Levels (ESLs) for direct exposure to soil, developed by the RWQCB – San Francisco Bay Region (SFRWQCB, 2016). Tier I ESLs are intended for sites where unrestricted land use is sought. The soil analytical results are also compared to Total Threshold Limit Concentrations (TTLC) for toxicity as listed in California Code of Regulations, Title 22, Chapter 11, Article 3 (CCR 22). If the concentration equals or exceeds the TTLC level in a solid waste, it is considered a State of California hazardous waste. With the exception of asbestos, no concentrations were detected above the corresponding TTLC for any of the analytes.

In some instances, the laboratories may assign the data qualifier "J" flag for concentrations that are detected higher than the method detection limit (MDL), but less than the practical quantification limit (PQL). As indicated by the laboratory, any concentrations that have been assigned a "J" flag are considered estimated values. "J" flagged values may be considered usable for meeting certain Data Quality Objectives.

Analytical results for soil samples collected from the 2017 assessment are summarized in Tables 1 through 11. Laboratory reports and chain of custody documentation are included in Appendix C.

##### 4.2.1.1 Total Petroleum Hydrocarbons

A minimum of one sample from each soil boring was analyzed for TPHg (C4-C12), TPHd (C13-C22), and TPHo (C23-C40). A total of 173 samples were analyzed for TPH. TPHg was not detected above the PQL in any of the samples analyzed. TPHd was detected above the PQL in two samples, HA-32(1)-1', and HA-32(3)-5' at concentrations of 7,400 and 3,600 milligrams per kilogram (mg/kg), respectively. The concentrations in both samples exceed the Tier I ESL for TPHd of 230 mg/kg. TPHo was detected above





## ASSESSMENT RESULTS

the PQL in 68 samples with concentrations ranging from 20 mg/kg (HA-24-8') to 82,000 mg/kg (HA-37-9'). TPHo was reported above the Tier 1 ESL for of 5,100 mg/kg in a total of 11 samples from soil borings HA-26, HA-31, HA-32(1), HA-32(3), HA-37, HA-37(a), and HA-39.

Analytical results for TPH are presented in Table 1. TPHo concentrations at each boring location are presented on Figure 3, and cross sections showing TPHo concentrations with respect to depth are presented on Figures 4 through 7.

### 4.2.1.2 ACM

A minimum of one sample from each soil boring was analyzed for ACM (amosite and chrysotile), for a total of 147 samples. Amosite was detected in 12 samples from 7 of the borings. Chrysotile was detected in 45 samples from 16 of the borings. Amosite was detected at a concentration of 2% in two samples (HA-22-1' and HA-37-9') and at 3% in sample HA-22-3'. The remainder of the amosite concentrations detected were reported at less than 1%.

Chrysotile was detected at a concentration of 2% in samples HA-37(a)-1' and HA-39-1'. A portion of a sample from boring HA-37 was segregated and described as "insulation". The chrysotile concentration for the insulation sample was reported at 50%. The remaining detections for chrysotile were reported at less than 1%.

No ESLs have been established for ACM; however, the samples with amosite and/or chrysotile concentrations at or greater than 1% exceeded the TTLC of 1%. Analytical results for ACM are presented in Table 2. Amosite and chrysotile concentrations at each boring location are presented on Figure 3. Cross sections showing amosite and chrysotile concentrations with respect to depth are presented on Figures 4 through 7.

### 4.2.1.3 Other Analyses

Four samples identified as HA-26-1', HA-32(1)-1', HA-37-8', and HA-37(a)-5' were selected for additional analyses, including VOC, PAH, dioxins, herbicides, pesticides, pH, cyanide, PCBs, and metals. These samples were selected for additional analyses because field observations (e.g. dark, oily soil) indicated they were representative "worst case" samples. Two additional samples, HA-37(a)-10' and HA-26-3' were also analyzed for dioxins and metals after initial data review. Summaries for each of the additional analyses are presented below.

#### VOC

Of the VOC constituents analyzed, including BTEX, only 1,2,4-trimethylbenzene was detected above the PQL at concentrations of 0.0079 mg/kg and 0.0072 mg/kg in samples collected from borings HA-26-1' and HA-37-8', respectively. Several other VOC were detected at estimated concentrations in all four samples. No VOC were detected above ESLs. Analytical results for BTEX are included in Table 1 and results for full list VOC (including BTEX) are presented in Table 3.



## ASSESSMENT RESULTS

### PAH

Several PAH compounds were detected above ESLs in the four samples analyzed. Benzo(a)pyrene (BaP) was reported at concentrations of 1.6, 4.6, and 8.9 mg/kg in samples HA-26-1', HA-32(1)-1', and HA-37(a)-5', respectively. Benzo(a)anthracene was reported above the ESL in all four of the samples analyzed (HA-37-8' had the only J-flagged concentration of 0.46 mg/kg). Several PAH were detected above the ESLs in the other three samples analyzed. In addition, the BaP equivalent (BaPeq) was calculated for each sample by multiplying the result by the Toxic Equivalency Factor (TEF) for each carcinogenic PAH, and the resulting products were summed and compared to the ESL for BaPeq, as per the "Users Guide: Derivation and Application of Environmental Screening Levels (ESLs)" (SFRWQCB, 2016). All four samples had BaPeq values greater than the ESL of 0.016 mg/kg ranging from 0.046 mg/kg (HA-37-8') to 18.1 mg/kg (HA-32(a)-5'). It should be noted that the BaPeq calculation for the sample from HA-37-8' used an estimated J-flag concentration for benzo(a)anthracene. Analytical results for PAH are presented in Table 4.

### Dioxins and Furans

Dioxin compound 2,3,7,8-TCDD was reported above the ESL of 4.9 picograms per gram (pg/g) in the samples from HA-26-1', HA-32(1)-1', and HA-37(a)-5' at concentrations of 6.34, 10.3 and 4.94 pg/g, respectively. In addition, the dioxin toxic equivalent (TEQ) was calculated for each sample by multiplying the result by the TEF for each congener, and the resulting products were summed and compared to the ESL for 2,3,7,8-TCDD (SFRWQCB, 2016). It should be noted that some of the TEF calculations used estimated J-flag concentrations for some constituents. Five of the six samples had TEQ values greater than the ESL of 4.9 pg/g ranging from 6.6 pg/g (HA-26-3') to 179 pg/g (HA-32(1)-1'). The sample with a TEQ less than the ESL was HA-37(a)-10' with a TEQ value of 0.01. Analytical results for dioxins and furans are presented in Table 5.

### Chlorinated Herbicides

No chlorinated herbicide compounds were detected above the PQLs in any of the four samples analyzed. Analytical results for chlorinated herbicides are presented in Table 6.

### Organo-Phosphorus Pesticides

No organo-phosphorus pesticide compounds were detected above the PQLs in any of the four samples analyzed. Analytical results for organo-phosphorus pesticide are presented in Table 7.

### pH and Total Cyanide

Measurements of pH were reported at 7.32, 3.35, 7.60 and 6.81 in the samples from HA-26-1', HA-32(1)-1', HA-37-8', and HA-37(a)-5', respectively.

Cyanide was detected above the ESL of 0.0036 mg/kg in the samples from HA-26-1', HA-32(1)-1', and HA-37(a)-5' at concentrations of 0.73, 3.3, and 0.20 J mg/kg, respectively. Cyanide was not reported above the PQL of 0.50 mg/kg in HA-37-8' (note the PQL concentration is above the ESL value of 0.0036 mg/kg). Analytical results for pH and Cyanide are presented in Table 8.



## ASSESSMENT RESULTS

### Organochlorine Pesticides and PCBs

Organochlorine pesticide compounds 4,4-DDE, 4,4-DDT, and dieldrin were detected in the sample collected from HA-32(1)-1', at concentrations of 0.025, 0.062 and 0.015 mg/kg, respectively. Of the pesticide compounds detected, dieldrin was the only compound reported above its respective ESL of 0.00017 mg/kg.

PCBs were not detected above the PQLs in any of the four samples. Analytical results for polychlorinated pesticides and PCB are presented in Table 9.

### California Title 22 Metals and Hexavalent Chromium

Arsenic was reported above the ESL of 0.067 mg/kg in all samples, occurring at concentrations ranging from 1.1 mg/kg in sample HA-32(1)-1' to 2.0 mg/kg in sample HA-37(a)-5'. Nickel was reported above the ESL of 86 mg/kg in samples HA-26-1' and HA-37(a)-5', at concentrations of 130 and 110 mg/kg, respectively. Hexavalent chromium was detected above the ESL of 0.30 mg/kg in all six samples at concentrations ranging from 0.55 mg/kg (HA-37(a)-10') to 2.4 mg/kg (HA-26-1'). It should be noted that the PQL for four of the samples were greater than the ESL of 0.30 mg/kg. Analytical results for metals and hexavalent chromium are presented in Table 10.

#### **4.2.2 Perimeter Air Sampling Results**

There are no outdoor clearance air standards currently established for ACM. However, the State of California, Division of Occupational Safety and Health (DOSH) Permissible Exposure Limit (PEL) for asbestos is 0.1 fiber per cubic centimeter (f/cc) and the EPA indoor air clearance level is 0.01 f/cc following asbestos abatement activities. The analytical results of the air samples collected as a part of this project were below both the DOSH PEL and the EPA indoor clearance levels. However, ACM concentrations could not be determined in the samples collected in the afternoon of October 4, 2017 because the filters were overloaded (excessive dust or particles preventing accurate analysis). Although these samples could not be analyzed, based on the trend of other samples collected during this project, it is not expected that fiber concentrations would have exceeded the DOSH PEL. Perimeter air sampling results are presented in Table 11.



## 5.0 CONCLUSIONS AND RECOMMENDATIONS

### 5.1 CONCLUSIONS

The primary objectives of the site assessment activities were to better define the extent of the former northern NIWS, and to characterize the waste material found within the NIWS boundaries. Findings from the current phase of assessment are consistent with previous assessments; however, the lateral extent of environmental impacts were larger than previously identified. In general, NIWS COPC consist primarily of soils impacted with ACM and TPHo.

#### 5.1.1 Waste Characterization

The presence of disposal material was indicated by sulfur cake, metal debris, black granular/asphaltic material, wood debris and visibly fibrous materials. This typical debris-type of waste can generally be considered defined; and occurring in the western and northwestern portions of the NIWS, at depths less than 3 feet bgs. Although, discoloration was noted in the eastern portions of the NIWS area, there was no evidence of debris-type fill material. In general, locations where debris was observed correlated with detections of TPHo and/or ACM with some exceptions. In contrast, there are instances where analytical results showed detections of TPHo and/or ACM without the occurrence of debris-type material.

#### 5.1.2 Lateral and Vertical Extent

##### 5.1.2.1 Total Petroleum Hydrocarbons

All TPH concentrations primarily occurred in the oil range. TPHo was detected above the PQL in a minimum of one sample from 25 of the 34 borings. TPHo was reported over the ESL in a minimum of one sample from 7 of the 34 borings. TPHd was detected in soil samples HA-32(1)-1' and HA-32(3)-5' at concentrations above the ESL. TPHg was not detected in any of the soil samples.

As shown on Figure 3, analytical results indicate two areas with TPHo impacts above the ESL. A larger area on the west side of the NIWS is bounded by (clockwise from the north) borings HA-24, HA-25, HA-30, HA-42, HA-33, HA-32(b), HA-32(a), and HA-38. The smaller area on the east side is present due to the TPHo concentration above the ESL in sample HA-26-1'. This area is bounded by borings HA-45, HA-27, and HA-30.

Where TPHo was reported above the ESL, vertical delineation was achieved within the boring or a nearby 'step-out' boring. Specifically, the vertical extent of TPHo impacted soil above the ESL ranges between 1-foot bgs (borings HA-39, HA-37(a), HA-32(1), and HA-26) to approximately 10 feet bgs (boring HA-37), as indicated by the step-out boring HA-37(a). The majority of TPHo impacted soils above the ESL occurred in the near surface between 1 and 3 feet bgs. Based on the assumed depth to groundwater of 60 to 70 feet bgs in the vicinity of the NIWS, groundwater is not expected to be impacted by petroleum hydrocarbons associated with the NIWS waste storage activities. This assumption is based on the relative stability of TPHo and the approximately 50 feet of vertical distance between the deepest encountered impacted soils (approximately 10 feet bgs) and the assumed depth to groundwater.



## CONCLUSIONS AND RECOMMENDATIONS

### 5.1.2.2 ACM

ACM as either amosite or chrysotile was reported in a minimum of one sample from 20 of the 34 borings with samples from 4 borings detected above the TTLC of 1%. Vertical delineation was achieved in the borings with ACM values above the TTLC with the exception of samples from borings HA-22 and HA-37. A concentration of ACM at <1% was detected at total depth of boring HA-22 (8 feet bgs) and a concentration of 2% was detected at total depth in boring HA-37 (9 feet bgs). In 6 of the 34 borings, concentrations of <1% ACM were detected to total depth ranging from 3 feet to 8 feet bgs, which indicates the need for further vertical delineation to the investigation limit of non-detect. In the borings selected for further sampling by direct-push equipment, ACM was not reported beyond a depth of 8 feet bgs.

In general, concentrations of ACM at <1% are dispersed laterally at a greater extent than TPHo and the typical debris-type waste. While TPHo impacts appear to be confined toward the western portion of the investigation area (with the exception of sample HA-26-1'), ACM concentrations <1% were present in both the western and eastern portions of the investigation area. ACM concentrations <1% were detected in several of the perimeter borings on all sides of the approximate NIWS boundary, indicating the need for further lateral delineation to the non-detect investigation limit.

### 5.1.2.3 Other Analyses

Soil analytical results indicated constituents of PAH, dioxins and furans, cyanide, and metals along with BaPeq and dioxin TEQ detected at concentrations above the respective ESLs. With a few exceptions, these detections appear to correlate with the corresponding TPHo concentrations that were detected above the ESL. The exceptions include the following:

- 2,3,7,8-TCDD, several constituents of PAH, and BaPeq were detected above ESLs in sample HA-37(a)-5' which contained TPHo at 3,900 mg/kg, which is below the TPHo ESL of 5,100 mg/kg;
- Dioxin TEQs calculated for 5 of the 6 samples analyzed for dioxins were above the ESL for 2,3,7,8-TCDD, including sample HA-26-3' which did not contain concentrations of TPHo detected above the PQL. It should be noted that the concentrations from several of the constituents were J-flagged but were used at the estimated value for the calculations.

Arsenic was detected above the ESL for all six samples analyzed for metals. However, as stated in the ESL Users Guide (SFRWQCB, 2016), arsenic concentrations in site soils typically exceed the ESL for arsenic due to naturally occurring background levels. The detected arsenic concentrations in the six samples ranged from 1.1 to 2.0 mg/kg and likely represent background levels based on the similar concentrations detected in all samples. This includes sample HA37(a)-10' which had an arsenic concentration of 2.0 mg/kg and a corresponding estimated TPHo concentration of 14 J mg/kg.

## 5.2 RECOMMENDATIONS

Final closure of the former NIWS will be met when 1) corrective actions are successfully implemented without the use of deed restrictions (property owner driven); and 2) corrective actions satisfy regulatory



## CONCLUSIONS AND RECOMMENDATIONS

requirements (regulatory agency driven). Although the SLOEHS opted to relinquish lead environmental regulatory agency status, it is expected that the regulatory agency that ultimately assumes lead agency status will require corrective action prior to issuing final closure. Furthermore, agency concurrence will be needed to ensure that a deed restriction will not be required for the NIWS portion of the property.

The assessment confirmed the primary COPC as petroleum hydrocarbons (primarily TPHo), other compounds that appear to be associated with the occurrence of TPHo (e.g. PAH, dioxins and furans), and ACM (amosite and chrysotile). The COPC were encountered at depths ranging from near surface soils to approximately 10 feet bgs. The lateral and vertical extent of TPHo and associated compounds has been adequately defined. However, ACM concentrations <1% were detected in samples from borings located over a large portion of the approximate NIWS boundary.

Although concentrations at <1% ACM are not considered hazardous waste, generated material containing trace concentrations must be handled in compliance with Cal-OSHA regulations. This implies that ACM concentrations <1% must be addressed to prevent the need for a deed restriction. As stated previously, additional assessment is needed to determine the lateral and vertical extent of ACM at <1%. Accordingly, 11 direct-push borings (identified as GP-1 through GP-11) are proposed for additional lateral delineation of ACM concentrations at <1%. Four other direct-push borings (identified as GP-12 through GP-15) are proposed to confirm the vertical extent of ACM encountered during the September/October 2017 assessment. The proposed boring locations are presented on Figure 8.

### 5.2.1 Evaluation of Remedial Alternatives

Three remedial alternatives considered to obtain closure for the NIWS include:

1. No Further Action;
2. Soil Containment/Capping in Place; and,
3. Soil Excavation/Off-Site Disposal

The following sections briefly describe each of the remedial alternatives and evaluation criteria. The evaluation criteria include effectiveness, implementation, and cost.

#### 5.2.1.1 No Further Action

The No Further Action alternative would not require implementing any measures at the site, and no costs would be incurred. This alternative includes no institutional controls, no treatment of soil, and no monitoring. However, under the No Further Action alternative, the impacts due to the presence of COPC in soil would not be addressed and there would be no reduction in potential risks. Furthermore, a deed restriction would be required. This alternative, therefore, does not meet the effectiveness criterion.

#### 5.2.1.2 Soil Containment/Capping in Place

The Soil Containment/Capping in Place alternative would consist of installing a low permeability cap, cover, and associated drainage controls over the surface of the impacted areas. The cap would be used to minimize the potential exposure to impacted soil. A land use restriction would be executed and



## CONCLUSIONS AND RECOMMENDATIONS

recorded to ensure that the cap is functioning, inspected, and maintained and that future uses of the property are consistent with these requirements.

The containment/capping-in-place alternative would involve grading and disturbance of the impacted soil prior to placing the cap material. Therefore, there would be some exposure to the COPC with moderate short-term risks. The surface cap and drainage controls would require long-term inspection and maintenance to provide long-term effectiveness. Containment is a relatively simple technology that is easily implemented and can be installed in a relatively short timeframe. As the COPC would remain on site, obtaining permits and regulatory approval may be difficult. In addition, property owner acceptance for this alternative may be difficult since the COPC would remain on-site thus requiring a deed restriction. Containment technologies typically involve low to moderate costs depending on the technology used. Although an effective and readily implemented alternative, it would require a deed restriction and would therefore fail to meet the property owner criteria.

### 5.2.1.3 Soil Excavation/Off-Site Disposal

The Soil Excavation/Off-site Disposal alternative would consist of removing and transporting impacted soil to an appropriate, permitted off-site disposal facility. Excavation activities will likely be conducted using conventional construction equipment. Suppressant, water spray, and other forms of dust control may be required during excavation for dust/vapor abatement. Workers would be required to use personal protective equipment to reduce exposure to COPC. Confirmation soil sampling and analysis would be conducted at the final excavation extent to verify that cleanup criteria are achieved.

Potential short-term risks to on-site workers, public health, and the environment could result from dust or particulates that may be generated during excavation and soil handling activities. These risks would be mitigated at the site using personal protective equipment for on-site workers and engineering controls, such as dust suppression; and additional traffic and equipment operating safety procedures. Excavation and off-site disposal would remove the COPC from the site, and therefore, eliminates the long-term risk.

Excavation/off-site disposal is a well-proven, readily implementable technology for the remediation of contaminated sites. Equipment and labor required for remedial excavation to relatively shallow depths are typically readily available. It is anticipated that regulatory approval would be obtained since it is a proven technology. The estimated cost for excavation, transportation, and disposal of the impacted soils would be the highest of the three alternatives. The project costs would include permitting, excavation/removal, transportation, and disposal at an approved off-site disposal facility. The remedial excavation would then be backfilled, if necessary, and the surface restored in accordance with permit conditions. Furthermore, following successful completion of remedial excavation activities to the cleanup criteria, a deed restriction would not be warranted.

### 5.2.2 Recommended Remedial Alternative

Stantec recommends excavation of impacted soil as the preferred remedial alternative because:

- It is the only alternative that will allow unrestricted use of the site and no requirement for a deed restriction.
- It is a proven technology with long-term effectiveness.





## CONCLUSIONS AND RECOMMENDATIONS

- It should meet the cleanup requirements of the agency, property owner, and other project stakeholders.

The following sections describe the recommended general approach for the proposed additional data gap assessment using direct-push borings, and the remedial soil excavation and disposal alternative.



## 6.0 DATA GAP ASSESSMENT

A data gap assessment is proposed to further define the lateral and vertical extent of ACM identified from the 2017 soil assessment. This will be accomplished using a track-mounted direct-push rig to advance the proposed borings at the approximate locations shown on Figure 8. All proposed boring locations may be modified from the locations shown depending on potential surface or subsurface obstructions, topography, and access limitations. Additional “step-out” borings may be added depending on field indications of impacts and/or analytical results.

The proposed borings will be advanced to a target maximum depth of 15 feet bgs. Soil cores will be collected in acetate sample liners, and soil samples for potential laboratory analysis will be collected at approximately five-foot intervals of depth beginning within the upper five feet bgs, and/or within visually impacted horizons, to termination of the borings. All soil samples will be prepared and retained for possible laboratory analysis. The soil cores will be field screened for potential volatile organic vapors using a PID. All boring locations will be surveyed by Stantec for horizontal coordinates using a GPS unit capable of sub-meter accuracy. Soil borings will be backfilled with hydrated bentonite chips.

The soil samples will be analyzed for the following:

- TPHg, TPHd and TPHo by EPA Test Method 8015M/FFP.
- Asbestos by EPA Test Method 600/R-93/116.



## 7.0 CONCEPTUAL CLOSURE PLAN

### 7.1 REMEDIAL ACTION OBJECTIVES

The results of the site characterization have indicated the presence of COPC in soil at the site. To address these COPC, remedial action objectives have been developed based on exposure pathways, cleanup goals, and regulatory requirements.

#### 7.1.1 Exposure Pathways

The most likely receptor for exposure to impacted soil is assumed to be onsite workers. Also, to assess unrestricted site use, future onsite residents were assumed to be exposed to the COPC in soil. Under both scenarios, potential receptors could be exposed to COPC via direct contact and inhalation of fugitive dust emissions.

#### 7.1.2 Proposed Cleanup Goals

The proposed cleanup goals are intended to provide for unrestricted use of the property. For the purposes of this CCP, the proposed cleanup goals are the Tier I ESL for TPHo (5,100 mg/kg) and no detectable concentrations of ACM (amosite and chrysotile). Other constituents also exceeded ESLs, including BaPeq, 2,3,7,8-TCDD, cyanide, arsenic, hexavalent chromium, and nickel. Those constituents appeared closely associated with the occurrence of high TPHo concentrations. A detailed confirmation sampling plan will be prepared to address those constituents.

#### 7.1.3 Regulatory Requirement Review

A review of pertinent laws, regulations, and other criteria was performed to identify applicable regulatory requirements to be considered for remediating the site. A summary of the potentially applicable regulatory requirements is presented below.

Requirement	Description
Resource Conservation and Recovery Act, as amended by the Hazardous and Solid Waste Amendments (40 CFR 260 to 299, 42 USC 7401-7642)	Federal act that classifies and regulates hazardous waste and facilities that treat, store, and dispose of hazardous waste.
40 CFR 264.110 and 264.117	Requirements for closing and monitoring hazardous waste management units.
40 CFR 264.250 and 42 USC 6924	Requirements that prohibit placement of certain hazardous wastes in a land disposal unit.
40 CFR 263	Standards applicable to transporters of hazardous waste.



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Requirement	Description
Occupational Safety and Health Act (29 CFR 1910.120 et seq.)	Identifies permissible exposure limits (PELs) for inhalation or dermal exposure of workers to chemicals. When PELs are exceeded, OSHA requires the use of personal protective equipment or other methods to block exposure.
Endangered Species Act of 1973	Established to conserve endangered or threatened species.
Hazardous Waste Control Act (HSC, Chapter 6.5, section 25100 et seq., 22 CCR 66260.1 et seq.)	Establishes criteria for determining waste classification for the purposes of transportation and land disposal of wastes in California. Regulates treatment, storage, transportation, and disposal of substances identified as hazardous.
Hazardous Waste Generator Requirements (22 CCR 66262.1 et seq.)	Establishes standards applicable to generators of hazardous waste.
Land Disposal Restrictions (22 CCR 66268.7 et seq.)	Establishes standards for treatment and land disposal of hazardous waste.
Stockpiling Requirements for Contaminated Soil (HSC section 25123.3(a)(2))	Establishes standards for stockpiling of non-RCRA contaminated soil
California Hazardous Substances Account Act (HSC section 25340-25392)	Establishes fees regarding disposal of hazardous substances and outlines process for cleanup of hazardous substance release sites.
Asbestos Standard for the Construction Industry (29 CFR 1926.1101, 8 CCR 1529)	Regulates asbestos exposure in all work as defined in 29 CFR 1910.12(b)
Construction permit requirements (8 CCR 341)	Directs that asbestos removal work must be conducted by a DOSH-registered contractor
Hazardous Waste Haulers Act (22 CCR Chapter 30)	Governs transportation of hazardous materials in California.
Safe Drinking Water and Toxic Enforcement Act (Proposition 65) (22 CCR section 12000 et seq.)	Requires public warnings of potential exposure to suspected carcinogens and reproductive toxins.
California Occupational Health and Safety (8 CCR 5192)	Requires workers involved in hazardous substance operations associated with cleanup of sites perform the cleanup operations in accordance with Cal OSHA health and safety requirements.

The excavation and soil handling will be conducted by a qualified, HAZWOPER-trained and state certified ACM contractor.

### 7.1.4 Areas Exceeding Cleanup Goals

As shown in Figure 8, remedial excavation of soil with COPC concentrations exceeding the soil cleanup goals will generally be required to depths ranging from approximately 3 to 10 feet bgs. The areal extent of soil with COPC concentrations exceeding the soil cleanup goals is approximately 0.8 acres. As such, the total in-place volume of affected soil requiring remediation is approximately 13,000 cubic yards (cy). The actual volume of affected soil may change based on the results of the additional assessment and the confirmation sample laboratory analytical results.



## 7.2 REMEDIAL APPROACH

The following sections present the approach to implement the preferred remedial alternative. Additional details will be presented in a remedial design package and implementation plan to be prepared at a later date.

### 7.2.1 Pre-Construction Activities

#### 7.2.1.1 Grading plan and Permitting

A Land Use Permit application package, including completed forms, grading plans, and required fees will be submitted to the San Luis Obispo County Department of Planning and Building (SLOPB) for review. The existing topographic survey will be reviewed and expanded as necessary to include the excavation areas and vicinity of the work areas for inclusion in the design drawings.

Accordingly, the following permits and approvals may be required for remedial excavation operations:

- Land use and grading permits from the (SLOPBD).
- General Permit for Stormwater Discharges for Construction and Land Disturbance Activities and a Stormwater Pollution Prevention Plan (SWPPP) if more than one-acre of disturbance is anticipated.
- Approval from the San Luis Obispo County Air Pollution Control District (SLOAPCD).
- Waste acceptance at the designated NIWS

#### 7.2.1.2 Health and Safety Scope

The scope of work for the health and safety task includes the following:

- A Site-specific HASP for remedial excavation activities prepared in accordance with 29 CFR 1910.120, including a comprehensive set of Job Safety Analyses (JSAs).
- A workplan for ACM management prepared by a certified asbestos contractor.
- Preparation of a Phillips 66 Safework Execution Plan (SWEP) and Excavation Permit.
- Stewardship of Phillips 66 Safety through a dedicated full-time health and safety officer onsite during construction activities to monitor compliance with the HASP.

The HASP documents a proactive exposure assessment which identifies and aids field personnel in understanding the risks associated with the site. The HASP also outlines the proactive precautions to be taken to avoid the risks. The goal of the HASP is to complete the work onsite without any incidents at all—no injuries, no illnesses, and no impacts to the environment, property, and equipment. The subcontractors and other project participants are also expected to share the same goal. In addition, each subcontractor is expected to develop their own HASP tailored to the specific job tasks they expect to perform.

#### 7.2.1.3 Quality Assurance/Quality Control

Stantec will prepare a Quality Assurance Project Plan (QAPP) for the NIWS project to specify the policies, organizations, functions, quality assurance (QA), and quality control (QC) activities designed to achieve data quality objectives (DQOs) for the project. The intent of the QAPP is to present the QA/QC



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procedures that will be applied to data collection and analysis of soil samples to assure that the environmental data obtained are of the type and quality needed to meet the overall goals of the project. The QAPP will outline the analytical methods and associated detection limits to be used for determining concentrations of the COPC. The QAPP will be modified as necessary when guidelines and regulatory documents are revised, or when additional sampling or analytical methods are required for monitoring efforts.

### 7.2.1.4 Backfill Sampling

All onsite (non-remedial excavation related) and/or import sourced soil; and segregated soil from the remedial excavation for use as suitable backfill must meet the Tier 1 ESLs for petroleum hydrocarbons and asbestos concentrations at <1%.

### 7.2.1.5 Utility Locating

Underground Service Alert (USA) will be contacted a minimum of 48 hours prior to ground disturbance activities to arrange for underground utility locating. In addition, Stantec will utilize a private utility locator to further evaluate the presence and location of buried piping and other potential obstructions within the work area.

### 7.2.1.6 Notifications

Prior to the start of work, all required notifications will be made to the appropriate agencies and project stakeholders. The ACM contractor will be responsible for notifying Cal OSHA 24 hours prior to work in accordance with 8 CCR 1529.

## 7.2.2 Site Preparation

### 7.2.2.1 Site Entrance/Egress/Traffic Control

Primary access to the site will be via Willow Road. No upgrades or modifications to facilitate site entrance/egress of project vehicles are expected.

### 7.2.2.2 Staging and Mobilization

All necessary equipment and personnel will be mobilized to the site prior to the initiation of remedial activities. All involved parties including Stantec, Phillips 66, subcontractors, and other project stakeholders will be invited to participate in a pre-construction kickoff meeting. Prior to conducting field activities, the contractor will delineate the equipment staging areas, access routes, and temporary soil stockpile locations as necessary.

Remedial excavation activities will be conducted using conventional construction equipment. The contractor will be responsible for the ultimate selection of equipment used to complete the project in accordance with project specifications and permit requirements.



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### 7.2.2.3 Temporary Facilities

It is anticipated that temporary facilities utilized during field activities will include sanitary facilities, a PPE trailer, and a construction office trailer.

### 7.2.2.4 Locating and Staking

Prior to excavation, the perimeter of the proposed excavation extent will be delineated with labeled construction flags or stakes by Stantec. The locations of the markers will be based on GPS coordinates and field measurements.

## 7.2.3 Excavation Methodology

### 7.2.3.1 Remedial Excavation

To optimize removal of impacted soil, it is proposed to excavate soil to the prescribed depth at the remediation area and verify lateral removal to the applicable cleanup goal using conventional excavation equipment. Prior to excavation, any surface obstructions and/or materials that may impede remedial activities will be removed, as necessary. Soil samples will then be collected at the excavation bottom and, based on those results and to confirm previous site assessment data, the remaining material above the applicable cleanup goal will be removed to the prescribed depths at each site (see Section 7.2.6.1). The excavation will be backfilled with a combination of native soil and imported backfill (as needed) and restored (see Section 7.2.7)

Qualified field personnel will be onsite to direct excavation activities, conduct air monitoring, collect confirmation samples; and provide health and safety oversight. Impacted soil will be temporarily stockpiled in staging areas near the excavations and moistened with water, have a cement binder applied, or covered as needed for dust and emissions control.

### 7.2.3.2 Excavation Volume and Extent

The estimated volume of impacted soil designated for removal, based on the proposed cleanup goals, is approximately 13,000 cy with excavation depths ranging from approximately 3 to 10 feet bgs. The total areal extent of disturbance is approximately 0.8 acres including removal of impacted soils and excavation side sloping. The excavation could expand laterally and/or vertically in some areas based on field indications of impacts or laboratory analytical results. Depending on moisture content and the presence of fine-grained sediment binders, the excavation areas are anticipated be sloped at a minimum slope of 1:1 to provide appropriate stability in accordance with Cal-OSHA regulations. Work is anticipated to be conducted during weekday, normal daylight hours.

### 7.2.3.3 Soil Loading and Transportation for Offsite Disposal

During the remedial design phase of the project, Stantec will evaluate waste transport and disposal options for impacted soil. Waste management options may include transportation by rail and/or truck and disposal at either an in-state or out-of-state facility.





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Some soil may need to be stockpiled onsite prior to loading. If any temporary stockpiling outside the area of concern is necessary, the contractor shall design and operate the remediation waste staging area in compliance with the regulations set forth in HSC Section 25123.3. If necessary, a separate document describing the design and operation of the remediation waste staging area will be prepared and submitted.

### 7.2.3.4 Dust Control Measures

The ACM contractor will implement dust control measures to comply with Air Permit requirements to protect on-site and off-site receptors from chemicals and ACM in soil and nuisance dust. The ACM contractor will be responsible for selecting the dust suppression methods that may include spraying or misting the work areas (such as the excavation, soil handling areas and haul roads) with water and/or installing a misting system. Misting may also be used on soil placed in the transport trucks or rail cars. Efforts will be made to minimize the soil drop height from the excavator's bucket onto the soil stockpile or into the transport trucks or rail cars. After the soil is loaded, the soil will be covered prior to transport.

### 7.2.4 Air Monitoring

Air monitoring activities will be conducted in the work zone and perimeter during drilling and excavation activities. Airborne particulate monitoring will be conducted to verify and document the effectiveness of dust suppression measures in conformance with Air Permit requirements. Air monitoring for particulates will be performed during the excavation activities at the perimeter of the property using an upwind/downwind sampling approach. The limit on dust and ACM concentrations at the property boundaries will comply with permit conditions and health and safety requirements.

Periodic real time particulate measurements will be obtained in the working zone in accordance with the HASP. Personal air sampling for ACM will be conducted in the workers breathing zone in accordance with the asbestos management plan and HASP. VOCs are not expected to be encountered at significant concentrations during excavation activities based previous site investigations. Air monitoring, however, will be conducted using a PID during excavation and soil handling activities as specified in the HASP.

### 7.2.5 Waste Management

#### 7.2.5.1 Water

Water use during field activities includes dust control, soil moisture conditioning, and equipment decontamination. Handling and disposal of any water generated during equipment decontamination will be addressed in the ACM management plan.

#### 7.2.5.2 Impacted Soil

Following waste acceptance profiling, the impacted soil will be transported under waste manifest by licensed haulers to an approved and permitted recycling/disposal facility to be selected prior to commencement of remedial excavation activities.



### 7.2.5.3 General Waste and Debris

Miscellaneous waste material generated during the project may include PPE, disposable sampling equipment, and other solid media. Miscellaneous waste material generated during field activities will be addressed in the asbestos management plan.

### 7.2.6 Confirmation Sampling and Analysis

During remedial excavation activities, verification soil sampling will be conducted by Stantec to document the final extent of the excavation. Samples will be collected from excavated soil obtained from the excavation bottom and sidewalls either directly or using the onsite excavator operated by the contractor. Soil samples will then be collected in laboratory supplied jars and submitted for laboratory analysis.

#### 7.2.6.1 Soil Sample Collection

Discrete soil sampling of the excavation extent will be conducted as follows:

- Bottom Samples – One sample collected per 50 x 50-foot grid.
- Sidewall Samples – One sample collected every 50 linear feet.

Soil samples will be placed on ice for transport, along with completed chain-of-custody forms, to a laboratory certified under the State of California Environmental Laboratory Accreditation Program. All sampling equipment will be properly decontaminated prior to sampling and between sampling intervals to minimize the possibility of cross-contamination.

#### 7.2.6.2 Soil Sample Analysis

All soil verification samples will be analyzed for TPHo and ACM (amosite and chrysotile). Selected verification samples will be further analyzed for dioxins and furans; PAH; cyanide; Title 22 metals; and hexavalent chromium. Analytical methods and associated detection limits will be outlined in the QAPP.

### 7.2.7 Backfilling and Site Restoration

Depending on final excavation conditions and/or permit requirements, backfilling of some of the areas may be necessary. Backfilling and compaction requirements will be included as part of the Grading Plan to be prepared as part of the Land Use Application package.

The surface of all areas will be graded to match the design final grade. All trash and debris generated during remediation activities will be removed from the site. Required habitat restoration will be addressed in a separate Habitat Restoration Plan.

### 7.2.8 Post-Excavation Monitoring

Inspection of the Best Management Practices (BMP) for interim erosion controls, backfill and revegetation will be conducted in accordance with the SWPPP and permit conditions to evaluate effectiveness and performance. Potential erosion and sedimentation may occur from the restored slope areas following site restoration activities and prior to the establishment of vegetation. Based on the results of these



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inspections, recommendations for BMP maintenance, repair, or replacement of the erosion controls, vegetation and/or backfill will be provided.

### 7.3 REPORT PREPARATION

A comprehensive source area excavation Completion Report will be generated by Stantec following the site remediation activities. This report will describe the specific actions that were conducted to complete the source area excavation work. The report will document the following activities:

- Scope of work and project background.
- Remedial excavation methodology, quantities, and extent.
- Air monitoring results.
- Confirmation soil sampling and analyses.
- Soil transportation and disposal.
- Site restoration

#### 7.3.1 Analytical Data

Analytical data will be generated by the project laboratory and laboratory analytical reports will be provided in an appendix of the report. Summary tables will be generated presenting the final analytical results.

#### 7.3.2 Waste Manifests

Appropriate manifest documentation will be generated for waste shipped offsite for disposal. Signed waste manifests will be provided in an appendix of the report. A summary table referencing manifest number, waste material quantity, disposal or recycling facility, and date of disposal will be generated. The waste disposal facility will be responsible for providing Stantec waste disposal documentation.

### 7.4 PROJECT RECORDS CONTROL

A detailed project records file will be maintained onsite at all times. Records may include but not be limited to:

- Equipment calibration logs.
- Field equipment forms.
- Field production rates.
- Chain-of Custody documentation.
- Near miss forms.
- Health and safety, incident, accident, and personnel injury forms.
- Daily tailgate meeting forms.
- Soil transportation manifests.
- Site activity reports

The contractor will furnish copies of all appropriate records to Stantec field personnel prior to leaving the Site each day. It will be Stantec's responsibility to establish and maintain these records throughout the duration of the project.



## REFERENCES

### 8.0 REFERENCES

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# TABLES



Table 1  
Soil Analytical Results - Total Petroleum Hydrocarbons and BTEX  
Northern Inactive Waste Site  
Phillips 66 Santa Maria Refinery  
(all results in milligrams per kilogram)

Sample ID	Depth (feet)	Sample Date	TPH Gasoline (C4-C12)	TPH Diesel (C13-C22)	TPH Motor Oil (C23-C40)	Benzene	Toluene	Ethylbenzene	Total Xylenes
HA-20	1	9/26/2017	<20	<10	<20	--	--	--	--
HA-20	3	9/26/2017	<20	<10	7.0 J	--	--	--	--
HA-20	8	9/26/2017	<20	<10	6.6 J	--	--	--	--
HA-20	10	10/2/2017	<20	<10	<20	--	--	--	--
HA-20	15	10/2/2017	<20	<10	<20	--	--	--	--
HA-20	18	10/2/2017	<20	<10	<20	--	--	--	--
HA-20	20	10/2/2017	<20	<10	<20	--	--	--	--
HA-21	1	9/26/2017	<20	<10	190	--	--	--	--
HA-21	3	9/26/2017	<20	<10	190	--	--	--	--
HA-21	8	9/26/2017	<20	<10	25	--	--	--	--
HA-22	1	9/26/2017	<40	<20	480	--	--	--	--
HA-22	3	9/26/2017	<20	<10	280	--	--	--	--
HA-22	5	9/26/2017	<20	<10	65	--	--	--	--
HA-22	8	9/26/2017	<20	<10	22	--	--	--	--
HA-23	1	9/26/2017	<20	<10	92	--	--	--	--
HA-23	3	9/26/2017	<20	<10	19 J	--	--	--	--
HA-23	8	9/26/2017	<20	<10	10 J	--	--	--	--
HA-24	1	9/25/2017	<430	<210	3,100	--	--	--	--
HA-24	3	9/25/2017	<460	<230	2,000	--	--	--	--
HA-24	5	9/25/2017	<40	<20	400	--	--	--	--
HA-24	8	9/26/2017	<20	<10	20	--	--	--	--
HA-25	1	9/25/2017	<400	<200	<400	--	--	--	--
HA-25	3	9/25/2017	<430	<210	1,800	--	--	--	--
HA-25	5	9/25/2017	<460	<230	510	--	--	--	--
HA-25	8	9/25/2017	<20	<10	39	--	--	--	--
HA-26	1	9/25/2017	<2700	<1400	13,000	<0.005	<0.005	0.0024 J	0.0089 J
HA-26	3	9/25/2017	<430	<210	210 J	--	--	--	--
HA-26	5	9/25/2017	<20	<10	38	--	--	--	--
HA-26	8	9/25/2017	<20	<10	44	--	--	--	--
HA-26	10	10/4/2017	<20	<10	<20	--	--	--	--
HA-26	13	10/4/2017	<20	<10	<20	--	--	--	--
HA-26	15	10/4/2017	<20	<10	<20	--	--	--	--
HA-26	20	10/4/2017	<20	<10	<20	--	--	--	--
HA-27	1	9/25/2017	<400	<200	2,300	--	--	--	--
HA-27	3	9/25/2017	<430	<210	2,300	--	--	--	--
HA-27	5	9/25/2017	<20	<10	210	--	--	--	--
HA-27	8	9/25/2017	<20	<10	30	--	--	--	--
HA-28	1	9/22/2017	<20	<10	<20	--	--	--	--
HA-28	3	9/25/2017	<20	<10	<20	--	--	--	--
HA-28	5	9/25/2017	<20	<10	<20	--	--	--	--
HA-28	8	9/25/2017	<20	<10	<20	--	--	--	--
HA-29	1	9/22/2017	<320	<160	420	--	--	--	--
HA-29	3	9/22/2017	<20	<10	73	--	--	--	--
HA-29	6	9/22/2017	<20	<10	42	--	--	--	--
HA-29	8	9/22/2017	<20	<10	16 J	--	--	--	--
HA-30	1	9/22/2017	<430	<210	1,500	--	--	--	--
HA-30	3	9/22/2017	<460	<230	3,200	--	--	--	--
HA-30	5	9/22/2017	<20	<10	18 J	--	--	--	--
HA-30	8	9/22/2017	<20	<10	23	--	--	--	--
HA-31	1.5	9/22/2017	<380	<190	2,600	--	--	--	--
HA-31	3	9/22/2017	<1700	<830	7,300	--	--	--	--
HA-31	5	9/22/2017	<20	<10	180	--	--	--	--
HA-31	8	9/22/2017	<20	<10	170	--	--	--	--
HA-32(1)	1	9/21/2017	<3000	7,400	11,000	<0.005	0.0018 J	<0.005	<0.01
HA-32(3)	3	9/21/2017	<1000	<500	6,000	--	--	--	--
HA-32(3)	5	9/21/2017	<1200	3,600	9,800	--	--	--	--
HA-32(a)	1	9/29/2017	<20	<10	290	--	--	--	--
HA-32(a)	3	9/29/2017	<40	<20	200	--	--	--	--
HA-32(b)	3	9/29/2017	<20	<10	140	--	--	--	--
HA-32(b)	5	9/29/2017	<20	<10	<20	--	--	--	--
HA-32(b)	8	9/29/2017	<20	<10	27	--	--	--	--
HA-32(b)	10	10/3/2017	<20	<10	<20	--	--	--	--
HA-32(b)	15	10/3/2017	<20	<10	23	--	--	--	--
HA-32(b)	19	10/3/2017	<20	<10	<20	--	--	--	--
HA-32(b)	20	10/3/2017	<20	<10	<20	--	--	--	--
HA-33	1	9/21/2017	<20	<10	69	--	--	--	--

**Table 1**  
**Soil Analytical Results - Total Petroleum Hydrocarbons and BTEX**  
**Northern Inactive Waste Site**  
**Phillips 66 Santa Maria Refinery**  
**(all results in milligrams per kilogram)**

Sample ID	Depth (feet)	Sample Date	TPH Gasoline (C4-C12)	TPH Diesel (C13-C22)	TPH Motor Oil (C23-C40)	Benzene	Toluene	Ethylbenzene	Total Xylenes
HA-33	3	9/21/2017	<20	<10	<20	--	--	--	--
HA-33	5	9/21/2017	<20	<10	<20	--	--	--	--
HA-33	8	9/22/2017	<20	<10	<20	--	--	--	--
HA-34	2	9/20/2017	<20	<10	12 J	--	--	--	--
HA-34	4	9/20/2017	<20	<10	<20	--	--	--	--
HA-34	6	9/20/2017	<20	<10	17 J	--	--	--	--
HA-34	8	9/20/2017	<20	<10	10 J	--	--	--	--
HA-34	10	10/3/2017	<20	<10	<20	--	--	--	--
HA-34	15	10/3/2017	<20	<10	<20	--	--	--	--
HA-34	18	10/3/2017	<20	<10	<20	--	--	--	--
HA-34	20	10/3/2017	<20	<10	<20	--	--	--	--
HA-34	25	10/3/2017	<20	<10	<20	--	--	--	--
HA-35	1	9/27/2017	<20	<10	<20	--	--	--	--
HA-35	3	9/27/2017	<20	<10	<20	--	--	--	--
HA-35	5	9/27/2017	<20	<10	<20	--	--	--	--
HA-35	8	9/27/2017	<20	<10	<20	--	--	--	--
HA-36	1	9/26/2017	<40	<20	310	--	--	--	--
HA-36	3	9/26/2017	<20	<10	28	--	--	--	--
HA-36	8	9/26/2017	<20	<10	7.4 J	--	--	--	--
HA-36	8*	10/3/2017	<20	<10	25	--	--	--	--
HA-36	10	10/3/2017	<20	<10	<20	--	--	--	--
HA-36	15	10/3/2017	<20	<10	<20	--	--	--	--
HA-36	20	10/3/2017	<20	<10	<20	--	--	--	--
HA-37	1	9/20/2017	<600	<300	4,100	--	--	--	--
HA-37	3	9/20/2017	<400	<200	1,900	--	--	--	--
HA-37	4	9/20/2017	<600	<300	5,800	--	--	--	--
HA-37	6	9/20/2017	<600	<300	5,300	--	--	--	--
HA-37	8	9/20/2017	<1000	<500	11,000	0.0025 J	0.0045 J	0.0022 J	0.0077 J
HA-37	9	9/20/2017	<12000	<6000	82,000	--	--	--	--
HA-37	9*	10/3/2017	<20	<10	22	--	--	--	--
HA-37(a)	1	10/4/2017	<710	<350	5,600	--	--	--	--
HA-37(a)	3	10/4/2017	<40	<20	320	--	--	--	--
HA-37(a)	5	10/4/2017	<330	<170	3,900	<0.005	<0.005	<0.005	<0.01
HA-37(a)	10	10/4/2017	<20	<10	14 J	--	--	--	--
HA-37(a)	15	10/4/2017	<20	<10	<20	--	--	--	--
HA-37(a)	20	10/4/2017	<20	<10	<20	--	--	--	--
HA-38	1	9/20/2017	<40	<20	340	--	--	--	--
HA-38	3	9/20/2017	<20	<10	42	--	--	--	--
HA-39	1	9/27/2017	<800	<400	6,900	--	--	--	--
HA-39	3	9/28/2017	<280	<140	1,600	--	--	--	--
HA-39	5	9/28/2017	<290	<150	1,200	--	--	--	--
HA-39	8	9/28/2017	<20	<10	210	--	--	--	--
HA-39	10	10/5/2017	<20	<10	<20	--	--	--	--
HA-39	15	10/5/2017	<20	<10	<20	--	--	--	--
HA-39	20	10/5/2017	<20	<10	<20	--	--	--	--
HA-40	1	9/27/2017	<20	<10	9.1 J	--	--	--	--
HA-40	3	9/27/2017	<20	<10	<20	--	--	--	--
HA-40	8	9/27/2017	<20	<10	<20	--	--	--	--
HA-40	10	10/5/2017	<20	<10	<20	--	--	--	--
HA-40	20	10/5/2017	<20	<10	<20	--	--	--	--
HA-41	1	9/27/2017	<20	<10	22	--	--	--	--
HA-41	3	9/27/2017	<20	<10	<20	--	--	--	--
HA-41	8	9/27/2017	<20	<10	<20	--	--	--	--
HA-41	10	10/5/2017	<20	<10	<20	--	--	--	--
HA-41	20	10/5/2017	<20	<10	<20	--	--	--	--
HA-41	25	10/5/2017	<20	<10	<20	--	--	--	--
HA-42	1	9/28/2017	<20	<10	22	--	--	--	--
HA-42	3	9/28/2017	<20	<10	36	--	--	--	--
HA-42	8	9/28/2017	<20	<10	<20	--	--	--	--
HA-42	10	10/2/2017	<20	<10	12 J	--	--	--	--
HA-42	12.5	10/2/2017	<20	<10	<20	--	--	--	--
HA-42	15	10/2/2017	<20	<10	<20	--	--	--	--

Table 1  
Soil Analytical Results - Total Petroleum Hydrocarbons and BTEX  
Northern Inactive Waste Site  
Phillips 66 Santa Maria Refinery  
(all results in milligrams per kilogram)

Sample ID	Depth (feet)	Sample Date	TPH Gasoline (C4-C12)	TPH Diesel (C13-C22)	TPH Motor Oil (C23-C40)	Benzene	Toluene	Ethylbenzene	Total Xylenes
HA-42	18.5	10/2/2017	<20	<10	<20	--	--	--	--
HA-42	20	10/2/2017	<20	<10	<20	--	--	--	--
HA-42	25	10/2/2017	<20	<10	<20	--	--	--	--
HA-43	1	9/28/2017	<20	<10	<b>67</b>	--	--	--	--
HA-43	3	9/28/2017	<20	<10	<20	--	--	--	--
HA-43	8	9/28/2017	<20	<10	<20	--	--	--	--
HA-43	9	10/4/2017	<20	<10	<b>62</b>	--	--	--	--
HA-43	15	10/4/2017	<20	<10	<20	--	--	--	--
HA-43	20	10/4/2017	<20	<10	<20	--	--	--	--
HA-44	1	9/28/2017	<20	<10	<20	--	--	--	--
HA-44	3	9/28/2017	<20	<10	<20	--	--	--	--
HA-44	8	9/28/2017	<20	<10	<20	--	--	--	--
HA-44	10	10/4/2017	<20	<10	<20	--	--	--	--
HA-44	15	10/4/2017	<20	<10	<20	--	--	--	--
HA-45	1	9/29/2017	<20	<10	<20	--	--	--	--
HA-45	3	9/29/2017	<20	<10	<20	--	--	--	--
HA-45	8	9/29/2017	<20	<10	<b>8.4 J</b>	--	--	--	--
HA-45	10	10/4/2017	<20	<10	<20	--	--	--	--
HA-45	15	10/4/2017	<20	<b>2.6 J</b>	<20	--	--	--	--
HA-45	20	10/4/2017	<20	<b>1.5 J</b>	<20	--	--	--	--
HA-46	1	9/28/2017	<20	<10	<b>160</b>	--	--	--	--
HA-46	3	9/28/2017	<20	<10	<20	--	--	--	--
HA-46	8	9/28/2017	<20	<10	<20	--	--	--	--
HA-46	10	10/3/2017	<20	<10	<b>6.9 J</b>	--	--	--	--
HA-46	15	10/3/2017	<20	<10	<20	--	--	--	--
HA-46	20	10/3/2017	<20	<10	<20	--	--	--	--
HA-47	1	9/29/2017	<20	<10	<20	--	--	--	--
HA-47	3	9/29/2017	<20	<10	<20	--	--	--	--
HA-47	8	9/29/2017	<20	<10	<20	--	--	--	--
HA-47	10	10/2/2017	<20	<10	<20	--	--	--	--
HA-47	15	10/2/2017	<20	<10	<20	--	--	--	--
HA-47	20	10/2/2017	<20	<10	<20	--	--	--	--
HA-47	23	10/2/2017	<20	<10	<20	--	--	--	--
HA-48	1	9/29/2017	<20	<10	<20	--	--	--	--
HA-48	3	9/29/2017	<20	<10	<20	--	--	--	--
HA-48	8	9/29/2017	<20	<10	<20	--	--	--	--
HA-48	10	10/3/2017	<20	<10	<b>15 J</b>	--	--	--	--
HA-48	15	10/3/2017	<20	<10	<20	--	--	--	--
HA-48	18	10/3/2017	<20	<10	<20	--	--	--	--
HA-48	20	10/3/2017	<20	<10	<20	--	--	--	--
HA-49	1	10/4/2017	<20	<10	<b>27</b>	--	--	--	--
HA-49	3	10/4/2017	<20	<10	<20	--	--	--	--
HA-49	5	10/4/2017	<20	<10	<20	--	--	--	--
HA-49	10	10/5/2017	<20	<10	<20	--	--	--	--
HA-49	15	10/5/2017	<20	<10	<20	--	--	--	--
<b>TIER 1 ESLs</b>			<b>100</b>	<b>230</b>	<b>5,100</b>	<b>0.044</b>	<b>2.9</b>	<b>1.4</b>	<b>2.3</b>
<b>TTLC</b>						<b>0.50</b>			

Notes:

TPH: Total Petroleum Hydrocarbons, EPA Method 8015B/FFP

BTEX: Benzene, Toluene, Ethylbenzene, and Xylenes; EPA Method 8260B

**Bold:** Detected concentration

J: Estimated value. Analyte detected at a level less than the Practical Quantitation Limit and greater than or equal to the Method Detection Limit.

<##: Less than the Practical Quantitation Limit

#\* : Sample collected from direct push equipment

--: Not Analyzed

-Exceeds Tier 1 ESL

Tier 1 ESLs: Environmental Screening Limits

TTLC: Total Threshold Limit Concentration



**Table 2**  
**Soil Analytical Results - Asbestos**  
**Northern Inactive Waste Site**  
**Phillips 66 Santa Maria Refinery**

Sample ID	Depth	Sample Date	Amosite	Chrysotile
HA-20	1	9/26/2017	ND	ND
HA-20	3	9/26/2017	ND	ND
HA-20	5	9/26/2017	ND	ND
HA-20	8	9/26/2017	ND	ND
HA-20	10	10/2/2017	ND	ND
HA-21	1	9/26/2017	<1%	ND
HA-21	3	9/26/2017	ND	ND
HA-21	5	9/26/2017	ND	ND
HA-21	8	9/26/2017	ND	ND
HA-22	1	9/26/2017	2%	ND
HA-22	3	9/26/2017	3%	ND
HA-22	5	9/26/2017	<1%	ND
HA-22	8	9/26/2017	<1%	ND
HA-23	1	9/26/2017	ND	ND
HA-23	3	9/26/2017	ND	ND
HA-23	5	9/26/2017	ND	ND
HA-23	8	9/26/2017	ND	ND
HA-24	1	9/25/2017	<1%	ND
HA-24	3	9/25/2017	<1%	ND
HA-24	5	9/25/2017	<1%	ND
HA-24	8	9/26/2017	ND	ND
HA-25	1	9/25/2017	ND	<1%
HA-25	3	9/25/2017	ND	<1%
HA-25	5	9/25/2017	ND	<1%
HA-25	8	9/25/2017	ND	<1%
HA-26	1	9/25/2017	ND	<1%
HA-26	3	9/25/2017	ND	<1%
HA-26	5	9/25/2017	ND	<1%
HA-26	8	9/25/2017	ND	<1%
HA-26	10	10/4/2017	ND	ND
HA-26	13	10/4/2017	ND	ND
HA-26	15	10/4/2017	ND	ND
HA-27	1	9/25/2017	ND	<1%
HA-27	3	9/25/2017	ND	<1%
HA-27	5	9/25/2017	ND	ND
HA-27	8	9/25/2017	ND	<1%
HA-28	1	9/22/2017	ND	<1%
HA-28	3	9/25/2017	ND	<1%
HA-28	5	9/25/2017	ND	<1%
HA-28	8	9/25/2017	ND	ND
HA-29	1	9/22/2017	ND	<1%
HA-29	3	9/22/2017	ND	<1%
HA-29	6	9/22/2017	ND	<1%

**Table 2**  
**Soil Analytical Results - Asbestos**  
**Northern Inactive Waste Site**  
**Phillips 66 Santa Maria Refinery**

Sample ID	Depth	Sample Date	Amosite	Chrysotile
HA-29	8	9/22/2017	ND	<1%
HA-30	1	9/22/2017	ND	<1%
HA-30	3	9/22/2017	ND	<1%
HA-30	5	9/22/2017	ND	<1%
HA-30	8	9/22/2017	ND	<1%
HA-31	1.5	9/22/2017	ND	<1%
HA-31	3	9/22/2017	ND	<1%
HA-31	5	9/22/2017	ND	<1%
HA-31	8	9/22/2017	ND	<1%
HA-32(1)	1	9/21/2017	ND	ND
HA-32(3)	3	9/21/2017	ND	<1%
HA-32(3)	5	9/21/2017	ND	ND
HA-32(a)	1	9/29/2017	ND	ND
HA-32(a)	3	9/29/2017	<1%	<1%
HA-32(b)	3	9/29/2017	ND	ND
HA-32(b)	5	9/29/2017	ND	ND
HA-32(b)	8	9/29/2017	ND	ND
HA-32(b)	10	10/3/2017	ND	ND
HA-32(b)	15	10/3/2017	ND	ND
HA-33	1	9/21/2017	ND	ND
HA-33	3	9/21/2017	ND	ND
HA-33	5	9/21/2017	ND	ND
HA-33	8	9/22/2017	ND	ND
HA-34	2	9/20/2017	ND	ND
HA-34	4	9/20/2017	ND	ND
HA-34	6	9/20/2017	ND	ND
HA-34	8	9/20/2017	ND	ND
HA-34	10	10/3/2017	ND	ND
HA-35	1	9/27/2017	ND	ND
HA-35	3	9/27/2017	ND	ND
HA-35	5	9/27/2017	ND	ND
HA-35	8	9/27/2017	ND	ND
HA-36	1	9/26/2017	ND	ND
HA-36	3	9/26/2017	<1%	ND
HA-36	5	9/26/2017	ND	ND
HA-36	8	9/26/2017	ND	ND
HA-36	8*	10/3/2017	ND	ND
HA-36	10	10/3/2017	ND	ND
HA-37-Insulation	1	9/20/2017	ND	50%
HA-37	1	9/20/2017	ND	ND
HA-37	3	9/20/2017	ND	ND
HA-37	4	9/20/2017	ND	ND
HA-37	6	9/20/2017	ND	ND

**Table 2**  
**Soil Analytical Results - Asbestos**  
**Northern Inactive Waste Site**  
**Phillips 66 Santa Maria Refinery**

Sample ID	Depth	Sample Date	Amosite	Chrysotile
HA-37	8	9/20/2017	ND	ND
HA-37	9	9/20/2017	2%	ND
HA-37	9*	10/3/2017	ND	ND
HA-37(a)	1	10/4/2017	ND	2%
HA-37(a)	3	10/4/2017	ND	ND
HA-37(a)	5	10/4/2017	ND	<1%
HA-37(a)	10	10/4/2017	ND	ND
HA-37(a)	15	10/4/2017	ND	ND
HA-38	1	9/20/2017	ND	ND
HA-38	3	9/20/2017	ND	ND
HA-39	1	9/27/2017	<1%	2%
HA-39	3	9/28/2017	ND	<1%
HA-39	5	9/28/2017	ND	<1%
HA-39	8	9/28/2017	ND	<1%
HA-39	10	10/5/2017	ND	ND
HA-39	15	10/5/2017	ND	ND
HA-40	1	9/27/2017	ND	ND
HA-40	3	9/27/2017	ND	ND
HA-40	5	9/27/2017	ND	ND
HA-40	8	9/27/2017	ND	ND
HA-41	1	9/27/2017	ND	ND
HA-41	3	9/27/2017	ND	ND
HA-41	5	9/27/2017	ND	ND
HA-41	8	9/27/2017	ND	ND
HA-42	1	9/28/2017	ND	<1%
HA-42	3	9/28/2017	ND	<1%
HA-42	5	9/28/2017	ND	ND
HA-42	8	9/28/2017	ND	ND
HA-42	10	10/2/2017	ND	ND
HA-43	1	9/28/2017	ND	<1%
HA-43	3	9/28/2017	ND	<1%
HA-43	5	9/28/2017	ND	ND
HA-43	8	9/28/2017	ND	<1%
HA-44	1	9/28/2017	ND	<1%
HA-44	3	9/28/2017	ND	<1%
HA-44	5	9/28/2017	ND	ND
HA-44	8	9/28/2017	ND	ND
HA-44	10	10/4/2017	ND	ND
HA-45	1	9/29/2017	ND	ND
HA-45	3	9/29/2017	ND	ND
HA-45	8	9/29/2017	ND	ND
HA-46	1	9/28/2017	ND	<1%
HA-46	3	9/28/2017	ND	<1%

**Table 2**  
**Soil Analytical Results - Asbestos**  
**Northern Inactive Waste Site**  
**Phillips 66 Santa Maria Refinery**

Sample ID	Depth	Sample Date	Amosite	Chrysotile
HA-46	5	9/28/2017	ND	ND
HA-46	8	9/28/2017	ND	<1%
HA-46	10	10/3/2017	ND	ND
HA-46	15	10/3/2017	ND	ND
HA-47	1	9/29/2017	ND	ND
HA-47	3	9/29/2017	ND	ND
HA-47	5	9/29/2017	ND	ND
HA-47	8	9/29/2017	ND	ND
HA-47	10	10/2/2017	ND	ND
HA-48	1	9/29/2017	ND	ND
HA-48	3	9/29/2017	ND	ND
HA-48	5	9/29/2017	ND	ND
HA-48	8	9/29/2017	ND	ND
HA-48	10	10/3/2017	ND	ND
HA-49	1	10/4/2017	ND	ND
HA-49	3	10/4/2017	ND	ND
HA-49	5	10/4/2017	ND	ND
HA-49	10	10/5/2017	ND	ND
<b>TTLC</b>			<b>1%</b>	<b>1%</b>

Notes:

EPA Method 600/R-93/116

**Bold:** Detected concentration

ND: Not-detected

 -Exceeds TTLC of 1%

#\* : Sample collected from direct push equipment

TTLC: Total Threshold Limit Concentration

**Table 3**  
**Soil Analytical Results - Volatile Organic Compounds**  
**Northern Inactive Waste Site**  
**Phillip 66 Santa Maria Refinery**  
**(all results in miligrams per kilogram)**

Sample ID	Depth	Sample Date	1,1,1,2-Tetrachloroethane	1,1,1-Trichloroethane	1,1,2,2-Tetrachloroethane	1,1,2-Trichloro-1,2,2-trifluoroethane	1,1,2-Trichloroethane	1,1-Dichloroethane	1,1-Dichloroethene	1,1-Dichloropropene	1,2,3-Trichlorobenzene	1,2,3-Trichloropropane	1,2,4-Trichlorobenzene	1,2,4-Trimethylbenzene	1,2-Dibromo-3-chloropropane	1,2-Dibromoethane	1,2-Dichlorobenzene	1,2-Dichloroethane
HA-26	1.00	9/25/2017	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<b>0.0079</b>	<0.005	<0.005	<0.005	<0.005
HA-32(1)	1.00	9/21/2017	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
HA-37	8.00	9/20/2017	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<b>0.0072</b>	<0.005	<0.005	<0.005	<0.005
HA-37(a)	5.00	10/4/2017	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
<b>TIER 1 ESLs</b>			<b>0.010</b>	<b>7.8</b>	<b>0.018</b>		<b>0.070</b>	<b>0.20</b>	<b>0.55</b>				<b>1.5</b>		<b>0.0045</b>	<b>0.00033</b>	<b>1.6</b>	<b>0.0045</b>
<b>TTLc</b>								<b>0.7</b>										<b>0.5</b>

**Table 3**  
**Soil Analytical Results - Volatile Organic Compounds**  
**Northern Inactive Waste Site**  
**Phillip 66 Santa Maria Refinery**  
**(all results in miligrams per kilogram)**

Sample ID	Depth	Sample Date	1,2-Dichloropropane	1,3,5-Trimethylbenzene	1,3-Dichlorobenzene	1,3-Dichloropropane	1,4-Dichlorobenzene	2,2-Dichloropropane	2-Chlorotoluene	4-Chlorotoluene	Benzene	Bromobenzene	Bromochloromethane	Bromodichloromethane	Bromoform	Bromomethane	Carbon tetrachloride	Chlorobenzene
HA-26	1.00	9/25/2017	<0.005	<b>0.0047 J</b>	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
HA-32(1)	1.00	9/21/2017	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
HA-37	8.00	9/20/2017	<0.005	<b>0.0030 J</b>	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<b>0.0025 J</b>	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
HA-37(a)	5.00	10/4/2017	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005
<b>TIER 1 ESLs</b>			<b>0.12</b>		<b>7.4</b>		<b>0.59</b>				<b>0.044</b>			<b>0.52</b>	<b>1.7</b>	<b>0.30</b>	<b>0.048</b>	<b>1.5</b>
<b>TTLc</b>							<b>7.5</b>				<b>0.5</b>						<b>0.5</b>	<b>100</b>

**Table 3**  
**Soil Analytical Results - Volatile Organic Compounds**  
**Northern Inactive Waste Site**  
**Phillip 66 Santa Maria Refinery**  
**(all results in miligrams per kilogram)**

Sample ID	Depth	Sample Date	Chloroethane	Chloroform	Chloromethane	cis-1,2-Dichloroethene	cis-1,3-Dichloropropene	Dibromochloromethane	Dibromomethane	Dichlorodifluoromethane	Ethylbenzene	Hexachlorobutadiene	Isopropylbenzene	Methyl t-butyl ether	Methylene chloride	Naphthalene	n-Butylbenzene	n-Propylbenzene
HA-26	1.00	9/25/2017	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0024 J	<0.005	0.0019 J	<0.005	<0.01	<0.005	<0.005	0.0019 J
HA-32(1)	1.00	9/21/2017	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
HA-37	8.00	9/20/2017	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.0022 J	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005
HA-37(a)	5.00	10/4/2017	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	0.00054 J	<0.01	<0.005	<0.005	<0.005
TIER 1 ESLs			1.1	0.068	29	0.19		3.8			1.4	0.68		0.023	0.077	0.033		
TTLC																		

**Table 3**  
**Soil Analytical Results - Volatile Organic Compounds**  
**Northern Inactive Waste Site**  
**Phillip 66 Santa Maria Refinery**  
**(all results in milligrams per kilogram)**

Sample ID	Depth	Sample Date	o-Xylene	p- & m-Xylenes	p-Isopropyltoluene	sec-Butylbenzene	Styrene	tert-Butylbenzene	Tetrachloroethene	Toluene	Total Xylenes	trans-1,2-Dichloroethene	trans-1,3-Dichloropropene	Trichloroethene	Trichlorofluoromethane	Vinyl chloride
HA-26	1.00	9/25/2017	<b>0.0048 J</b>	<b>0.0040 J</b>	<b>0.0025 J</b>	<b>0.0017 J</b>	<0.005	<0.005	<0.005	<0.005	<b>0.0089 J</b>	<0.005	<0.005	<0.005	<0.005	<0.005
HA-32(1)	1.00	9/21/2017	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<b>0.0018 J</b>	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
HA-37	8.00	9/20/2017	<b>0.0034 J</b>	<b>0.0043 J</b>	<b>0.0018 J</b>	<0.005	<0.005	<0.005	<0.005	<b>0.0045 J</b>	<b>0.0077 J</b>	<0.005	<0.005	<0.005	<0.005	<0.005
HA-37(a)	5.00	10/4/2017	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.005	<0.01	<0.005	<0.005	<0.005	<0.005	<0.005
<b>TIER 1 ESLs</b>							<b>1.5</b>		<b>0.42</b>	<b>2.9</b>	<b>2.3</b>	<b>0.67</b>		<b>0.46</b>		<b>0.0082</b>
<b>TTLc</b>									<b>0.7</b>					<b>0.5</b>		<b>0.2</b>


Notes:

EPA Method 8260B

**Bold:** Detected concentration

J: Estimated value. Analyte detected at a level less than the Practical Quantitation Limit and greater than or equal to the Method Detection Limit.

<##: Less than the Practical Quantitation Limit

 -Exceeds Tier 1 ESL

Tier 1 ESLs: Environmental Screening Limits

TTLc: Total Threshold Limit Concentration



Table 4  
Soil Analytical Results - Polynuclear Aromatic Hydrocarbons  
Northern Inactive Waste Site  
Phillips 66 Santa Maria Refinery  
(all results in milligrams per kilogram)

Sample ID	Depth	Sample Date	Acenaphthene	Acenaphthylene	Anthracene	Benzo(a)anthracene	Benzo(a)pyrene	Benzo(b)fluoranthene	Benzo(g,h,i)perylene	Benzo(k)fluoranthene	Chrysene	Dibenz(a,h)anthracene	Fluoranthene	Fluorene	Indeno(1,2,3-cd)Pyrene	Naphthalene	Phenanthrene	Pyrene	BaPeq
HA-26	1	9/25/2017	<0.90	<0.90	1.8	1.5	1.6	<0.90	3.7	<0.90	3.1	<0.90	<0.90	<0.90	<0.90	2.6	1.5	<0.90	1.8
HA-32(1)	1	9/21/2017	0.80	<0.60	1.6	4.1	4.6	4.9	2.9	0.60	9.5	2.0	1.0	1.1	1.0	3.1	4.5	5.0	7.6
HA-37	8	9/20/2017	<0.59	<0.59	<0.59	0.46 J	<0.59	<0.59	0.40 J	<0.59	0.86	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	<0.59	0.046
HA-37(a)	5	10/4/2017	<0.64	<0.64	5.8	14	8.9	9.9	9.9	1.3	13	6.5	1.6	1.8	3.3	3.6	7.4	9.7	18.1
TIER 1 ESLs			16	13	2.8	0.16	0.016	0.16	2.5	1.6	3.8	0.016	60	8.9	0.16	0.023	11	85	0.016

Notes:

EPA Method 8270C-SIM

**Bold:** Detected concentration

J: Estimated value. Analyte detected at a level less than the Practical Quantitation Limit and greater than or equal to the Method Detection Limit.

<##: Less than the Practical Quantitation Limit

-Exceeds Tier 1 ESL

Tier 1 ESLs: Environmental Screening Limits

**Table 5**  
**Soil Analytical Results - Dioxins and Furans**  
**Northern Inactive Waste Site**  
**Phillips 66 Santa Maria Refinery**  
**(all results in picograms per gram)**

Sample ID	Depth	Sample Date	1,2,3,4,6,7,8-HpCDD	1,2,3,4,6,7,8-HpCDF	1,2,3,4,7,8,9-HpCDF	1,2,3,4,7,8-HxCDD	1,2,3,4,7,8-HxCDF	1,2,3,6,7,8-HxCDD	1,2,3,6,7,8-HxCDF	1,2,3,7,8,9-HxCDD	1,2,3,7,8,9-HxCDF	1,2,3,7,8-PeCDD	1,2,3,7,8-PeCDF	2,3,4,6,7,8-HxCDF	2,3,4,7,8-PeCDF
HA-26	1	9/25/2017	1,940	218	14.9	8.05	5.35	42.4	4.52 J	21.8	<0.799	14.4	1.04 J	6.85	1.47 J
HA-26	3	9/25/2017	215	24.7	1.73 J	0.857 J	0.616 J	4.61 J	0.540 J	2.82 J	<0.325	1.50 J	<0.217	0.814 J	<0.243
HA-32(1)	1	9/21/2017	7,230	956	57.6	17.7	21.5	140	13.9	59.1	4.44 J	23.3	2.11 J	25.8	3.33 J
HA-37	8	9/20/2017	405	49	3.93 J	1.73 J	1.21 J	7.16	0.911 J	4.23 J	<0.478	1.73 J	<0.271	1.56 J	0.553 J
HA-37(a)	5	10/4/2017	634	57.5	6.02 J	5.99 J	2.36 J	19.3	2.10 J	18.9	3.36 J	9.35	<1.88	3.29 J	<1.94
HA-37(a)	10	10/4/2017	0.847 J	<0.335	<0.322	<0.291	<0.360	<0.309	<0.346	<0.275	<0.387	<0.218	<0.196	<0.357	<0.206
TIER 1 ESLs															
TTLC															

**Table 5**  
**Soil Analytical Results - Dioxins and Furans**  
**Northern Inactive Waste Site**  
**Phillips 66 Santa Maria Refinery**  
**(all results in picograms per gram)**

Sample ID	Depth	Sample Date	2,3,7,8-TCDD	2,3,7,8-TCDF	OCDD	OCDF	Total HpCDD	Total HpCDF	Total HxCDD	Total HxCDF	Total PeCDD	Total PeCDF	Total TCDD	Total TCDF	Dioxin TEQ
HA-26	1	9/25/2017	<b>6.34</b>	<b>0.575 J</b>	<b>31,600</b>	<b>1,510</b>	<b>3,900</b>	<b>1,060</b>	<b>266</b>	<b>200</b>	<b>68.8</b>	<b>29.9</b>	<b>24.9</b>	<b>9.48</b>	<b>62</b>
HA-26	3	9/25/2017	<b>0.636 J</b>	<0.134	<b>3,090</b>	<b>161</b>	<b>428</b>	<b>115</b>	<b>28.6</b>	<b>20.9</b>	<b>7.37</b>	<b>2.61 J</b>	<b>1.40</b>	<b>0.493 J</b>	<b>6.6</b>
HA-32(1)	1	9/21/2017	<b>10.3</b>	<b>3.07</b>	<b>104,000</b>	<b>7,190</b>	<b>14,000</b>	<b>4,910</b>	<b>696</b>	<b>841</b>	<b>128</b>	<b>117</b>	<b>57.4</b>	<b>36.4</b>	<b>179</b>
HA-37	8	9/20/2017	<b>1.07</b>	<0.192	<b>6,670</b>	<b>336</b>	<b>820</b>	<b>237</b>	<b>43.9</b>	<b>37.8</b>	<b>9.68</b>	<b>5.71</b>	<b>2.64</b>	<b>1.29</b>	<b>11</b>
HA-37(a)	5	10/4/2017	<b>4.94</b>	<1.14	<b>7,040</b>	<b>442</b>	<b>1,150</b>	<b>319</b>	<b>144</b>	<b>57.5</b>	<b>59.4</b>	<b>5.20 J</b>	<b>27.3</b>	<1.14	<b>29</b>
HA-37(a)	10	10/4/2017	<0.187	<0.138	<b>5.25 J</b>	<0.55	<b>1.77 J</b>	<0.335	<0.309	<0.387	<0.218	<0.206	<0.187	<0.138	<b>0.01</b>
<b>TIER 1 ESLs</b>			<b>4.9</b>												<b>4.9</b>
<b>TTLC</b>			<b>10,000</b>												

Notes:

EPA Method 8290

**Bold:** Detected concentration

J - Estimated value. Analyte detected at a level less than the Practical Quantitation Limit and greater than or equal to the Method Detection Limit.

<##: Less than the Practical Quantitation Limit

  -Exceeds Tier 1 ESL

Tier 1 ESLs: Environmental Screening Limits

TTLC: Total Threshold Limit Concentration

**Table 6**  
**Soil Analytical Results - Chlorinated Herbicides**  
**Northern Inactive Waste Site**  
**Phillips 66 Santa Maria Refinery**  
**(all results in milligrams per kilogram)**

Sample ID	Depth	Sample Date	2,4,5-T	2,4,5-TP (Silvex)	2,4-D	2,4-DB	Dalapon	Dicamba	Dichloroprop	Dinoseb
HA-26	1	9/25/2017	<0.082	<0.082	<0.55	<1.1	<1.4	<0.055	<0.55	<0.19
HA-32(1)	1	9/21/2017	<0.26	<0.26	<1.8	<3.5	<4.4	<0.18	<1.8	<0.62
HA-37	8	9/20/2017	<0.090	<0.090	<0.6	<1.2	<1.5	<0.060	<0.60	<0.21
HA-37(a)	5	10/4/2017	<0.30	<0.30	<2.0	<4.0	<5.0	<0.20	<2.0	<0.70
<b>TTL</b>				10						

Notes:

EPA Method 8151A

**Bold:** Detected concentration

<##: Less than the Practical Quantitation Limit

TTL: Total Threshold Limit Concentration

**Table 7**  
**Soil Analytical Results - Organo-Phosphorus Pesticides**  
**Northern Inactive Waste Site**  
**Phillip 66 Santa Maria Refinery**  
**(all results in miligrams per kilogram)**

Sample ID	Depth	Sample Date	Azinphos methyl	Bolstar	Chlorpyrifos	Coumaphos	Demeton O/S	Diazinon	Dichlorvos	Disulfoton	Ethoprop	Fensulfothion	Fenthion	Merphos	Methyl parathion	Mevinphos	Naled	Phorate	Ronnel (Fenchlorphos)	Stirophos (Tetrachlorvinphos)	Tokuthion (Prothiofos)	Trichloronate
HA-26	1	9/25/2017	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30	<0.30
HA-32(1)	1	9/21/2017	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16	<0.16
HA-37	8	9/20/2017	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20	<0.20
HA-37(a)	5	10/4/2017	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25	<0.25

Notes:

EPA Method 8141A

**Bold:** Detected concentration

<##: Less than the Practical Quantitation Limit

**Table 8**  
**Soil Analytical Results - Temperature, pH, and Total Cyanide**  
**Northern Inactive Waste Site**  
**Phillips 66 Santa Maria Refinery**

Sample ID	Depth	Sample Date	Temperature (°Celsius)	pH	Total Cyanide (mg/kg)
HA-26	1	9/25/2017	19.2	7.32	0.73
HA-32(1)	1	9/21/2017	23.1	3.35	3.3
HA-37	8	9/20/2017	19.4	7.60	<0.50
HA-37(a)	5	10/4/2017	25	6.81	0.20 J
<b>TIER 1 ESLs</b>					0.0036

Notes:

Temperature and pH; EPA Method 9045D

Total Cyanide; EPA Method 9012

**Bold:** Detected concentration

J: Estimated value. Analyte detected at a level less than the Practical Quantitation Limit and greater than or equal to the Method Detection Limit.

<##: Less than the Practical Quantitation Limit

-Exceeds Tier 1 ESL

Tier 1 ESLs: Environmental Screening Limits

**Table 9**  
**Soil Analytical Results - Organochlorine Pesticides and PCBs**  
**Northern Inactive Waste Site**  
**Phillips 66 Santa Maria Refinery**  
**(all results in milligrams per kilogram)**

Sample ID	Depth	Sample Date	4,4'-DDD	4,4'-DDE	4,4'-DDT	Aldrin	alpha-BHC	beta-BHC	Chlordane (Technical)	delta-BHC	Dieldrin	Endosulfan I	Endosulfan II	Total Endosulfans	Endosulfan sulfate	Endrin	Endrin aldehyde
HA-26	1	9/25/2017	<0.068	<0.068	<0.068	<0.068	<0.068	<0.068	<6.8	<0.068	<0.068	<0.068	<0.068	<0.13	<0.068	<0.068	<0.068
HA-32(1)	1	9/21/2017	<0.014	<b>0.025</b>	<b>0.062</b>	<0.014	<0.014	<0.014	<1.4	<0.014	<b>0.015</b>	<0.014	<0.014	<0.028	<0.014	<0.014	<0.014
HA-37	8	9/20/2017	<0.062	<0.062	<0.062	<0.062	<0.062	<0.062	<6.2	<0.062	<0.062	<0.062	<0.062	<0.12	<0.062	<0.062	<0.062
HA-37(a)	5	10/4/2017	<0.05	<0.05	<0.05	<0.05	<0.05	<0.05	<5.0	<0.05	<0.05	<0.05	<0.05	<0.10	<0.05	<0.05	<0.05
<b>TIER 1 ESLs</b>			<b>2.7</b>	<b>1.9</b>	<b>1.9</b>	<b>0.036</b>			<b>0.48</b>		<b>0.00017</b>			<b>0.0046</b>		<b>0.00065</b>	
<b>TTLc</b>			<b>1.0</b>	<b>1.0</b>	<b>1.0</b>	<b>1.4</b>					<b>8.0</b>					<b>0.20</b>	

**Table 9**  
**Soil Analytical Results - Organochlorine Pesticides and PCBs**  
**Northern Inactive Waste Site**  
**Phillips 66 Santa Maria Refinery**  
**(all results in miligrams per kilogram)**

Sample ID	Depth	Sample Date	gamma-BHC (Lindane)	Heptachlor	Heptachlor epoxide	Methoxychlor	PCB-1016	PCB-1221	PCB-1232	PCB-1242	PCB-1248	PCB-1254	PCB-1260	Total PCB's (Summation)	Toxaphene
HA-26	1	9/25/2017	<0.068	<0.068	<0.068	<0.068	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<1.4	<6.8
HA-32(1)	1	9/21/2017	<0.014	<0.014	<0.014	<0.014	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<0.27	<1.4
HA-37	8	9/20/2017	<0.062	<0.062	<0.062	<0.062	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<1.2	<6.2
HA-37(a)	5	10/4/2017	<0.05	<0.05	<0.05	<0.05	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<1.0	<5.0
<b>TIER 1 ESLs</b>				<b>0.00077</b>	<b>0.00042</b>	<b>19</b>								<b>0.25</b>	<b>0.00042</b>
<b>TTLc</b>				<b>4.7</b>		<b>100</b>									<b>5.0</b>

Notes:

EPA Method 8080

**Bold:** Detected concentration

<##: Less than the Practical Quantitation Limit

PCB: Polychlorinate Biphenyls

   -Exceeds Tier 1 ESL

Tier 1 ESLs: Environmental Screening Limits

TTLc: Total Threshold Limit Concentration



**Table 10**  
**Soil Analytical Results - Total Metals/Hexavalent Chromium**  
**Northern Inactive Waste Site**  
**Phillips 66 Santa Maria Refinery**  
**(all results in milligrams per kilogram)**

Sample ID	Depth	Sample Date	Antimony	Arsenic	Barium	Beryllium	Cadmium	Chromium	Cobalt	Copper	Hexavalent Chromium
HA-26	1	9/25/2017	<5.0	1.4	14	0.16 J	0.55	20	2.9	7.2	2.4
HA-26	3	9/25/2017	<5.0	1.8	15	0.13 J	0.21 J	8.8	1.3 J	2.4	0.60 J
HA-32(1)	1	9/21/2017	<5.0	1.1	51	0.064 J	0.23 J	24	0.90 J	6.8	0.67 J
HA-37	8	9/20/2017	<5.0	1.3	14	0.12 J	0.15 J	15	1.4 J	2.7	1.0
HA-37(a)	5	10/4/2017	<5.0	2.0	7.5	0.22 J	1.3	19	3.4	7.9	1.5 J
HA-37(a)	10	10/4/2017	<5.0	1.6	11	0.11 J	0.077 J	8.0	1.1 J	1.4	0.55 J
TIER 1 ESLs			31	0.067	3,000	42	39		23	3,100	0.30
TTLC			500	50	10,000	75	100	2,500	8,000	2,500	500

**Table 10**  
**Soil Analytical Results - Total Metals/Hexavalent Chromium**  
**Northern Inactive Waste Site**  
**Phillips 66 Santa Maria Refinery**  
**(all results in milligrams per kilogram)**

Sample ID	Depth	Sample Date	Lead	Mercury	Molybdenum	Nickel	Selenium	Silver	Thallium	Vanadium	Zinc
HA-26	1	9/25/2017	9.7	0.13 J	24	130	1.1	<0.50	<5.0	230	33
HA-26	3	9/25/2017	2.3 J	<0.16	2.8	7.6	<1.0	<0.50	<5.0	14	15
HA-32(1)	1	9/21/2017	41	<0.16	23	38	4.7	<0.50	<5.0	71	11
HA-37	8	9/20/2017	3.6	0.052 J	1.7 J	13	<1.0	<0.50	<5.0	26	15
HA-37(a)	5	10/4/2017	3.8	0.050 J	23	110	1.1	<0.50	<5.0	170	31
HA-37(a)	10	10/4/2017	1.6 J	<0.16	0.20 J	4.2	<1.0	<0.50	<5.0	7.4	6.8
TIER 1 ESLs			80	13	390	86	390	390	0.78	390	23,000
TTLC			1,000	20	3,500	2,000	100	500	700	2,400	5,000

Notes:

EPA Methods 6010B, 7199, and 7471A

**Bold:** Detected concentration

J: Estimated value. Analyte detected at a level less than the Practical Quantitation Limit and greater than or equal to the Method Detection Limit.

<##: Less than the Practical Quantitation Limit

-Exceeds Tier 1 ESL

Tier 1 ESLs: Environmental Screening Limits

TTLC: Total Threshold Limit Concentration

Table 11  
Perimeter Air Monitoring Analytical Results - Asbestos  
**Northern Inactive Waste Site**  
**Phillips 66 Santa Maria Refinery**  
(all results in fibers per cubic centimeter)

Sample ID	Landfill Investigation Activity	Air Sample Location	Concentration (f/cc)
20170918-01	Background Sample. Equipment staging only, no soil disturbance.	East Perimeter	0.006
20170920-01	Hand Auger	North Perimeter	<0.002
20170920-02	Hand Auger	East Perimeter	<0.002
20170920-03	Hand Auger	South Perimeter	<0.002
20170920-04	Hand Auger	West Perimeter	<0.002
20170920-05	Hand Auger	North Perimeter	<0.002
20170920-06	Hand Auger	East Perimeter	**
20170920-07	Hand Auger	South Perimeter	<0.002
20170920-08	Hand Auger	West Perimeter	<0.002
20170920-09	Hand Auger	North Perimeter	<0.002
20170920-10	Hand Auger	East Perimeter	<0.002
20170920-11	Hand Auger	South Perimeter	<0.002
20170920-12	Hand Auger	West Perimeter	<0.002
20170921-01	Hand Auger	North Perimeter	<0.002
20170921-02	Hand Auger	East Perimeter	<0.002
20170921-03	Hand Auger	South Perimeter	<0.002
20170921-04	Hand Auger	West Perimeter	<0.002
20170921-05	Hand Auger	North Perimeter	<0.002
20170921-06	Hand Auger	East Perimeter	<0.002
20170921-07	Hand Auger	South Perimeter	Not Analyzed
20170921-08	Hand Auger	West Perimeter	<0.002
20170922-01	Hand Auger	North Perimeter	0.003
20170922-02	Hand Auger	East Perimeter	<0.002
20170922-03	Hand Auger	South Perimeter	0.003
20170922-04	Hand Auger	West Perimeter	0.002
20170922-05	Hand Auger	North Perimeter	<0.002
20170922-06	Hand Auger	East Perimeter	<0.002
20170922-07	Hand Auger	South Perimeter	<0.002
20170922-08	Hand Auger	West Perimeter	<0.002
20170922-09	Hand Auger	North Perimeter	Not Analyzed
20170922-10	Hand Auger	East Perimeter	Not Analyzed
20170922-11	Hand Auger	South Perimeter	<0.002
20170922-12	Hand Auger	West Perimeter	<0.002

Table 11  
Perimeter Air Monitoring Analytical Results - Asbestos  
**Northern Inactive Waste Site**  
**Phillips 66 Santa Maria Refinery**  
(all results in fibers per cubic centimeter)

Sample ID	Landfill Investigation Activity	Air Sample Location	Concentration (f/cc)
20170925-01	Hand Auger	North Perimeter	0.006
20170925-02	Hand Auger	East Perimeter	0.002
20170925-03	Hand Auger	South Perimeter	<0.002
20170925-04	Hand Auger	West Perimeter	0.003
20170925-05	Hand Auger	North Perimeter	0.005
20170925-06	Hand Auger	East Perimeter	<0.002
20170925-07	Hand Auger	South Perimeter	<0.002
20170925-08	Hand Auger	West Perimeter	0.005
20170925-09	Hand Auger	North Perimeter	<0.002
20170925-10	Hand Auger	East Perimeter	<0.002
20170925-11	Hand Auger	South Perimeter	<0.002
20170925-12	Hand Auger	West Perimeter	<0.002
20170926-01	Hand Auger	North Perimeter	0.007
20170926-02	Hand Auger	East Perimeter	0.004
20170926-03	Hand Auger	South Perimeter	0.002
20170926-04	Hand Auger	West Perimeter	0.004
20170926-05	Hand Auger	North Perimeter	0.002
20170926-06	Hand Auger	East Perimeter	<0.002
20170926-07	Hand Auger	South Perimeter	0.003
20170926-08	Hand Auger	West Perimeter	0.006
20170926-09	Hand Auger	North Perimeter	Not Analyzed***
20170926-10	Hand Auger	East Perimeter	Not Analyzed***
20170926-11	Hand Auger	South Perimeter	0.002
20170926-12	Hand Auger	West Perimeter	<0.002
20170927-01	Hand Auger	North Perimeter	<0.002
20170927-02	Hand Auger	East Perimeter	0.002
20170927-03	Hand Auger	South Perimeter	0.003
20170927-04	Hand Auger	West Perimeter	0.003
20170927-05	Hand Auger	North Perimeter	0.002
20170927-06	Hand Auger	East Perimeter	0.003
20170927-07	Hand Auger	South Perimeter	<0.002
20170927-08	Hand Auger	West Perimeter	0.002
20170927-09	Hand Auger	North Perimeter	0.003
20170927-10	Hand Auger	East Perimeter	0.004

Table 11  
Perimeter Air Monitoring Analytical Results - Asbestos  
**Northern Inactive Waste Site**  
**Phillips 66 Santa Maria Refinery**  
(all results in fibers per cubic centimeter)

Sample ID	Landfill Investigation Activity	Air Sample Location	Concentration (f/cc)
20170927-11	Hand Auger	South Perimeter	0.002
20170927-12	Hand Auger	West Perimeter	0.003
20170928-01	Hand Auger	North Perimeter	0.006
20170928-02	Hand Auger	East Perimeter	<0.002
20170928-03	Hand Auger	South Perimeter	<0.002
20170928-04	Hand Auger	West Perimeter	0.004
20170928-05	Hand Auger	North Perimeter	0.004
20170928-06	Hand Auger	East Perimeter	<0.002
20170928-07	Hand Auger	South Perimeter	0.005
20170928-08	Hand Auger	West Perimeter	<0.002
20170928-09	Hand Auger	North Perimeter	<0.002
20170928-10	Hand Auger	East Perimeter	0.002
20170928-11	Hand Auger	South Perimeter	<0.002
20170928-12	Hand Auger	West Perimeter	<0.002
20170929-01	Hand Auger	North Perimeter	<0.002
20170929-02	Hand Auger	East Perimeter	0.004
20170929-03	Hand Auger	South Perimeter	0.004
20170929-04	Hand Auger	West Perimeter	0.003
20170929-05	Hand Auger	North Perimeter	<0.002
20170929-06	Hand Auger	East Perimeter	<0.002
20170929-07	Hand Auger	South Perimeter	<0.002
20170929-08	Hand Auger	West Perimeter	0.003
20170929-09	Hand Auger	North Perimeter	0.003
20170929-10	Hand Auger	East Perimeter	<0.002
20170929-11	Hand Auger	South Perimeter	0.004
20170929-12	Hand Auger	West Perimeter	0.003
20171002-01	Direct Push	North Perimeter	0.003
20171002-02	Direct Push	East Perimeter	0.004
20171002-03	Direct Push	South Perimeter	<0.002
20171002-04	Direct Push	West Perimeter	<0.002
20171002-05	Direct Push	North Perimeter	<0.002
20171002-06	Direct Push	East Perimeter	<0.002
20171002-07	Direct Push	South Perimeter	0.004
20171002-08	Direct Push	West Perimeter	<0.002

Table 11  
Perimeter Air Monitoring Analytical Results - Asbestos  
**Northern Inactive Waste Site**  
**Phillips 66 Santa Maria Refinery**  
(all results in fibers per cubic centimeter)

Sample ID	Landfill Investigation Activity	Air Sample Location	Concentration (f/cc)
20171002-09	Direct Push	North Perimeter	0.003
20171002-10	Direct Push	East Perimeter	<0.002
20171002-11	Direct Push	South Perimeter	0.003
20171002-12	Direct Push	West Perimeter	<0.002
20171003-01	Direct Push	North Perimeter	0.002
20171003-02	Direct Push	East Perimeter	<0.002
20171003-03	Direct Push	South Perimeter	0.002
20171003-04	Direct Push	West Perimeter	<0.002
20171003-05	Direct Push	North Perimeter	0.002
20171003-06	Direct Push	East Perimeter	0.002
20171003-07	Direct Push	South Perimeter	<0.002
20171003-08	Direct Push	West Perimeter	<0.002
20171003-09	Direct Push	North Perimeter	<0.002
20171003-10	Direct Push	East Perimeter	<0.002
20171003-11	Direct Push	South Perimeter	<0.002
20171003-12	Direct Push	West Perimeter	<0.002
20171004-01	Direct Push	North Perimeter	0.004
20171004-02	Direct Push	East Perimeter	<0.002
20171004-03	Direct Push	South Perimeter	<0.002
20171004-04	Direct Push	West Perimeter	<0.002
20171004-05	Direct Push	North Perimeter	0.003
20171004-06	Direct Push	East Perimeter	0.002
20171004-07	Direct Push	South Perimeter	<0.002
20171004-08	Direct Push	West Perimeter	0.003
20171004-09	Direct Push	North Perimeter	<0.002
20171004-10	Direct Push	East Perimeter	*
20171004-11	Direct Push	South Perimeter	*
20171004-12	Direct Push	West Perimeter	*
20171005-01	Direct Push	North Perimeter	0.006
20171005-02	Direct Push	East Perimeter	0.003
20171005-03	Direct Push	South Perimeter	0.002
20171005-04	Direct Push	West Perimeter	0.008
20171005-05	Direct Push	North Perimeter	0.006
20171005-06	Direct Push	East Perimeter	0.002

Table 11  
 Perimeter Air Monitoring Analytical Results - Asbestos  
**Northern Inactive Waste Site**  
**Phillips 66 Santa Maria Refinery**  
 (all results in fibers per cubic centimeter)

Sample ID	Landfill Investigation Activity	Air Sample Location	Concentration (f/cc)
20171005-07	Direct Push	South Perimeter	0.003
20171005-08	Direct Push	West Perimeter	0.004
DOSH PEL			0.1
EPA Indoor Air Clearance Level			0.01

Notes:

f/cc = Fibers per cubic centimeter

Method = NIOSH 7400

\* Cassette overloaded (excessive dust or other materials collected on the filter prevented accurate fiber count)

\*\* Cassette filter damaged

\*\*\* Could not calculate sample run time due to generator malfunction

DOSH PEL: Division of Occupational Safety and Health Permissible Exposure Limit

# FIGURES



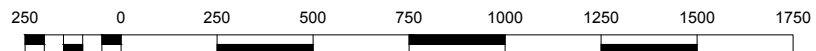




CALIFORNIA



SCALE IN MILE




SCALE IN FEET

REFERENCE: CA Digital Raster Graphics(<http://gis.ca.gov/casil/usgs.gov/>)  
7.5 Minute Series, Albers NAD83, Trimmed  
Block o3512a5, Dated 1965; Revised 1994

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3437 EMPRESA DR. SUITE A  
SAN LUIS OBISPO, CALIFORNIA  
PHONE: (805) 546-0455 FAX: (805) 546-0583

FOR:  **PHILLIPS 66**  
SANTA MARIA REFINERY  
NORTHERN INACTIVE WASTE SITE  
2555 WILLOW ROAD  
ARROYO GRANDE, CALIFORNIA

JOB NUMBER:  
185850432

DRAWN BY:  
JBL

CHECKED BY:

VICINITY MAP

KH

APPROVED BY:

KH

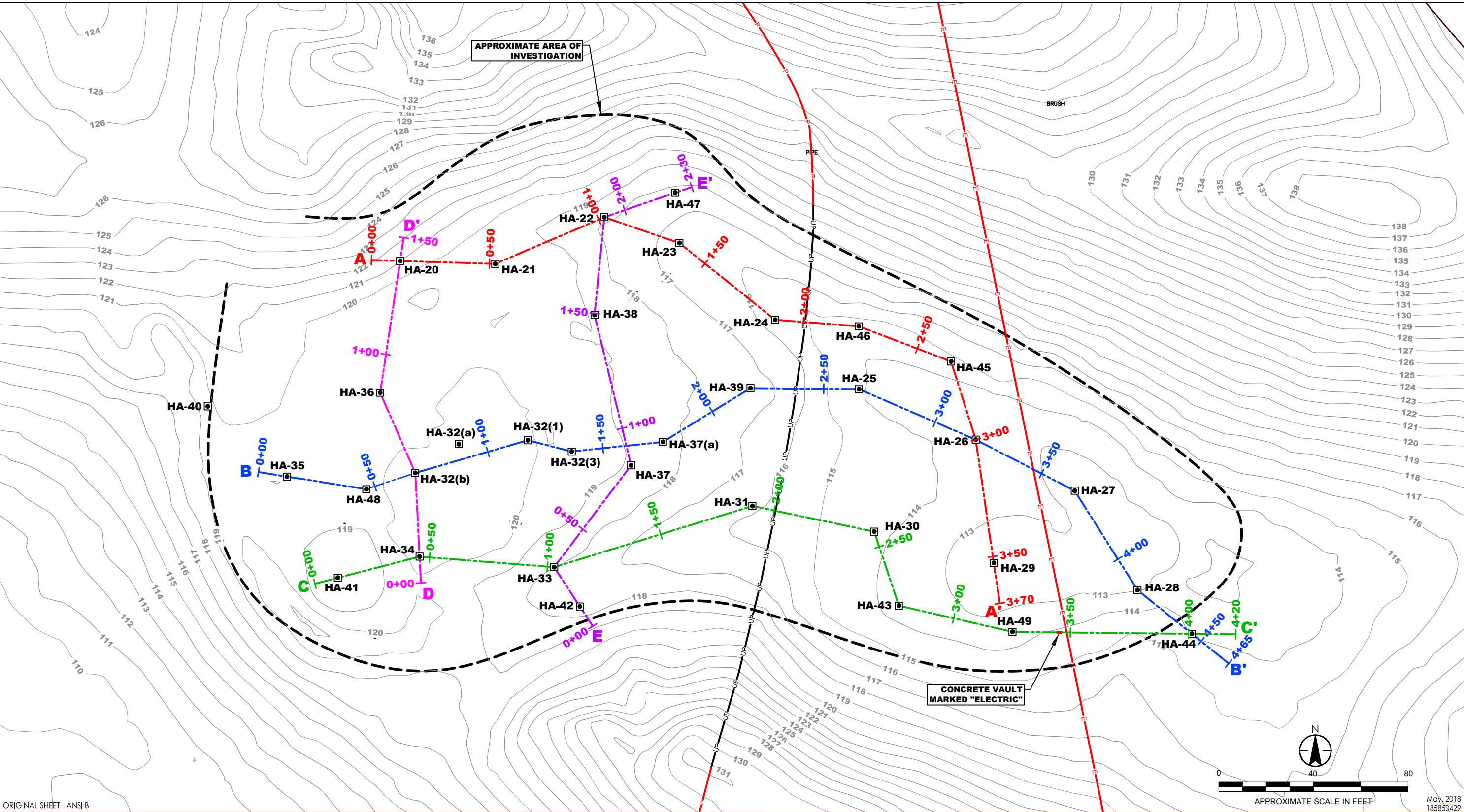
FIGURE:

1

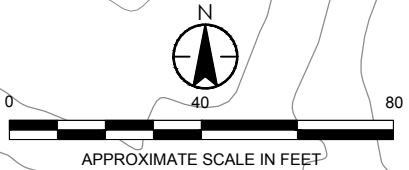
DATE:  
08/15/16



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2019/07/22 3:42 PM By: Lieberman, Justin



ORIGINAL SHEET - ANSI B



May, 2018  
185850429



3437 Empresa Drive, Suite A  
San Luis Obispo, California

**Central Coast Aerial Mapping, Inc.**  
710 Fiero Ln. #24 (formerly C&C Aerial Mapping)  
San Luis Obispo, California 93401  
Tel: (805)543-4307 Fax: (805)543-7257  
mail@aerial-maps.com

We comply with map accuracy standards from ASPRS and American Congress on surveying and mapping printed by U.S. Department of the Interior, except where ground is not visible, like areas of heavy trees, clear areas in-between trees with no stereo images, heavy brush, heavy shadow, or blind areas in the back of some structures

Photography Date: 5-16-2016

**LEGEND:**

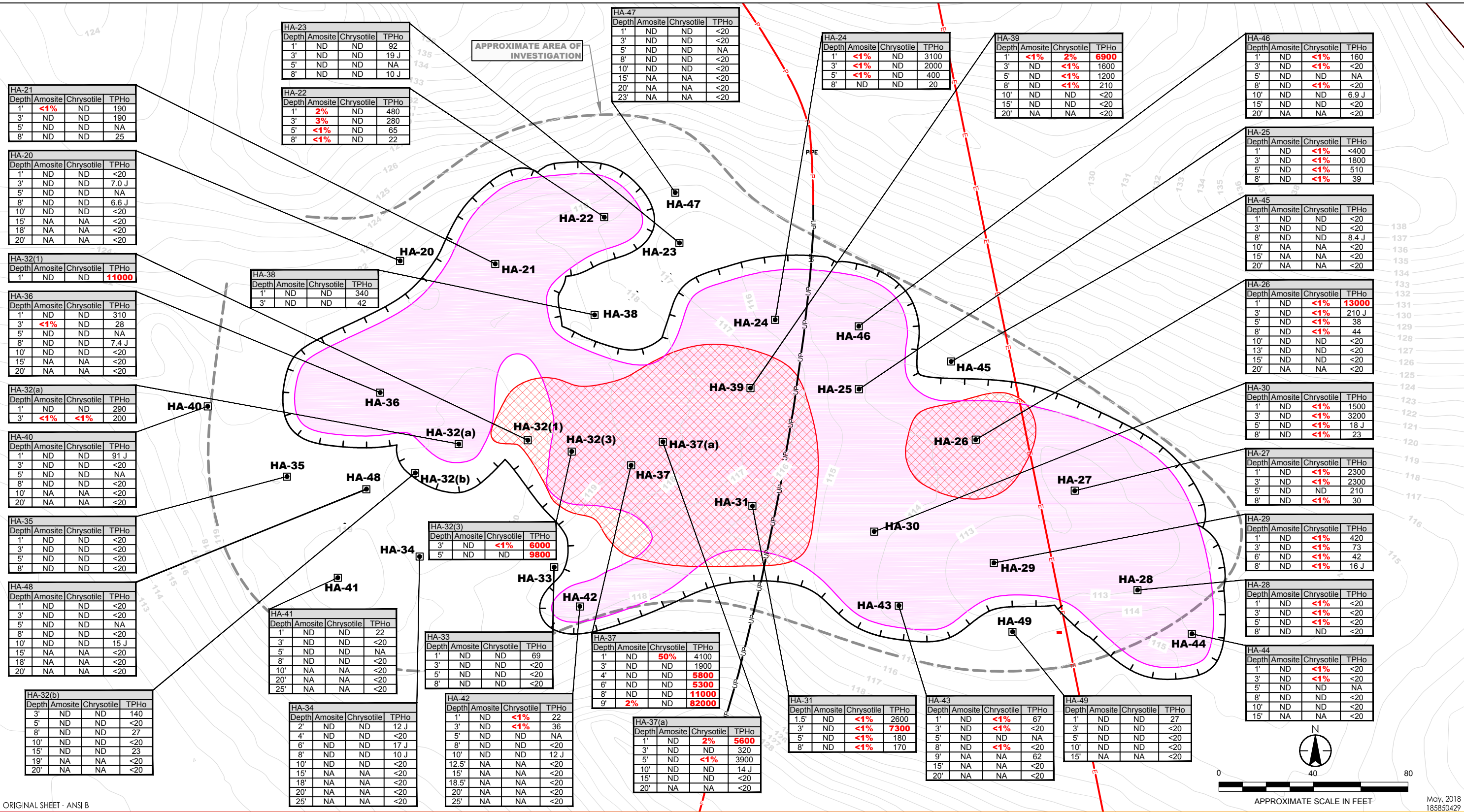
- SOIL BORING LOCATION
- ABANDONED 4" STEEL PIPE (ABOVEGROUND)
- ABANDONED 4" STEEL PIPE (UNDERGROUND)
- UNDERGROUND ELECTRIC
- APPROXIMATE EXTENT OF PROPOSED REMEDIAL EXCAVATION
- PROFILE ALIGNMENTS (SEE FIGURES 4 THROUGH 7)

Client/Project  
Phillips 66  
Santa Maria Refinery Northern Inactive Waste Site  
2555 Willow Road, Arroyo Grande, California

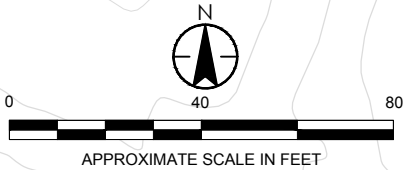
Figure No.  
2

Title  
Site Map showing Profile Alignments

V:\1858\inactive\185850429\_Former Northern Landfill Access\_Phillips 66\05\_report\_deliv dwgs\_design\cad\_figures\Analytical-Map.dwg  
2019/07/22 3:43 PM By: Lieberman, Justin



ORIGINAL SHEET - ANSI B



May, 2018  
185850429

3437 Empresa Drive, Suite A  
San Luis Obispo, California

LEGEND:

	SOIL BORING LOCATION
	ABANDONED 4" STEEL PIPE (ABOVEGROUND)
	ABANDONED 4" STEEL PIPE (UNDERGROUND)
	UNDERGROUND ELECTRIC
	APPROXIMATE EXTENT OF PROPOSED REMEDIAL EXCAVATION
	APPROXIMATE EXTENT OF TPHo IMPACTED SOIL GREATER THAN TIER 1 ESL
	APPROXIMATE EXTENT OF ASBESTOS IMPACTED SOIL

NOTE:

1. AMOSITE AND CHRYSOTILE CONCENTRATIONS REPORTED IN PERCENT OF DETECTION. **BOLD RED TEXT** INDICATES PERCENTAGE OF DETECTION.

2. TOTAL PETROLEUM HYDROCARBONS AS MOTOR OIL (TPHo) REPORTED IN MILLIGRAMS PER KILOGRAM (mg/kg). **BOLD RED TEXT** INDICATES CONCENTRATION ABOVE TIER 1 ESL OF 5,100.

Client/Project  
Phillips 66  
Santa Maria Refinery Northern Inactive Waste Site  
2555 Willow Road, Arroyo Grande, California

Figure No.  
**3**

Title  
Sample Results and  
Approximate Extent of Asbestos  
Containing Materials and  
TPH Motor Oil Impacted Soil



\\s1888\projects\1888\666\2019\07\23\45 PM By: Jaberian - Jaber

ORIGINAL SHEET - ANSI B



3437 Empresa Drive, Suite A  
San Luis Obispo, California  
www.stantec.com

### Legend

- 69 Soil Sample
- ND/ND - TPHo Result in mg/kg
- ND/ND - Amosite/Chrysotile Result in percentage
- Approximate extent of TPHo Impacted Soil Greater than Tier 1 ESL
- Approximate extent of Asbestos Impacted Soil Greater than Tier 1 ESL
- Sand with Trace Silt (SP)

**5,100** Bold Red Sample Result indicates TPHo concentration Greater than Tier 1 ESL OF 5,100 mg/kg

**<1%** Bold Red Sample Result indicates percent of asbestos detected

--- Approximate Excavation Profile along Alignment

Client/Project

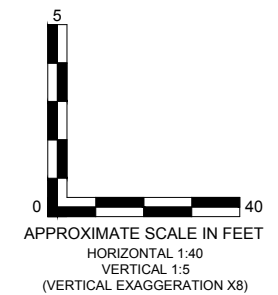
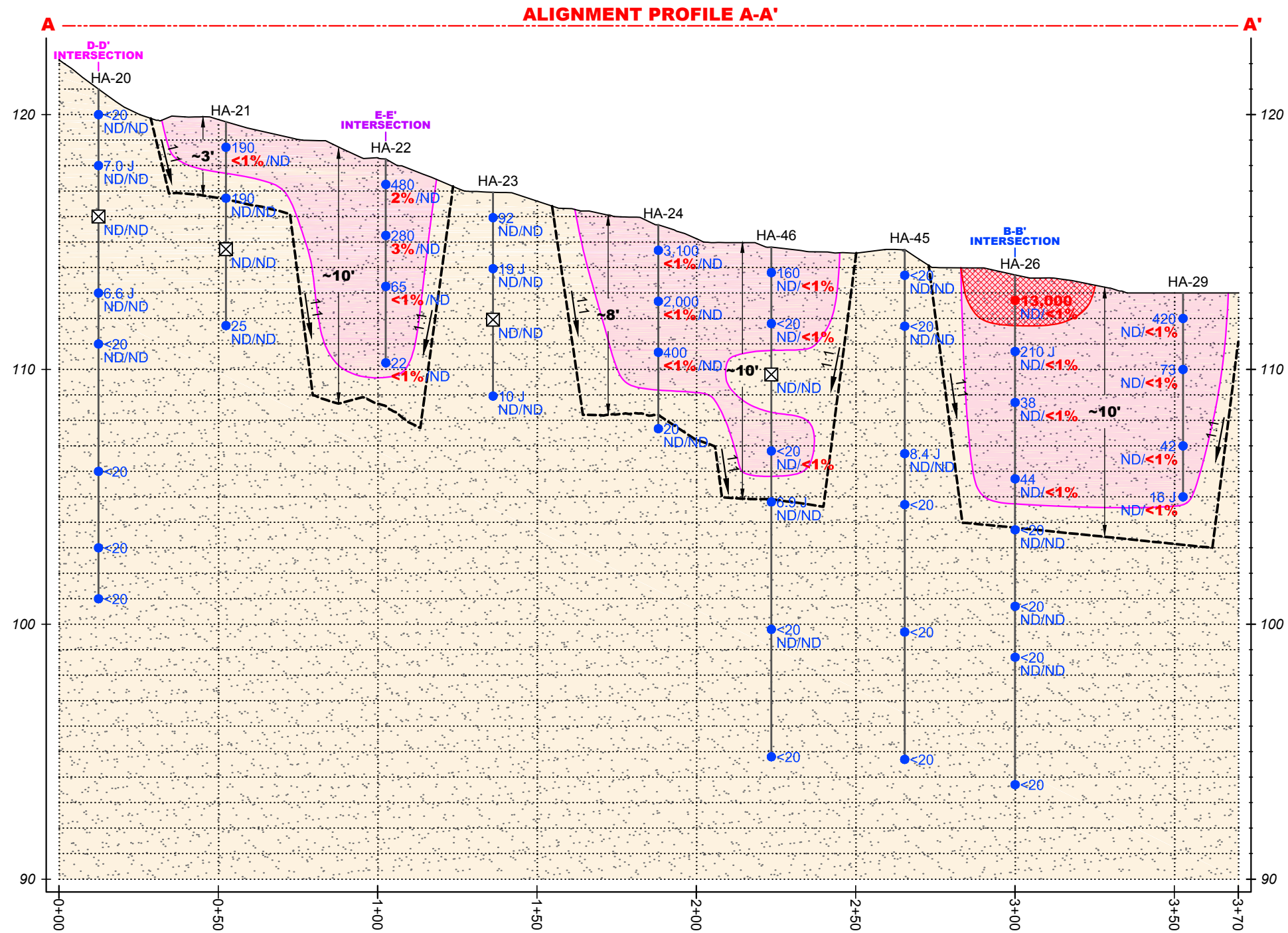
Phillips 66  
Santa Maria Refinery Northern Inactive Waste Site  
2555 Willow Road, Arroyo Grande, California

Figure No.

4

Title




Alignment Profile A-A'



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2019/07/23/4:44 PM By: Jdebarros

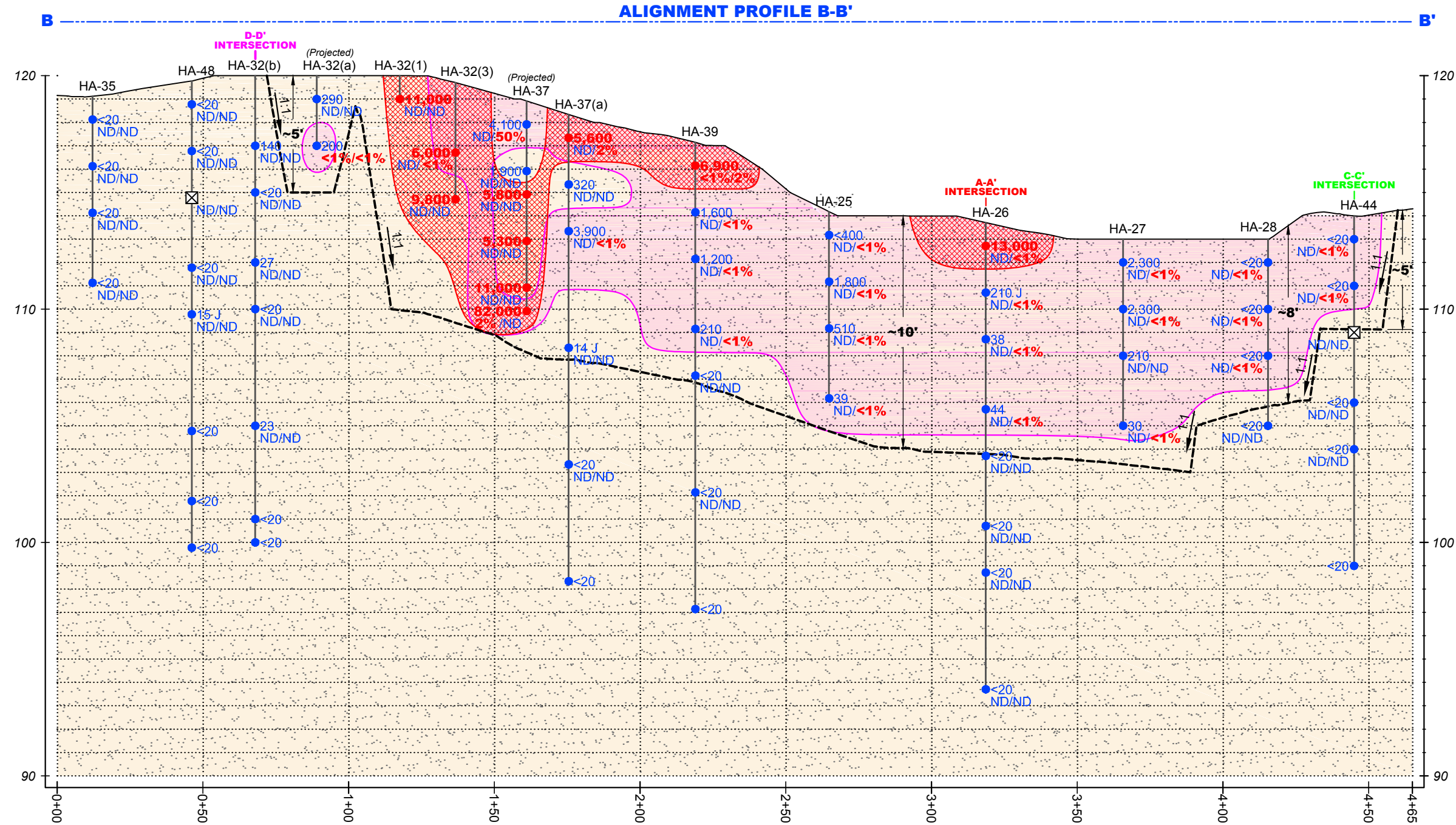
ORIGINAL SHEET - ANSI B

### Legend

- 69 — Soil Sample
- TPHo Result in mg/kg
- ND/ND — Amosite/Chrysotile Result in percentage
-  Approximate extent of TPHo Impacted Soil Greater than Tier 1 ESL
-  Approximate extent of Asbestos Impacted Soil Greater than Tier 1 ESL
-  Sand with Trace Silt (SP)

- 5,100** Bold Red Sample Result indicates TPHo concentration Greater than Tier 1 ESL OF 5,100 mg/kg
- <1%** Bold Red Sample Result indicates percent of asbestos detected
- Approximate Excavation Profile along Alignment

Client/Project  
Phillips 66  
Santa Maria Refinery Northern Inactive Waste Site  
2555 Willow Road, Arroyo Grande, California  
Figure No.  
5  
Title  
Alignment Profile B-B'


















**LEGEND:**

	SOIL BORING LOCATION (NO ASBESTOS OR TPH <sub>0</sub> DETECTED)		PROPOSED GEOPROBE BORING LOCATION BOTH ASBESTOS AND TPH <sub>0</sub> (ABOVE TIER 1 ESL DETECTED)
	SOIL BORING LOCATION (ASBESTOS DETECTED AT >0'- <3' BGS)		ABANDONED 4" STEEL PIPE (ABOVEGROUND)
	SOIL BORING LOCATION (ASBESTOS DETECTED AT >0'- <5' BGS)		ABANDONED 4" STEEL PIPE (UNDERGROUND)
	SOIL BORING LOCATION (ASBESTOS, DETECTED AT >0'- <8' BGS)		UNDERGROUND ELECTRIC
	SOIL BORING LOCATION (ASBESTOS DETECTED AT >0'- <9' BGS)	<u>EXCAVATION BOTTOM DEPTHS (FEET BGS):</u> 	



# APPENDICES



# APPENDIX A

## BORING LOGS



CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**

BOREHOLE NO:

**HA-20**

PAGE 1 OF 1



DRILLING STARTED: **9/26/17** COMPLETED: **10/2/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger/Geoprobe**  
 DRILLING METHOD: **Hand Auger/ Direct Push**  
 SAMPLING EQUIPMENT:

BOREHOLE DEPTH (ft): **20.0**  
 BOREHOLE DIAMETER (in): **3**  
 INITIAL DTW (ft): **NE**  
 STATIC DTW (ft): **NE**  
 LOGGED BY: **J.R.**

NORTHING:  
 EASTING:  
 LATITUDE:  
 LONGITUDE:  
 CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace P/D (ppm)	Depth (feet)	Borehole Backfill
		SP	<b>SAND TRACE SILT</b> ; brownish tan; fine grained; loose; no cementation; no hydrocarbon odor			1110 HA-20-1'	0.0		
			Slightly moist			1115 HA-20-3'	0.0		
5			Moist			1120 HA-20-5'	0.0	5	
						1130 HA-20-8'	0.0		
10						1410 (10/2-17) HA-20-10'	0.0	10	← Bentonite chips
						1415 HA-20-15'	0.0	15	
15						1420 HA-20-18'	0.0		
20			Borehole terminated at 20 feet.			1425 HA-20-20'	0.0	20	
25								25	
30								30	
35								35	

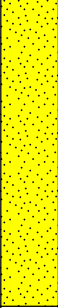





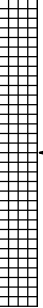
CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**  
 DRILLING STARTED: **9/26/17** COMPLETED: **9/26/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger**  
 DRILLING METHOD: **Hand Auger**  
 SAMPLING EQUIPMENT:

BOREHOLE NO:

**HA-21** PAGE 1 OF 1



BOREHOLE DEPTH (ft): **8.0** NORTHING:  
 BOREHOLE DIAMETER (in): **3** EASTING:  
 INITIAL DTW (ft): **NE** LATITUDE:  
 STATIC DTW (ft): **NE** LONGITUDE:  
 LOGGED BY: **J.R.** CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
5		SP	<b>SAND TRACE SILT</b> ; brownish tan; fine grained; loose; no cementation; no hydrocarbon odor  Slightly moist  Moist		   	1030 HA-21-1'  1035 HA-21-3'  1039 HA-21-5'  1045 HA-21-8'	0.0 0.0 0.0 0.0	5	 ← Bentonite chips
10			Borehole terminated at 8 feet.					10	
15								15	
20								20	
25								25	
30								30	
35								35	

CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**  
 DRILLING STARTED: **9/26/17** COMPLETED: **9/26/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger**  
 DRILLING METHOD: **Hand Auger**  
 SAMPLING EQUIPMENT:

BOREHOLE NO:

**HA-22** PAGE 1 OF 1



BOREHOLE DEPTH (ft): **8.0** NORTHING:  
 BOREHOLE DIAMETER (in): **3** EASTING:  
 INITIAL DTW (ft): **NE** LATITUDE:  
 STATIC DTW (ft): **NE** LONGITUDE:  
 LOGGED BY: **J.R.** CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
5		SP	<b>SAND TRACE SILT</b> ; brown; fine grained; dry; loose; no cementation; no hydrocarbon odor  Wood debris; sulfur cake; fibrous material; slightly moist  Moist			0830 HA-22-1'  0845 HA-22-3'  0850 HA-22-5'  0900 HA-22-8'	0.0  0.0  0.0  0.0	5	 ← Bentonite chips
10			Borehole terminated at 8 feet.					10	
15								15	
20								20	
25								25	
30								30	
35								35	

CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**  
 DRILLING STARTED: **9/26/17** COMPLETED: **9/26/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger**  
 DRILLING METHOD: **Hand Auger**  
 SAMPLING EQUIPMENT:

BOREHOLE NO:

**HA-23** PAGE 1 OF 1



BOREHOLE DEPTH (ft): **8.0** NORTHING:  
 BOREHOLE DIAMETER (in): **3** EASTING:  
 INITIAL DTW (ft): **NE** LATITUDE:  
 STATIC DTW (ft): **NE** LONGITUDE:  
 LOGGED BY: **J.R.** CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
5		SP	<b>SAND TRACE SILT</b> ; tan; fine grained; dry; loose; no cementation; no hydrocarbon odor  Slightly moist  Moist			0745 HA-23-1'  0750 HA-23-3'  0755 HA-23-5'  0805 HA-23-8'	0.0  0.0  0.0  0.0		
10			Borehole terminated at 8 feet.					10	
15								15	
20								20	
25								25	
30								30	
35								35	

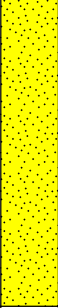

CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**  
 DRILLING STARTED: **9/25/17** COMPLETED: **9/26/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger**  
 DRILLING METHOD: **Hand Auger**  
 SAMPLING EQUIPMENT:

BOREHOLE NO:

**HA-24** PAGE 1 OF 1



BOREHOLE DEPTH (ft): **8.0** NORTHING:  
 BOREHOLE DIAMETER (in): **3** EASTING:  
 INITIAL DTW (ft): **NE** LATITUDE:  
 STATIC DTW (ft): **NE** LONGITUDE:  
 LOGGED BY: **J.R.** CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
5		SP	<b>SAND TRACE SILT</b> ; dark brown; fine grained; loose; dry; fibrous materials			0745 HA-24-1'	0.0		
			Same as above with trace fragments of silidfied black material			0750 HA-24-3'	0.0		
						0755 HA-24-5'	0.0	5	← Bentonite chips
			Borehole terminated at 8 feet.			(9/26/17) 0805 HA-24-8'	0.0		
10								10	
15								15	
20								20	
25								25	
30								30	
35								35	





CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**  
 DRILLING STARTED: **9/25/17** COMPLETED: **10/4/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger/Geoprobe**  
 DRILLING METHOD: **Hand Auger/ Direct Push**  
 SAMPLING EQUIPMENT:

BOREHOLE NO:

**HA-26**

PAGE 1 OF 1



BOREHOLE DEPTH (ft): **20.0** NORTHING:  
 BOREHOLE DIAMETER (in): **3** EASTING:  
 INITIAL DTW (ft): **NE** LATITUDE:  
 STATIC DTW (ft): **NE** LONGITUDE:  
 LOGGED BY: **J.R.** CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
		SP	<b>SAND SOME SILT</b> ; black; fine sand; dry; strong cementation (fill debris)			0945 HA-26-1'	0.0		
		SP	<b>SAND TRACE SILT</b> ; tan; fine grained; moist; loose; no cementation			0950 HA-26-3'	0.0		
5						0955 HA-26-5'	0.0	5	
						1000 HA-26-8'	0.0		
10						(10/4/17) 1140 HA-26-10'	0.0	10	← Bentonite chips
						1147 HA-26-13'	0.0		
15						1150 HA-26-15'	0.0	15	
20			Borehole terminated at 20 feet.			1200 HA-26-20'	0.0	20	
25								25	
30								30	
35								35	

CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**

BOREHOLE NO:

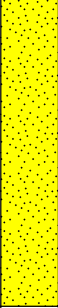

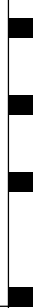

**HA-27**

PAGE 1 OF 1



DRILLING STARTED: **9/25/17** COMPLETED: **9/25/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger**  
 DRILLING METHOD: **Hand Auger**  
 SAMPLING EQUIPMENT:

BOREHOLE DEPTH (ft): **8.0** NORTHING:  
 BOREHOLE DIAMETER (in): **3** EASTING:  
 INITIAL DTW (ft): **NE** LATITUDE:  
 STATIC DTW (ft): **NE** LONGITUDE:  
 LOGGED BY: **J.R.** CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
5		SP	<b>SAND TRACE SILT</b> ; black; fine grained; dry  Trending brown with reddish brown inclusions  Trending reddish brown uniformly			0820 HA-27-1'  0825 HA-27-3'  0840 HA-27-5'  0850 HA-27-5'	0.0  0.0  0.0  0.0	5	 Bentonite chips
10			Borehole terminated at 8 feet.					10	
15								15	
20								20	
25								25	
30								30	
35								35	

CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**  
 DRILLING STARTED: **9/22/17** COMPLETED: **9/25/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger**  
 DRILLING METHOD: **Hand Auger**  
 SAMPLING EQUIPMENT:

BOREHOLE NO:

**HA-28** PAGE 1 OF 1



BOREHOLE DEPTH (ft): **8.0** NORTHING:  
 BOREHOLE DIAMETER (in): **3** EASTING:  
 INITIAL DTW (ft): **NE** LATITUDE:  
 STATIC DTW (ft): **NE** LONGITUDE:  
 LOGGED BY: **J.R.** CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
		SP	<b>SAND TRACE SILT</b> ; very dark brown; fine grained; dry; organic material (roots)			1320 HA-28-1'	0.0		
			<b>SAND TRACE SILT</b> ; tan; fine grained; moist; loose; no cementation			(9/25/17) 0750 HA-28-3'	0.0		
5						0755 HA-28-5'	0.0	5	← Bentonite chips
			Trending draker in color			0800 HA-28-8'	0.0		
			Borehole terminated at 8 feet.						
10								10	
15								15	
20								20	
25								25	
30								30	
35								35	

CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**  
 DRILLING STARTED: **9/22/17** COMPLETED: **9/22/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger**  
 DRILLING METHOD: **Hand Auger**  
 SAMPLING EQUIPMENT:

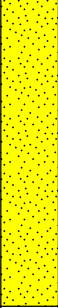


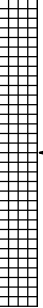
BOREHOLE NO:

**HA-29**

PAGE 1 OF 1



BOREHOLE DEPTH (ft): **8.0** NORTHING:  
 BOREHOLE DIAMETER (in): **3** EASTING:  
 INITIAL DTW (ft): **NE** LATITUDE:  
 STATIC DTW (ft): **NE** LONGITUDE:  
 LOGGED BY: **J.R.** CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
5		SP	<b>SAND TRACE SILT</b> ; tan; fine grained; dry; loose; no cementation; organic material (roots)  Fragments of hardend black material; slightly moist  Moist; no black material			1237 HA-29-1'  1242 HA-29-3'  1247 HA-29-5'  1252 HA-29-8'	0.0  0.0  0.0  0.0	0  5  10  15  20  25  30  35	 Bentonite chips
10			Borehole terminated at 8 feet.					10	
15								15	
20								20	
25								25	
30								30	
35								35	

CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**  
 DRILLING STARTED: **9/22/17** COMPLETED: **9/22/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger**  
 DRILLING METHOD: **Hand Auger**  
 SAMPLING EQUIPMENT:

BOREHOLE NO:

**HA-30** PAGE 1 OF 1



BOREHOLE DEPTH (ft): **8.0** NORTHING:  
 BOREHOLE DIAMETER (in): **3** EASTING:  
 INITIAL DTW (ft): **NE** LATITUDE:  
 STATIC DTW (ft): **NE** LONGITUDE:  
 LOGGED BY: **J.R.** CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
		SP	<b>SAND TRACE SILT</b> ; brown; fine grained; dry; loose; no cementation			1015 HA-30-1'	0.0		
			Black			1020 HA-30-3'	0.0		
			Brownish black (70% black/ 30% brown)			1025 HA-30-5'	0.0	5	← Bentonite chips
5			Tan; moist			1045 HA-30-8'	0.0		
			Borehole terminated at 8 feet.						
10								10	
15								15	
20								20	
25								25	
30								30	
35								35	

CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**  
 DRILLING STARTED: **9/22/17** COMPLETED: **9/22/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger**  
 DRILLING METHOD: **Hand Auger**  
 SAMPLING EQUIPMENT:

BOREHOLE NO:

**HA-31** PAGE 1 OF 1



BOREHOLE DEPTH (ft): **8.0** NORTHING:  
 BOREHOLE DIAMETER (in): **3** EASTING:  
 INITIAL DTW (ft): **NE** LATITUDE:  
 STATIC DTW (ft): **NE** LONGITUDE:  
 LOGGED BY: **J.R.** CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
		SP	<b>SAND TRACE SILT</b> ; brown; fine frained; dry; loose; no cementation; oraganic material (roots)			0850 HA-31-1'	0.0		
			Turn dark brown			0935 HA-31-3'	0.0		
			Turns black (80%) with reddish brown sand (20%)			0940 HA-31-5'	0.0	5	← Bentonite chips
5			Reddish brown (75%) black sand (25%)						
			Trace fragments of hardend black material						
			Tan with slight reddish brown staining			1000 HA-31-8'	0.0		
			Borehole terminated at 8 feet.						
10								10	
15								15	
20								20	
25								25	
30								30	
35								35	





CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**  
 DRILLING STARTED: **9/21/17** COMPLETED: **9/21/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger**  
 DRILLING METHOD: **Hand Auger**  
 SAMPLING EQUIPMENT:

BOREHOLE NO:

**HA-32 (3)** PAGE 1 OF 1



BOREHOLE DEPTH (ft): **5.0** NORTHING:  
 BOREHOLE DIAMETER (in): **3** EASTING:  
 INITIAL DTW (ft): **NE** LATITUDE:  
 STATIC DTW (ft): **NE** LONGITUDE:  
 LOGGED BY: **J.R.** CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
		SP	<b>SAND TRACE SILT</b> ; dark brown to black; fine grained; dry; medium dense			0930 HA-32 (3)-3'	0.0		 ← Bentonite chips
5			Becomes dark brown; asphaltic fragments Borehole terminated at 5 feet.			1100 HA-32 (3) -5'	0.0	5	
10								10	
15								15	
20								20	
25								25	
30								30	
35								35	

CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**  
 DRILLING STARTED: **9/29/17** COMPLETED: **10/3/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger/Geoprobe**  
 DRILLING METHOD: **Hand Auger/ Direct Push**  
 SAMPLING EQUIPMENT:

BOREHOLE NO:

**HA-32 (b)** PAGE 1 OF 1



BOREHOLE DEPTH (ft): **20.0** NORTHING:  
 BOREHOLE DIAMETER (in): **3** EASTING:  
 INITIAL DTW (ft): **NE** LATITUDE:  
 STATIC DTW (ft): **NE** LONGITUDE:  
 LOGGED BY: **J.R.** CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
		SP	<b>SAND TRACE SILT</b> ; brown; fine grained; dry; loose fragments of weathered asphalt <b>SAND WITH GRAVEL</b>			1250 HA-32 (b)-3'	0.0		
5			<b>SAND NO GRAVEL</b>			1300 HA-32 (b)-5'	0.0	5	
			Color change to tan			1308 HA-32 (b)-8'	0.0		
10								10	← Bentonite chips
15								15	
			Trending dark brown in color						
20			Borehole terminated at 20 feet.					20	
25								25	
30								30	
35								35	

SECOR\_SLO\_GEOPROBE FORMER-NORTHERN-LANDFILL.GPJ SECOR\_SLO.GDT 4/24/18



CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**




BOREHOLE NO:

**HA-32(1)** PAGE 1 OF 1



DRILLING STARTED: **9/21/17** COMPLETED: **9/21/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger**  
 DRILLING METHOD: **Hand Auger**  
 SAMPLING EQUIPMENT:

BOREHOLE DEPTH (ft): **1.0** NORTHING:  
 BOREHOLE DIAMETER (in): **3** EASTING:  
 INITIAL DTW (ft): **NE** LATITUDE:  
 STATIC DTW (ft): **NE** LONGITUDE:  
 LOGGED BY: **J.R.** CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
		SP	<b>SAND TRACE SILT</b> ; black staining; asphaltic and tarry material encountered Refusal at 1 feet. Borehole terminated at 1 feet.			0900 HA-32(1)-1'	0.0		 ← Native soil
5								5	
10								10	
15								15	
20								20	
25								25	
30								30	
35								35	

CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**

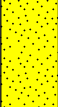




BOREHOLE NO:

**HA-32(a)** PAGE 1 OF 1



DRILLING STARTED: **9/29/17** COMPLETED: **9/29/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger**  
 DRILLING METHOD: **Hand Auger**  
 SAMPLING EQUIPMENT:

BOREHOLE DEPTH (ft): **3.0** NORTHING:  
 BOREHOLE DIAMETER (in): **3** EASTING:  
 INITIAL DTW (ft): **NE** LATITUDE:  
 STATIC DTW (ft): **NE** LONGITUDE:  
 LOGGED BY: **J.R.** CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
		SP	<b>SAND TRACE SILT</b> ; dark brown to black; fine grained; dry  Turns very dense			HA-32(a)-1'	0.0		 ← Bentonite chips
			Refusal at 1 feet. Borehole terminated at 3 feet.			HA-32(a)-3'	0.0		
5								5	
10								10	
15								15	
20								20	
25								25	
30								30	
35								35	

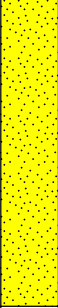






CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**  
 DRILLING STARTED: **9/21/17** COMPLETED: **9/22/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger**  
 DRILLING METHOD: **Hand Auger**  
 SAMPLING EQUIPMENT:

BOREHOLE NO:

**HA-33** PAGE 1 OF 1



BOREHOLE DEPTH (ft): **8.0** NORTHING:  
 BOREHOLE DIAMETER (in): **3** EASTING:  
 INITIAL DTW (ft): **NE** LATITUDE:  
 STATIC DTW (ft): **NE** LONGITUDE:  
 LOGGED BY: **J.R.** CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
5		SP	<b>SAND TRACE SILT</b> ; tan; fine grained; dry; loose; trace dark staining  Slightly moist  Moist		   	1110 HA-33-1'  1115 HA-33-3'  1120 HA-33-5'  (9/22/17) 0815 HA-33-8'	0.0  0.0  0.0  0.0		← Bentonite chips
10			Borehole terminated at 8 feet.					10	
15								15	
20								20	
25								25	
30								30	
35								35	

CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**

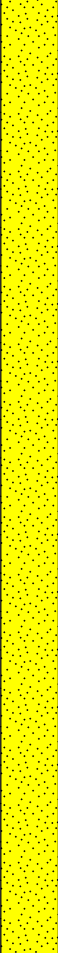
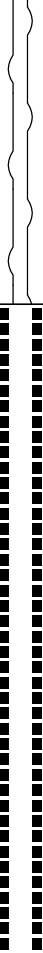

BOREHOLE NO:

**HA-34** PAGE 1 OF 1



DRILLING STARTED: **9/20/17** COMPLETED: **10/3/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger/Geoprobe**  
 DRILLING METHOD: **Hand Auger/ Direct Push**  
 SAMPLING EQUIPMENT:

BOREHOLE DEPTH (ft): **25.0** NORTHING:  
 BOREHOLE DIAMETER (in): **3** EASTING:  
 INITIAL DTW (ft): **NE** LATITUDE:  
 STATIC DTW (ft): **NE** LONGITUDE:  
 LOGGED BY: **J.R.** CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
		SP	<b>SAND TRACE SILT</b> ; reddish brown to light brown; fine grained; dry; loose			0930 HA-34-2'	0.0		 ← Bentonite chips
			Reddish brown; slightly moist			0937 HA-34-4'	0.0		
5			Reddish brown to brown			0947 HA-34-6'	0.0	5	
						0953 HA-34-8'	0.0		
10			Light brown			0800 HA-34-10'	0.0	10	
						(10/3/17) 0805 HA-34-15'	0.0	15	
						0810 HA-34-18'	0.0		
20					Trending dark brown color			0815 HA-34-20'	
25			Borehole terminated at 25 feet.			0820 HA-34-25'	0.0	25	
30								30	
35								35	

← Bentonite chips

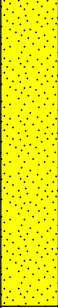
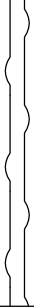
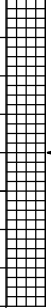
CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**  
 DRILLING STARTED: **9/27/17** COMPLETED: **9/27/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger**  
 DRILLING METHOD: **Hand Auger**  
 SAMPLING EQUIPMENT:

BOREHOLE NO:

**HA-35** PAGE 1 OF 1



BOREHOLE DEPTH (ft): **8.0** NORTHING:  
 BOREHOLE DIAMETER (in): **3** EASTING:  
 INITIAL DTW (ft): **NE** LATITUDE:  
 STATIC DTW (ft): **NE** LONGITUDE:  
 LOGGED BY: **J.R.** CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
5		SP	<b>SAND TRACE SILT</b> ; tan; fine grained; dry; loose			0955 HA-35-1'	0.0		
						1000 HA-35-3'	0.0		
		Moist				1100 HA-35-5'	0.0	5	 Bentonite chips
			Borehole terminated at 8 feet.			1110 HA-35-8'	0.0		
10								10	
15								15	
20								20	
25								25	
30								30	
35								35	

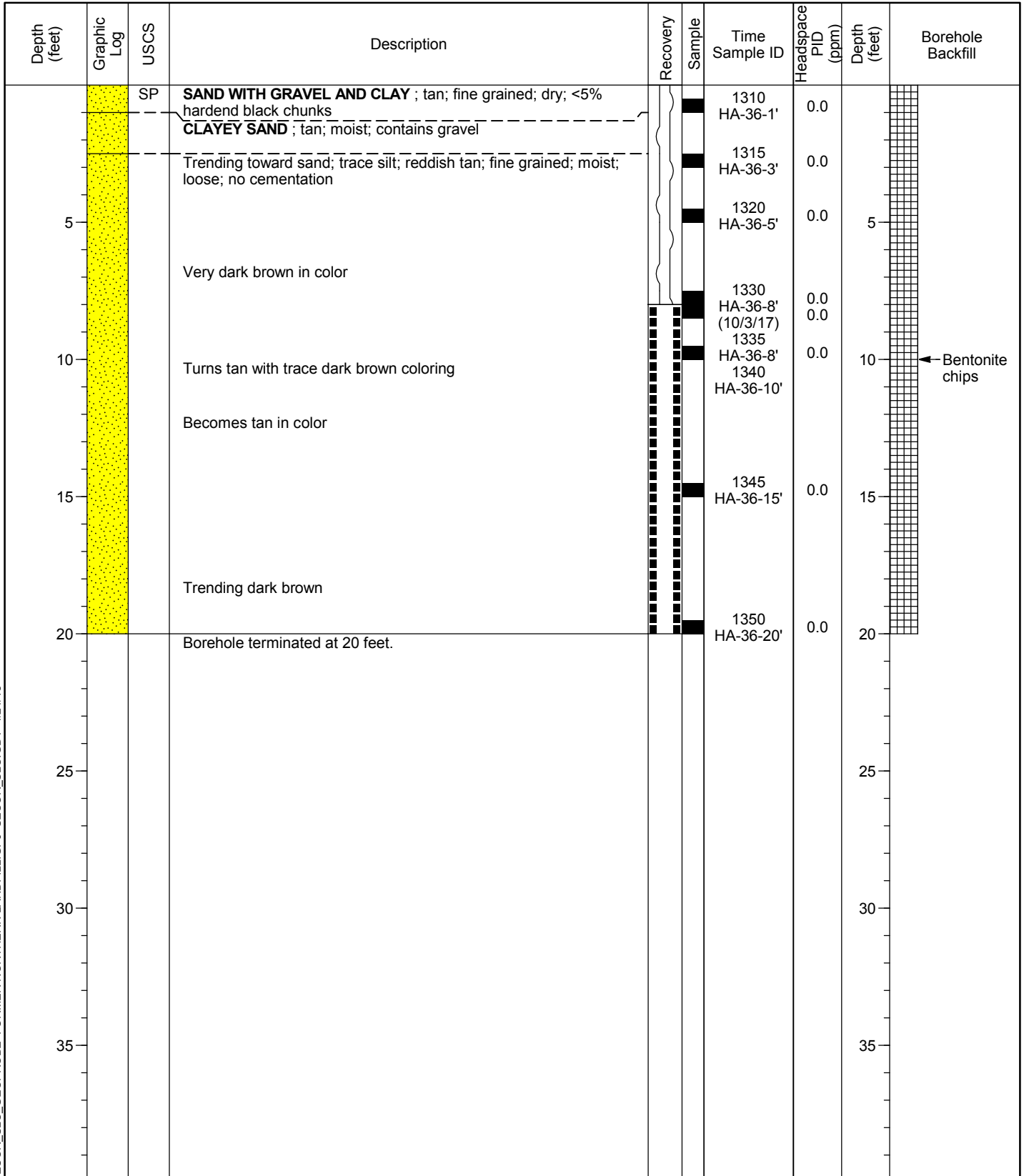
CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**  
 DRILLING STARTED: **9/26/17** COMPLETED: **10/3/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger/Geoprobe**  
 DRILLING METHOD: **Hand Auger/ Direct Push**  
 SAMPLING EQUIPMENT:

BOREHOLE NO:

**HA-36** PAGE 1 OF 1



BOREHOLE DEPTH (ft): **20.0** NORTHING:  
 BOREHOLE DIAMETER (in): **3** EASTING:  
 INITIAL DTW (ft): **NE** LATITUDE:  
 STATIC DTW (ft): **NE** LONGITUDE:  
 LOGGED BY: **J.R.** CHECKED BY: **B.L./K.H**



CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**  
 DRILLING STARTED: **9/20/17** COMPLETED: **10/3/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger/Geoprobe**  
 DRILLING METHOD: **Hand Auger/ Direct Push**  
 SAMPLING EQUIPMENT:

BOREHOLE NO:

**HA-37** PAGE 1 OF 1



BOREHOLE DEPTH (ft): **9.0** NORTHING:  
 BOREHOLE DIAMETER (in): **3** EASTING:  
 INITIAL DTW (ft): **NE** LATITUDE:  
 STATIC DTW (ft): **NE** LONGITUDE:  
 LOGGED BY: **J.R.** CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
		SP	<b>SAND TRACE SILT</b> ; reddish brown to brown; fine grained; dry; loose			1125 HA-37-1'	0.0		
			Tuen very dark brown to black; fragments of tarry material; binding sand			1130 HA-37-3'	0.0		
						1135 HA-37-4'	0.0		
5			Black clast and tarry clumps			1145 HA-37-6'	0.0	5	← Bentonite chips
						1150 HA-37-8'	0.0		
			Tarry fragments increase in size			1155 HA-37-9'	0.0		
10			Refusal at 9 feet. Borehole terminated at 9 feet.			(10/3/17) 1045 HA-37-9'	0.0	10	
15								15	
20								20	
25								25	
30								30	
35								35	

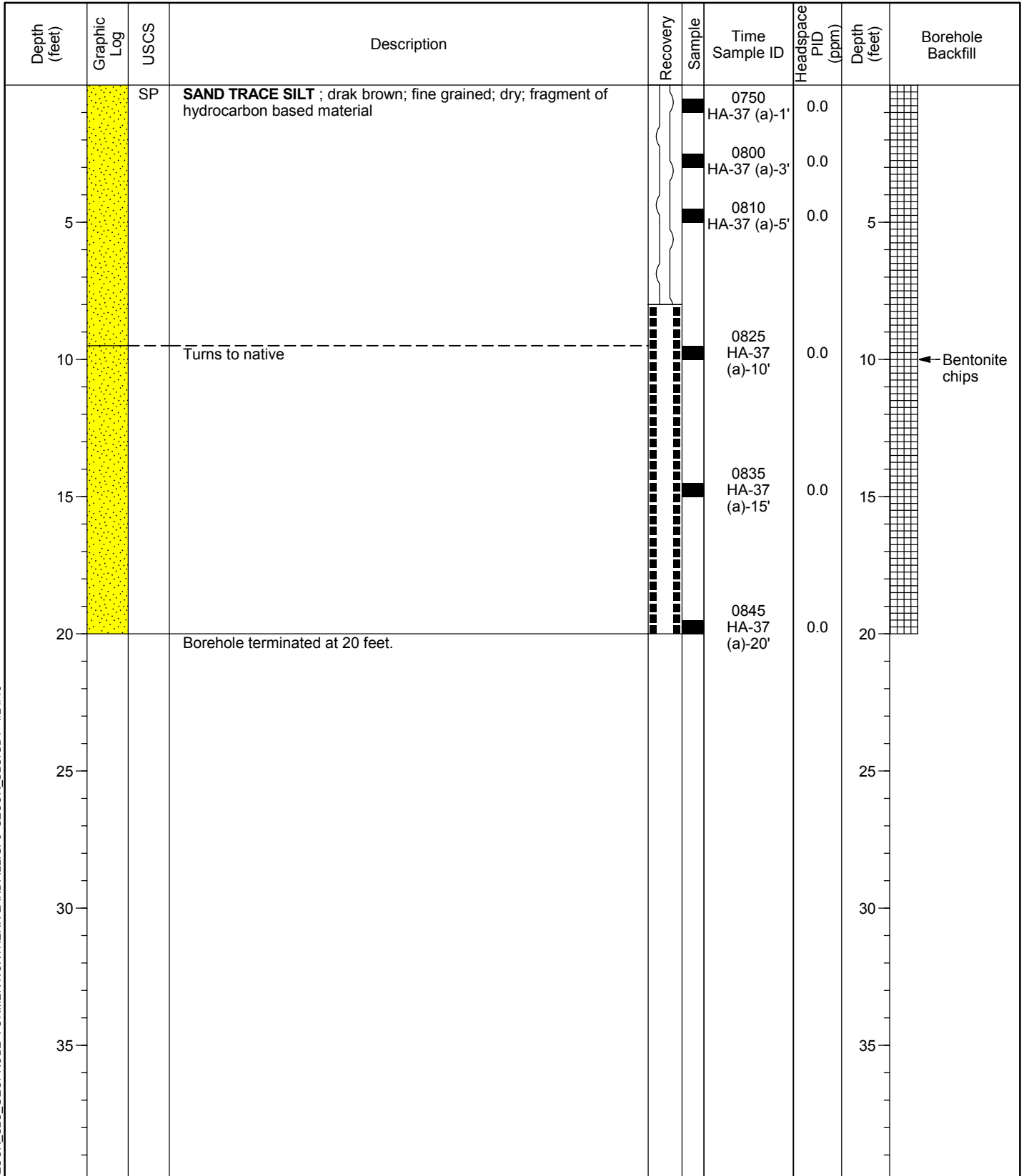
CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**  
 DRILLING STARTED: **10/4/17** COMPLETED: **10/4/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger/Geoprobe**  
 DRILLING METHOD: **Hand Auger/ Direct Push**  
 SAMPLING EQUIPMENT:

BOREHOLE NO:

**HA-37 (a)** PAGE 1 OF 1



BOREHOLE DEPTH (ft): **20.0** NORTHING:  
 BOREHOLE DIAMETER (in): **3** EASTING:  
 INITIAL DTW (ft): **NE** LATITUDE:  
 STATIC DTW (ft): **NE** LONGITUDE:  
 LOGGED BY: **J.R.** CHECKED BY: **B.L./K.H**





CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**

BOREHOLE NO:

**HA-38**

PAGE 1 OF 1



DRILLING STARTED: **9/20/17** COMPLETED: **9/20/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger**  
 DRILLING METHOD: **Hand Auger**  
 SAMPLING EQUIPMENT:

BOREHOLE DEPTH (ft): **4.5**  
 BOREHOLE DIAMETER (in): **3**  
 INITIAL DTW (ft): **NE**  
 STATIC DTW (ft): **NE**  
 LOGGED BY: **J.R.**

NORTHING:  
 EASTING:  
 LATITUDE:  
 LONGITUDE:  
 CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
		SP	<b>SAND TRACE SILT</b> ; brown; fine grained; dry; black clasts			1420 HA-38-1'	0.0		
			Trending reddish brown and dark brown; trace black clasts; pink brick			1425 HA-38-3'	0.0		← Bentonite chips
5			Reddish brown Borehole terminated at 4.5 feet.					5	
10								10	
15								15	
20								20	
25								25	
30								30	
35								35	

CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**

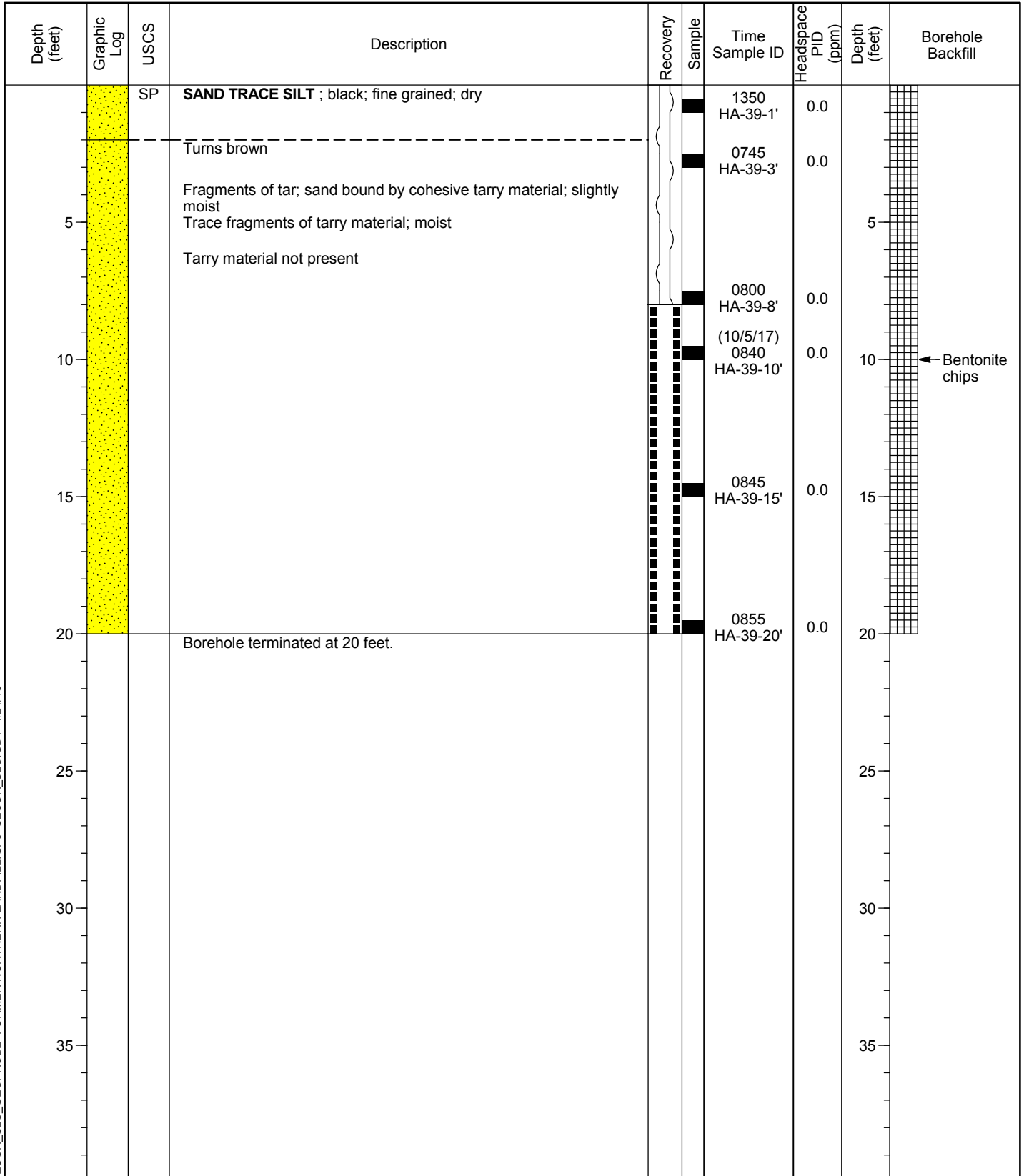
BOREHOLE NO:

**HA-39** PAGE 1 OF 1



DRILLING STARTED: **9/27/17** COMPLETED: **10/5/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger/Geoprobe**  
 DRILLING METHOD: **Hand Auger/ Direct Push**  
 SAMPLING EQUIPMENT:

BOREHOLE DEPTH (ft): **20.0** NORTHING:  
 BOREHOLE DIAMETER (in): **3** EASTING:  
 INITIAL DTW (ft): **NE** LATITUDE:  
 STATIC DTW (ft): **NE** LONGITUDE:  
 LOGGED BY: **J.R.** CHECKED BY: **B.L./K.H**



SECOR\_SLO\_GEOPROBE FORMER-NORTHERN-LANDFILL.GPJ SECOR\_SLO.GDT 4/24/18

CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**  
 DRILLING STARTED: **9/27/17** COMPLETED: **10/5/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger/Geoprobe**  
 DRILLING METHOD: **Hand Auger/ Direct Push**  
 SAMPLING EQUIPMENT:

BOREHOLE NO:

**HA-40**

PAGE 1 OF 1



BOREHOLE DEPTH (ft): **20.0** NORTHING:  
 BOREHOLE DIAMETER (in): **3** EASTING:  
 INITIAL DTW (ft): **NE** LATITUDE:  
 STATIC DTW (ft): **NE** LONGITUDE:  
 LOGGED BY: **J.R.** CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace P/D (ppm)	Depth (feet)	Borehole Backfill
0		SP	<b>SAND TRACE SILT</b> ; brown; fine sand; dry; loose; no cementation  Slightly moist  Moist			0833 HA-40-1'	0.0	0	
0						0840 HA-40-3'	0.0	0	
5						0850 HA-40-5'	0.0	5	
8						0900 HA-40-8'	0.0	8	
10						(10/5/17) 1125 HA-40-10'	0.0	10	
15						1130 HA-40-15'	0.0	15	
20			Borehole terminated at 20 feet.			1140 HA-40-20'	0.0	20	
25								25	
30								30	
35								35	

← Bentonite chips

CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**  
 DRILLING STARTED: **9/20/17** COMPLETED: **10/5/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger/Geoprobe**  
 DRILLING METHOD: **Hand Auger/ Direct Push**  
 SAMPLING EQUIPMENT:

BOREHOLE NO:

**HA-41**

PAGE 1 OF 1



BOREHOLE DEPTH (ft): **25.0** NORTHING:  
 BOREHOLE DIAMETER (in): **3** EASTING:  
 INITIAL DTW (ft): **NE** LATITUDE:  
 STATIC DTW (ft): **NE** LONGITUDE:  
 LOGGED BY: **J.R.** CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
5		SP	<b>SAND TRACE SILT</b> ; brown; fine grained; dry; loose; possible black granules			0920 HA-41-1'	0.0		
			Slightly moist; tannish brown			0925 HA-41-3'	0.0		
			Moist			0930 HA-41-5'	0.0	5	
10						(10/5/17) 0940 HA-41-8'	0.0		
						1030 HA-41-10'	0.0	10	
15						1035 HA-41-15'	0.0	15	
20						1045 HA-41-20'	0.0	20	
25			Borehole terminated at 25 feet.			1055 HA-41-25'	0.0	25	
30								30	
35								35	

← Bentonite chips

CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**  
 DRILLING STARTED: **9/28/17** COMPLETED: **10/2/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger/Geoprobe**  
 DRILLING METHOD: **Hand Auger/ Direct Push**  
 SAMPLING EQUIPMENT:

BOREHOLE NO:

**HA-42** PAGE 1 OF 1



BOREHOLE DEPTH (ft): **25.0** NORTHING:  
 BOREHOLE DIAMETER (in): **3** EASTING:  
 INITIAL DTW (ft): **NE** LATITUDE:  
 STATIC DTW (ft): **NE** LONGITUDE:  
 LOGGED BY: **J.R.** CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
5		SP	<b>SAND TRACE SILT</b> ; brown; fine grained; dry; loose; possible black granules			0825 HA-42-1'	0.0		
						0853 HA-42-3'	0.0		
						0837 HA-42-5'	0.0	5	
			Moist			0845 HA-42-8'	0.0		
10						(10/2/17) 0935 HA-42-10'	0.0	10	
				Brown with dark brown staining		0945 HA-42-12.5'	0.0		← Bentonite chips
15						0955 HA-42-15'	0.0	15	
						1000 HA-42-18.5'	0.0		
20						1005 HA-42-20'	0.0	20	
			Brown			1012 HA-42-25'	0.0	25	
25			Borehole terminated at 25 feet.						
30								30	
35								35	

SECOR\_SLO\_GEOPROBE FORMER-NORTHERN-LANDFILL.GPJ SECOR\_SLO.GDT 4/24/18

CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**  
 DRILLING STARTED: **9/28/17** COMPLETED: **10/4/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger/Geoprobe**  
 DRILLING METHOD: **Hand Auger/ Direct Push**  
 SAMPLING EQUIPMENT:

BOREHOLE NO:

**HA-43**

PAGE 1 OF 1



BOREHOLE DEPTH (ft): **20.0** NORTHING:  
 BOREHOLE DIAMETER (in): **3** EASTING:  
 INITIAL DTW (ft): **NE** LATITUDE:  
 STATIC DTW (ft): **NE** LONGITUDE:  
 LOGGED BY: **J.R.** CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace PID (ppm)	Depth (feet)	Borehole Backfill		
5		SP	<b>SAND TRACE SILT</b> ; brown; fine grained; dry; loose; no cementation; organic material present (roots) Trace organics			0910 HA-43-1'	0.0				
					0915 HA-43-3'	0.0					
					1015 HA-43-5'	0.0	5				
			Moist			1023 HA-43-8' ( 10/4/17)	0.0				
10						0923 HA-43-9'	0.0			10	← Bentonite chips
						0925 HA-43-10'	0.0				
15					0935 HA-43-15'	0.0	15				
20			Borehole terminated at 20 feet.		0945 HA-43-20'	0.0	20				
25								25			
30								30			
35								35			

CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**  
 DRILLING STARTED: **9/28/17** COMPLETED: **10/4/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger/Geoprobe**  
 DRILLING METHOD: **Hand Auger/ Direct Push**  
 SAMPLING EQUIPMENT:

BOREHOLE NO:

**HA-44**

PAGE 1 OF 1



BOREHOLE DEPTH (ft): **15.0**  
 BOREHOLE DIAMETER (in): **3**  
 INITIAL DTW (ft): **NE**  
 STATIC DTW (ft): **NE**  
 LOGGED BY: **J.R.**

NORTHING:  
 EASTING:  
 LATITUDE:  
 LONGITUDE:  
 CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
5		SP	<b>SAND TRACE SILT</b> ; brown; fine grained; dry; loose; no cementation; organic material present (roots) Trace organics  Moist  Trending dark brown to brown			1045 HA-44-1'	0.0	 ← Bentonite chips	
						1050 HA-44-3'	0.0		
						1055 HA-44-5'	0.0		5
						1105 HA-44-8'	0.0		
10						(10/4/17) 1115 HA-44-10'	0.0		10
15			Borehole terminated at 15 feet.			1125 HA-44-15	0.0	15	
20								20	
25								25	
30								30	
35								35	

CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**  
 DRILLING STARTED: **9/29/17** COMPLETED: **10/4/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger/Geoprobe**  
 DRILLING METHOD: **Hand Auger/ Direct Push**  
 SAMPLING EQUIPMENT:

BOREHOLE NO:

**HA-45** PAGE 1 OF 1



BOREHOLE DEPTH (ft): **20.0** NORTHING:  
 BOREHOLE DIAMETER (in): **3** EASTING:  
 INITIAL DTW (ft): **NE** LATITUDE:  
 STATIC DTW (ft): **NE** LONGITUDE:  
 LOGGED BY: **J.R.** CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
		SP	<b>SAND TRACE SILT</b> ; brown; fine grained; dry; loose; trace black granules			0845 HA-45-1'	0.0		
			No black granules			0850 HA-45-3'	0.0		
5			Moist			0855 HA-45-5'	0.0	5	
			Trending brown to dark brown			0905 HA-45-8'	0.0		
10						(10/4/17) 1435 HA-45-10'	0.0	10	← Bentonite chips
15						1440 HA-45-15'	0.0	15	
20			Borehole terminated at 20 feet.			1445 HA-45-20'	0.0	20	
25								25	
30								30	
35								35	



CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**  
 DRILLING STARTED: **9/28/17** COMPLETED: **10/3/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger/Geoprobe**  
 DRILLING METHOD: **Hand Auger/ Direct Push**  
 SAMPLING EQUIPMENT:

BOREHOLE NO:

**HA-46**

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BOREHOLE DEPTH (ft): **20.0** NORTHING:  
 BOREHOLE DIAMETER (in): **3** EASTING:  
 INITIAL DTW (ft): **NE** LATITUDE:  
 STATIC DTW (ft): **NE** LONGITUDE:  
 LOGGED BY: **J.R.** CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
		SP	<b>SAND TRACE SILT</b> ; brown; fine grained; dry; loose; black grannuals present			1310 HA-46-1'	0.0		
			No black granules			1315 HA-46-3'	0.0		
5			Moist			1320 HA-46-5'	0.0	5	
						1330 HA-46-8'	0.0		
10						(10/3/17) 1419 HA-46-10'	0.0	10	← Bentonite chips
15						1430 HA-46-15'	0.0	15	
20			Borehole terminated at 20 feet.			1440 HA-46-20'	0.0	20	
25								25	
30								30	
35								35	

SECOR\_SLO\_GEOPROBE FORMER-NORTHERN-LANDFILL.GPJ SECOR\_SLO.GDT 4/24/18

CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**  
 DRILLING STARTED: **9/29/17** COMPLETED: **10/2/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger/Geoprobe**  
 DRILLING METHOD: **Hand Auger/ Direct Push**  
 SAMPLING EQUIPMENT:

BOREHOLE NO:

**HA-47**

PAGE 1 OF 1



BOREHOLE DEPTH (ft): **23.0**  
 BOREHOLE DIAMETER (in): **3**  
 INITIAL DTW (ft): **NE**  
 STATIC DTW (ft): **NE**  
 LOGGED BY: **J.R.**

NORTHING:  
 EASTING:  
 LATITUDE:  
 LONGITUDE:  
 CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace PID (ppm)	Depth (feet)	Borehole Backfill	
5		SP	<b>SAND TRACE SILT</b> ; brown; fine grained; dry; loose  Slightly moist  Moist; trending light brown			0800 HA-47-1'	0.0			
						0805 HA-47-3'	0.0			
						0810 HA-47-5'	0.0			5
						0820 HA-47-8'	0.0			
10						(10/2/17) 1220 HA-47-10'	0.0			10
						1230 HA-47-15'	0.0			15
						1240 HA-47-20'	0.0			20
			1250 HA-47-23'	0.0						
25			Borehole terminated at 23 feet.					25		
30								30		
35								35		

← Bentonite chips

CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**  
 DRILLING STARTED: **9/29/17** COMPLETED: **10/3/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger/Geoprobe**  
 DRILLING METHOD: **Hand Auger/ Direct Push**  
 SAMPLING EQUIPMENT:

BOREHOLE NO:

**HA-48**

PAGE 1 OF 1



BOREHOLE DEPTH (ft): **20.0** NORTHING:  
 BOREHOLE DIAMETER (in): **3** EASTING:  
 INITIAL DTW (ft): **NE** LATITUDE:  
 STATIC DTW (ft): **NE** LONGITUDE:  
 LOGGED BY: **J.R.** CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
		SP	<b>SAND TRACE SILT</b> ; brown; fine grained; dry; loose; organic material present (roots)			1000 HA-48-1'	0.0		
			No organics			1005 HA-48-3'	0.0		
5			Moist			1010 HA-48-5'	0.0	5	
						1021 HA-48-8'	0.0		
10			Trending light brown			(10/3/17) 0855 HA-48-10'	0.0	10	← Bentonite chips
						0900 HA-48-15'	0.0	15	
15						0925 HA-48-18'	0.0		
			Turns dark brown			0935 HA-48-20'	0.0	20	
20			Borehole terminated at 20 feet.						
25								25	
30								30	
35								35	

SECOR\_SLO\_GEOPROBE FORMER-NORTHERN-LANDFILL.GPJ SECOR\_SLO.GDT 4/24/18

CLIENT: **Phillips 66**  
 PROJECT: **Northern Inactive Waste Site**  
 LOCATION: **2555 Willow Road, Arroyo Grande, CA. 93420**  
 PROJECT NUMBER: **185850429**  
 DRILLING STARTED: **10/4/17** COMPLETED: **10/5/17**  
 DRILLING COMPANY: **Stantec/S&G Drilling**  
 DRILLING EQUIPMENT: **Hand Auger/Geoprobe**  
 DRILLING METHOD: **Hand Auger/ Direct Push**  
 SAMPLING EQUIPMENT:

BOREHOLE NO:

**HA-49**

PAGE 1 OF 1



BOREHOLE DEPTH (ft): **15.0**  
 BOREHOLE DIAMETER (in): **3**  
 INITIAL DTW (ft): **NE**  
 STATIC DTW (ft): **NE**  
 LOGGED BY: **J.R.**

NORTHING:  
 EASTING:  
 LATITUDE:  
 LONGITUDE:  
 CHECKED BY: **B.L./K.H**

Depth (feet)	Graphic Log	USCS	Description	Recovery	Sample	Time Sample ID	Headspace PID (ppm)	Depth (feet)	Borehole Backfill
5		SP	<b>SAND TRACE SILT</b> ; brown; fine grained; dry; loose			1400 HA-49-1'	0.0		
			Slightly moist			1405 HA-49-3'	0.0		
			Moist			1420 HA-49-5'	0.0	5	
10						(10/5/17) 0810 HA-49-10'	0.0	10	← Bentonite chips
15			Borehole terminated at 15 feet.			0815 HA-49-15'	0.0	15	
20								20	
25								25	
30								30	
35								35	

# **APPENDIX B**

## **STANDARD OPERATING PROCEDURES**



## **STANDARD OPERATING PROCEDURES**

The following section describes field techniques that are performed by Stantec personnel to complete the tasks involved with this project.

### **LOCATING UNDERGROUND UTILITIES**

Prior to the commencement of work on site, Stantec personnel marks the boring locations with white paint and researches the location of all underground utilities with the assistance of Underground Service Alert (USA). USA contacts the owners of the various utilities in the vicinity of the site to have the utility owners mark the locations of their underground utilities. In addition, a private utility locator is subcontracted to further locate possible underground utilities in each of the boring areas. Prior to drilling, each boring is advanced manually to a minimum depth of 8 feet to avoid contact with unmarked utilities.

### **HAND AUGER SOIL BORING AND SOIL SAMPLING PROTOCOL**

Auguring and soil sampling are performed under the direction of a Stantec registered geologist or engineer. All down-hole drilling equipment is decontaminated on completion of the boring. The auger bucket is washed between each sampling event to reduce the potential for cross contamination between samples.

The soil samples are obtained from the hand auger bucket and placed directly into sample jars. The remaining soil will be used for screening with the photoionization detector (PID) or equivalent equipment and for soil logging. Each sample is labeled, identified on a chain of custody, and stored in a chilled cooler for transport to the laboratory. Remaining soil in the sampler is used for later screening with a PID. Soil to be field screened will be placed in re-sealable plastic bags and allowed to reach ambient temperature. Headspace vapors in the bags are field screened with a calibrated PID. The highest observed stable reading is then recorded onto the boring log.

All of the soil samples are observed for lithology and visually classified in accordance with the Unified Soil Classification System (USCS). Soil samples are retained for laboratory analysis based on field observations including PID readings.

Following soil classification and sample collection, the borings are abandoned by placement of bentonite chips within the borehole to the ground surface in lifts and hydrated.

### **DIRECT-PUSH SOIL BORING AND SOIL SAMPLING PROTOCOL**

Drilling and soil sampling are performed under the direction of a registered geologist or engineer. The direct-push borings is drilled using a truck- or track-mounted direct push drill rig. During drilling, the soil lithology is classified and described using the Unified Soil Classification System (USCS).

All down-hole drilling and sampling equipment is decontaminated prior to use and between each boring to reduce the chances of cross contamination. The sampler is washed between each sampling event to reduce the potential for cross contamination between samples. Hand augers are washed between each sampling event to reduce the potential for cross contamination between boreholes.

Soil sampling is performed using a 5-foot long stainless-steel sample barrel fitted with a transparent acetate liner. The soil sampler is advanced ahead of the direct-push rods to collect a continuous soil core. The soil core is screened with a PID and soil samples are collected at the desired interval by cutting and capping a 6-inch long section of the acetate sample liner. The

portion of the sample to be retained for potential laboratory analysis is cut from the soil core, sealed with a Teflon liner and a plastic cap, labeled, identified on the chain of custody, and stored in a chilled cooler for transport to the laboratory. Remaining soil in the sampler is used for screening with a PID or equivalent equipment. The soil field screened with a PID is placed in re-sealable plastic bags and allowed to reach ambient temperature. Headspace vapors in the bags are field screened with a calibrated PID. The highest observed stable reading is then recorded onto the boring log.

## **SAMPLE COLLECTION AND HANDLING**

Proper sample collection and handling are essential in ensuring the quality of each sample. All samples will be collected by experienced field personnel and immediately placed in an ice chest. The ice chest will be delivered to the laboratory via courier or overnight mailing. The individual samples will be collected in suitable containers, which have been pre-cleaned at the laboratory and supplied with the appropriate preservative. The containers will be clearly marked and dated for identification. All samples will be preserved correctly and stored for analysis no longer than the maximum allowable holding time.

Sample identification and chain-of-custody procedures ensure sample integrity and document sample possession from the time of collection to its ultimate disposal. Each sample container submitted for analysis will have a label affixed to identify the job number, sampler, date and time of sample collection, and a sample number unique to that sample. This information, in addition to a description of the sample, field measurements made, sampling methodology, names of on-site personnel, and any other pertinent field observations, will be recorded on the boring log or in the field records. A chain-of-custody sheet will be used to record possession of the sample from the time of collection to its arrival at the laboratory.

# **APPENDIX C**

## **LABORATORY REPORTS AND CHAIN OF CUSTODIES**







**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



Date of Report: 01/17/2018

Kirk Henning

Stantec - SLO

3437 Empresa Drive, Suite A

Suite A

San Luis Obispo, CA 93401

Client Project: 185850429

BCL Project: Former Northern Landfill

BCL Work Order: 1726917

Invoice ID: B281501, B283516, B289255

Enclosed are the results of analyses for samples received by the laboratory on 9/21/2017. If you have any questions concerning this report, please feel free to contact me.

Revised Report: This report supercedes Report ID 1000691031

Sincerely,

Contact Person: Molly Meyers  
Client Service Rep

Stuart Buttram  
Technical Director

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

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# Chain of Custody Form

Project #: 185850489		Project Name: P66 SGR	
Client: Stater		Attn: K.K. Henning	
Street Address: 3437 Empire Dr. Ste A		Former Northern Landfill	
City, State, Zip: San Luis Obispo, CA 93401		Sampler(s): Tim Raney	
Phone: 805.250.2851 Fax:			
Email: K.K.Henning@stater.com			
Work Order #:			
Sample #	Description	Date Sampled	Time Sampled
1	HA-32(1)-1	09/21/17	09:00
2	HA-32(3)-3	09/21/17	09:30
3	HA-32(3)-5	09/21/17	11:00
4	HA-33-1	09/21/17	11:10
5	HA-33-3	09/21/17	11:15
6	HA-33-5	09/21/17	11:20

Analysis Requested		Comments: will call for analyses	
Please refer to the back of this page for completion instructions and method legend.			
Sample Matrix	Result Request **Surcharge	Notes	
Soil	<input type="checkbox"/> STD <input type="checkbox"/> 5 Day** <input type="checkbox"/> 2 Day** <input type="checkbox"/> 1 Day**	RUSH!	
Drinking Water			
Ground Water			
Waste Water			
Other			

Billing		Global ID (Required for EDT)	
Client: Use P66 Rates		1. Received By: [Signature] Date: 9/21/17 Time: 1345	
Address:		2. Received By: [Signature] Date: 9/21/17 Time: 1730	
City: State: Zip:		3. Received By: [Signature] Date: 9/21/17 Time: 1730	
Attn:			
P.O. #:			

BC Laboratories, Inc. - 4100 Atlas Ct. - Bakersfield, CA 93308 - 661.327.4911 - Fax: 661.327.1918 - www.bclabs.com



Chain of Custody Form

Report #: 17-26917

Client: Stantec

Attn: \_\_\_\_\_

Street Address: \_\_\_\_\_

City, State, Zip: \_\_\_\_\_

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

Email: \_\_\_\_\_

Work Order #: \_\_\_\_\_

Project #: \_\_\_\_\_

Project Name: \_\_\_\_\_

Sampler(s): \_\_\_\_\_

Analysis Requested: \_\_\_\_\_

Comments: \_\_\_\_\_

Result Request "Surcharge"  
☐ STD ☐ 5 Day ☐ 2 Day ☐ 1 Day

Sample Matrix  
☐ Waste Water  
☐ Ground Water  
☐ Drinking Water  
☐ Sludge  
☐ Soil  
☐ Other

Notes

Sample #	Description	Date Sampled	Time Sampled	Global ID (Provide for EDT)	EDF Required? Geotracker <input type="checkbox"/> Yes <input type="checkbox"/> No	Send Copy to State of CA? (EDT) <input type="checkbox"/> Yes <input type="checkbox"/> No	1. Relinquished By	Time	Date	1. Received By	Time	Date
1	HA-32(1)-1 - very dark											
2	HA-32(3)-3 - Dark red odorous											
3	HA-32(3) 5 - Reddish yellow											
4	HA-33-1											
5	HA-33-3											
6	HA-33-5											

Billing  
☐ Same as above

Client: \_\_\_\_\_

Address: \_\_\_\_\_

City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

Attn: \_\_\_\_\_

P.O. #: \_\_\_\_\_

System # (Needed for EDT)

1. Received By \_\_\_\_\_ Time \_\_\_\_\_ Date \_\_\_\_\_

2. Received By \_\_\_\_\_ Time \_\_\_\_\_ Date \_\_\_\_\_

3. Received By \_\_\_\_\_ Time \_\_\_\_\_ Date \_\_\_\_\_

BC Laboratories, Inc. - 4100 Atlas Ct. - Bakersfield, CA 93308 - 661.327.4911 - Fax: 661.327.1918 - www.bclabs.com



Chain of Custody Form

Client:		Project #:		Project Name:		Attn:		Street Address:		City, State, Zip:		Phone:		Fax:		Email:		Work Order #: 17-26917	
Sample #	Description	Date Sampled	Time Sampled	Analysis Requested	Comments:	Sample Matrix	Result Request "Surcharge"	Notes	Global ID (Needed for EDT)	EDF Required? Geotracker	Send Copy to State of CA? (EDT)	1. Received By	2. Received By	3. Received By	1. Relinquished By	2. Relinquished By	3. Relinquished By	System # (Needed for EDT)	
HA-32(1)-1	very dark																		
HA-32(3)-3	Dark w/ olive																		
HA-32(3)-5	Medium Reddish																		
HA-33-1																			
HA-33-3	None																		
HA-33-5																			

BC Laboratories, Inc. - 4100 Atlas Ct. - Bakersfield, CA 93308 - 661.327.4911 - Fax: 661.327.1918 - www.bclabs.com



BC LABORATORIES INC.		COOLER RECEIPT FORM		Page 1 Of 1							
Commission #: <u>17-26917</u>											
SHIPPING INFORMATION			SHIPPING CONTAINER		FREE LIQUID						
Fed Ex <input type="checkbox"/>	UPS <input type="checkbox"/>	Ontrac <input type="checkbox"/>	Hand Delivery <input type="checkbox"/>	Ice Chest <input checked="" type="checkbox"/>	YES <input type="checkbox"/> NO <input type="checkbox"/>						
BC Lab Field Service <input checked="" type="checkbox"/>	Other <input type="checkbox"/> (Specify) _____		None <input type="checkbox"/> Box <input type="checkbox"/>		W / S						
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: _____											
Custody Seals: Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments: _____											
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											
COC Received <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Emissivity: <u>0.98</u> Container: <u>caloss</u> Thermometer ID: <u>202</u>		Date/Time <u>9/21/17</u> 1730							
Temperature: (A) <u>2.5</u> °C / (C) <u>2.2</u> °C		Analyst Init <u>RWC</u>									
SAMPLE CONTAINERS		SAMPLE NUMBERS									
		1	2	3	4	5	6	7	8	9	10
QT PE UNPRES											
4oz / 8oz / 16oz PE UNPRES											
2oz Cr*											
QT INORGANIC CHEMICAL METALS											
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz											
PT CYANIDE											
PT NITROGEN FORMS											
PT TOTAL SULFIDE											
2oz NITRATE / NITRITE											
PT TOTAL ORGANIC CARBON											
PT CHEMICAL OXYGEN DEMAND											
PA PHENOLICS											
40ml VOA VIAL TRAVEL BLANK											
40ml VOA VIAL											
QT EPA 1664											
PT ODOR											
RADIOLOGICAL											
BACTERIOLOGICAL											
40 ml VOA VIAL- 504											
QT EPA 508/605/8080											
QT EPA 515.1/5150											
QT EPA 525											
QT EPA 525 TRAVEL BLANK											
40ml EPA 547											
40ml EPA 531.1											
8oz EPA 543											
QT EPA 549											
QT EPA 8015M											
QT EPA 8270											
8oz / 16oz / 32oz AMBER											
8oz / 16oz / 32oz JAR											
SOIL SLEEVE											
PCB VIAL											
PLASTIC BAG											
TEDLAR BAG											
FERROUS IRON											
ENCORE											
SMART KIT											
SUMMA CANISTER											
Comments: _____											
Sample Numbering Completed By: <u>JDR</u> Date/Time: <u>9-22-17</u> 1843											
= Actual / C = Corrected											
[S:\WFDoc\WordPerfect\LAB_DOCS\FORMS\SAWRECv 20]											

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/17/2018 8:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
1726917-01	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/21/2017 17:30
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/21/2017 09:00
1726917-01	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-32(1)-1	<b>Lab Matrix:</b> Solids
1726917-01	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-32(1)-1
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:
1726917-02	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/21/2017 17:30
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/21/2017 09:30
1726917-02	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-32(3)-3	<b>Lab Matrix:</b> Solids
1726917-02	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-32(3)-3
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:
1726917-03	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/21/2017 17:30
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/21/2017 11:00
1726917-03	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-32(3)-5	<b>Lab Matrix:</b> Solids
1726917-03	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-32(3)-5
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/17/2018 8:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1726917-04	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1726917-04	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-33-1
1726917-04	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/21/2017 17:30
1726917-04	<b>Sampling Date:</b>	09/21/2017 11:10
	<b>Sample Depth:</b>	---
1726917-04	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1726917-04	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1726917-04	<b>Location ID (FieldPoint):</b>	HA-33-1
	<b>Matrix:</b>	SO
1726917-04	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1726917-05	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1726917-05	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-33-3
1726917-05	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/21/2017 17:30
1726917-05	<b>Sampling Date:</b>	09/21/2017 11:15
	<b>Sample Depth:</b>	---
1726917-05	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1726917-05	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1726917-05	<b>Location ID (FieldPoint):</b>	HA-33-3
	<b>Matrix:</b>	SO
1726917-05	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1726917-06	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1726917-06	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-33-5
1726917-06	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/21/2017 17:30
1726917-06	<b>Sampling Date:</b>	09/21/2017 11:20
	<b>Sample Depth:</b>	---
1726917-06	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1726917-06	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1726917-06	<b>Location ID (FieldPoint):</b>	HA-33-5
	<b>Matrix:</b>	SO
1726917-06	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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**EMSL Analytical, Inc.**

464 McCormick Street San Leandro, CA 94577  
Tel/Fax: (510) 895-3675 / (510) 895-3680  
<http://www.EMSL.com / sanleandrolab@emsl.com>

EMSL Order: 091800323  
Customer ID: BCLA50  
Customer PO: 1726917  
Project ID:

**Attention:** Molly Meyers  
BC Laboratories, Inc.  
4100 Atlas Court  
Bakersfield, CA 93308

**Phone:** (661) 327-4911  
**Fax:** (661) 327-1918  
**Received Date:** 01/04/2018 9:30 AM  
**Analysis Date:** 01/09/2018  
**Collected Date:**

**Project:** 1726917

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020  
Method(s) using Polarized Light Microscopy**

Sample	Description	Appearance	Non-Asbestos		Asbestos % Type
			% Fibrous	% Non-Fibrous	
1726917-03		Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
091800323-0001 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
172691706		Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
091800323-0002 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					

Analyst(s)  
Adam C. Fink (2)

  
Matthew Batongbacal  
or Other Approved Signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The limit of detection as stated in the method is 1%. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The test results contained within this report meet the requirements of NELAC unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from: 01/10/2018 02:54:32

ASB\_PLM\_0008\_0001 - 1.78 Printed: 1/9/2018 11:54 PM

Page 1 of 1

Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/17/2018 8:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Organochlorine Pesticides and PCB's (EPA Method 8080)

BCL Sample ID: 1726917-01		Client Sample Name: Former Northern Landfill, HA-32(1)-1, 9/21/2017 9:00:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Aldrin	ND	mg/kg	0.014	0.00093	EPA-8080	ND	S05	1
alpha-BHC	ND	mg/kg	0.014	0.0035	EPA-8080	ND	S05	1
beta-BHC	ND	mg/kg	0.014	0.0041	EPA-8080	ND	S05	1
delta-BHC	ND	mg/kg	0.014	0.0013	EPA-8080	ND	S05	1
gamma-BHC (Lindane)	ND	mg/kg	0.014	0.0022	EPA-8080	ND	S05	1
Chlordane (Technical)	ND	mg/kg	1.4	0.046	EPA-8080	ND	S05	1
4,4'-DDD	ND	mg/kg	0.014	0.0057	EPA-8080	ND	S05	1
<b>4,4'-DDE</b>	<b>0.025</b>	<b>mg/kg</b>	<b>0.014</b>	<b>0.00055</b>	<b>EPA-8080</b>	ND	<b>S05</b>	1
<b>4,4'-DDT</b>	<b>0.062</b>	<b>mg/kg</b>	<b>0.014</b>	<b>0.0025</b>	<b>EPA-8080</b>	ND	<b>S05</b>	1
<b>Dieldrin</b>	<b>0.015</b>	<b>mg/kg</b>	<b>0.014</b>	<b>0.0022</b>	<b>EPA-8080</b>	ND	<b>S05</b>	1
Endosulfan I	ND	mg/kg	0.014	0.00060	EPA-8080	ND	S05	1
Endosulfan II	ND	mg/kg	0.014	0.0038	EPA-8080	ND	S05	1
Endosulfan sulfate	ND	mg/kg	0.014	0.0093	EPA-8080	ND	S05	1
Endrin	ND	mg/kg	0.014	0.0025	EPA-8080	ND	S05	1
Endrin aldehyde	ND	mg/kg	0.014	0.0063	EPA-8080	ND	S05	1
Heptachlor	ND	mg/kg	0.014	0.00098	EPA-8080	ND	S05	1
Heptachlor epoxide	ND	mg/kg	0.014	0.00046	EPA-8080	ND	S05	1
Methoxychlor	ND	mg/kg	0.014	0.0057	EPA-8080	ND	S05	1
Toxaphene	ND	mg/kg	1.4	0.26	EPA-8080	ND	S05	1
PCB-1016	ND	mg/kg	0.27	0.11	EPA-8080	ND	S05	1
PCB-1221	ND	mg/kg	0.27	0.20	EPA-8080	ND	S05	1
PCB-1232	ND	mg/kg	0.27	0.20	EPA-8080	ND	S05	1
PCB-1242	ND	mg/kg	0.27	0.11	EPA-8080	ND	S05	1
PCB-1248	ND	mg/kg	0.27	0.19	EPA-8080	ND	S05	1
PCB-1254	ND	mg/kg	0.27	0.087	EPA-8080	ND	S05	1
PCB-1260	ND	mg/kg	0.27	0.079	EPA-8080	ND	S05	1
Total PCB's (Summation)	ND	mg/kg	0.27	0.14	EPA-8080	ND	S05	1
TCMX (Surrogate)	49.9	%	20 - 130 (LCL - UCL)		EPA-8080		S05	1
Decachlorobiphenyl (Surrogate)	58.1	%	40 - 130 (LCL - UCL)		EPA-8080		S05	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8080	10/11/17 20:30	10/12/17 13:12	HKS	GC-17	27.273	BJ1354

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/17/2018 8:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Organo-Phosphorus Pesticide Analysis (EPA Method 8141A)

BCL Sample ID: 1726917-01		Client Sample Name: Former Northern Landfill, HA-32(1)-1, 9/21/2017 9:00:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Azinphos methyl	ND	mg/kg	0.16	0.12	EPA-8141A	ND	S05	1
Bolstar	ND	mg/kg	0.16	0.035	EPA-8141A	ND	S05	1
Chlorpyrifos	ND	mg/kg	0.16	0.022	EPA-8141A	ND	S05	1
Coumaphos	ND	mg/kg	0.16	0.13	EPA-8141A	ND	S05	1
Demeton O/S	ND	mg/kg	0.16	0.054	EPA-8141A	ND	S05	1
Diazinon	ND	mg/kg	0.16	0.038	EPA-8141A	ND	S05	1
Dichlorvos	ND	mg/kg	0.16	0.014	EPA-8141A	ND	S05	1
Disulfoton	ND	mg/kg	0.16	0.030	EPA-8141A	ND	S05	1
Ethoprop	ND	mg/kg	0.16	0.019	EPA-8141A	ND	S05	1
Fensulfothion	ND	mg/kg	0.16	0.088	EPA-8141A	ND	S05	1
Fenthion	ND	mg/kg	0.16	0.033	EPA-8141A	ND	S05	1
Merphos	ND	mg/kg	0.16	0.030	EPA-8141A	ND	S05	1
Methyl parathion	ND	mg/kg	0.16	0.039	EPA-8141A	ND	S05	1
Mevinphos	ND	mg/kg	0.16	0.038	EPA-8141A	ND	S05	1
Naled	ND	mg/kg	0.16	0.068	EPA-8141A	ND	S05	1
Phorate	ND	mg/kg	0.16	0.041	EPA-8141A	ND	S05	1
Ronnel (Fenchlorphos)	ND	mg/kg	0.16	0.022	EPA-8141A	ND	S05	1
Stirophos (Tetrachlorvinphos)	ND	mg/kg	0.16	0.032	EPA-8141A	ND	S05	1
Tokuthion (Prothiofos)	ND	mg/kg	0.16	0.027	EPA-8141A	ND	S05	1
Trichloronate	ND	mg/kg	0.16	0.021	EPA-8141A	ND	S05	1
Triphenylphosphate (Surrogate)	117	%	40 - 120 (LCL - UCL)		EPA-8141A		S05	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8141A	10/13/17 18:20	10/16/17 22:38	RSM	GC-18	15.789	BJ1652

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**Reported:** 01/17/2018 8:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Chlorinated Herbicides (EPA Method 8151A)

BCL Sample ID: 1726917-01		Client Sample Name: Former Northern Landfill, HA-32(1)-1, 9/21/2017 9:00:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
2,4-D	ND	mg/kg	1.8	0.51	EPA-8151A	ND	A01,S05	1
2,4-DB	ND	mg/kg	3.5	1.5	EPA-8151A	ND	A01,S05	1
Dalapon	ND	mg/kg	4.4	3.0	EPA-8151A	ND	A01,S05	1
Dicamba	ND	mg/kg	0.18	0.14	EPA-8151A	ND	A01,S05	1
Dichloroprop	ND	mg/kg	1.8	0.49	EPA-8151A	ND	A01,S05	1
Dinoseb	ND	mg/kg	0.62	0.21	EPA-8151A	ND	A01,S05	1
2,4,5-T	ND	mg/kg	0.26	0.11	EPA-8151A	ND	A01,S05	1
2,4,5-TP (Silvex)	ND	mg/kg	0.26	0.11	EPA-8151A	ND	A01,S05	1
2,4-Dichlorophenylacetic acid (Surrogate)	56.2	%	40 - 120 (LCL - UCL)		EPA-8151A		A01,S05	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8151A	10/13/17 11:40	10/17/17 13:55	MSB	GC-8	88.235	BJ1645

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**Reported:** 01/17/2018 8:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1726917-01		Client Sample Name: Former Northern Landfill, HA-32(1)-1, 9/21/2017 9:00:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND	A26	1
Bromobenzene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND	A26	1
Bromochloromethane	ND	mg/kg	0.0050	0.00092	EPA-8260B	ND	A26	1
Bromodichloromethane	ND	mg/kg	0.0050	0.00084	EPA-8260B	ND	A26	1
Bromoform	ND	mg/kg	0.0050	0.0015	EPA-8260B	ND	A26	1
Bromomethane	ND	mg/kg	0.0050	0.0016	EPA-8260B	ND	A26	1
n-Butylbenzene	ND	mg/kg	0.0050	0.0015	EPA-8260B	ND	A26	1
sec-Butylbenzene	ND	mg/kg	0.0050	0.0012	EPA-8260B	ND	A26	1
tert-Butylbenzene	ND	mg/kg	0.0050	0.0012	EPA-8260B	ND	A26	1
Carbon tetrachloride	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND	A26	1
Chlorobenzene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND	A26	1
Chloroethane	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND	A26	1
Chloroform	ND	mg/kg	0.0050	0.00063	EPA-8260B	ND	A26	1
Chloromethane	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND	A26	1
2-Chlorotoluene	ND	mg/kg	0.0050	0.0018	EPA-8260B	ND	A26	1
4-Chlorotoluene	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND	A26	1
Dibromochloromethane	ND	mg/kg	0.0050	0.00099	EPA-8260B	ND	A26	1
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0050	0.0017	EPA-8260B	ND	A26	1
1,2-Dibromoethane	ND	mg/kg	0.0050	0.0010	EPA-8260B	ND	A26	1
Dibromomethane	ND	mg/kg	0.0050	0.0018	EPA-8260B	ND	A26	1
1,2-Dichlorobenzene	ND	mg/kg	0.0050	0.00081	EPA-8260B	ND	A26	1
1,3-Dichlorobenzene	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND	A26	1
1,4-Dichlorobenzene	ND	mg/kg	0.0050	0.0015	EPA-8260B	ND	A26	1
Dichlorodifluoromethane	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND	A26	1
1,1-Dichloroethane	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND	A26	1
1,2-Dichloroethane	ND	mg/kg	0.0050	0.00085	EPA-8260B	ND	A26	1
1,1-Dichloroethene	ND	mg/kg	0.0050	0.0012	EPA-8260B	ND	A26	1
cis-1,2-Dichloroethene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND	A26	1
trans-1,2-Dichloroethene	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND	A26	1
1,2-Dichloropropane	ND	mg/kg	0.0050	0.00081	EPA-8260B	ND	A26	1
1,3-Dichloropropane	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND	A26	1
2,2-Dichloropropane	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND	A26	1
1,1-Dichloropropene	ND	mg/kg	0.0050	0.0012	EPA-8260B	ND	A26	1

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**Reported:** 01/17/2018 8:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1726917-01		Client Sample Name: Former Northern Landfill, HA-32(1)-1, 9/21/2017 9:00:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
cis-1,3-Dichloropropene	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND	A26	1
trans-1,3-Dichloropropene	ND	mg/kg	0.0050	0.0012	EPA-8260B	ND	A26	1
Ethylbenzene	ND	mg/kg	0.0050	0.0015	EPA-8260B	ND	A26	1
Hexachlorobutadiene	ND	mg/kg	0.0050	0.0017	EPA-8260B	ND	A26	1
Isopropylbenzene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND	A26	1
p-Isopropyltoluene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND	A26	1
Methylene chloride	ND	mg/kg	0.010	0.0024	EPA-8260B	ND	A26	1
Methyl t-butyl ether	ND	mg/kg	0.0050	0.00050	EPA-8260B	ND	A26	1
Naphthalene	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND	A26	1
n-Propylbenzene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND	A26	1
Styrene	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND	A26	1
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND	A26	1
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND	A26	1
Tetrachloroethene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND	A26	1
<b>Toluene</b>	<b>0.0018</b>	<b>mg/kg</b>	<b>0.0050</b>	<b>0.0012</b>	<b>EPA-8260B</b>	ND	<b>J,A26</b>	<b>1</b>
1,2,3-Trichlorobenzene	ND	mg/kg	0.0050	0.0021	EPA-8260B	ND	A26	1
1,2,4-Trichlorobenzene	ND	mg/kg	0.0050	0.0020	EPA-8260B	ND	A26	1
1,1,1-Trichloroethane	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND	A26	1
1,1,2-Trichloroethane	ND	mg/kg	0.0050	0.00077	EPA-8260B	ND	A26	1
Trichloroethene	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND	A26	1
Trichlorofluoromethane	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND	A26	1
1,2,3-Trichloropropane	ND	mg/kg	0.0050	0.0016	EPA-8260B	ND	A26	1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND	A26	1
1,2,4-Trimethylbenzene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND	A26	1
1,3,5-Trimethylbenzene	ND	mg/kg	0.0050	0.0015	EPA-8260B	ND	A26	1
Vinyl chloride	ND	mg/kg	0.0050	0.0016	EPA-8260B	ND	A26	1
Total Xylenes	ND	mg/kg	0.010	0.0034	EPA-8260B	ND	A26	1
p- & m-Xylenes	ND	mg/kg	0.0050	0.0022	EPA-8260B	ND	A26	1
o-Xylene	ND	mg/kg	0.0050	0.0012	EPA-8260B	ND	A26	1
1,2-Dichloroethane-d4 (Surrogate)	85.9	%	70 - 121 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	89.6	%	81 - 117 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	85.7	%	74 - 121 (LCL - UCL)		EPA-8260B			1

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**Reported:** 01/17/2018 8:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1726917-01		<b>Client Sample Name:</b> Former Northern Landfill, HA-32(1)-1, 9/21/2017 9:00:00AM					
Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	10/18/17 06:00	10/23/17 11:53	ADC	MS-V2	1	BJ1973



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**Reported:** 01/17/2018 8:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

BCL Sample ID: 1726917-01		Client Sample Name: Former Northern Landfill, HA-32(1)-1, 9/21/2017 9:00:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Acenaphthene	0.80	mg/kg	0.60	0.24	EPA-8270C-SIM	ND	A01,S05	1
Acenaphthylene	ND	mg/kg	0.60	0.22	EPA-8270C-SIM	ND	A01,S05	1
Anthracene	1.6	mg/kg	0.60	0.24	EPA-8270C-SIM	ND	A01,S05	1
Benzo[a]anthracene	4.1	mg/kg	0.60	0.22	EPA-8270C-SIM	ND	A01,S05	1
Benzo[b]fluoranthene	4.9	mg/kg	0.60	0.19	EPA-8270C-SIM	ND	A01,S05	1
Benzo[k]fluoranthene	0.60	mg/kg	0.60	0.22	EPA-8270C-SIM	ND	A01,S05	1
Benzo[a]pyrene	4.6	mg/kg	0.60	0.19	EPA-8270C-SIM	ND	A01,S05	1
Benzo[g,h,i]perylene	2.9	mg/kg	0.60	0.22	EPA-8270C-SIM	ND	A01,S05	1
Chrysene	9.5	mg/kg	0.60	0.19	EPA-8270C-SIM	ND	A01,S05	1
Dibenzo[a,h]anthracene	2.0	mg/kg	0.60	0.20	EPA-8270C-SIM	ND	A01,S05	1
Fluoranthene	1.0	mg/kg	0.60	0.28	EPA-8270C-SIM	ND	A01,S05	1
Fluorene	1.1	mg/kg	0.60	0.22	EPA-8270C-SIM	ND	A01,S05	1
Indeno[1,2,3-cd]pyrene	1.0	mg/kg	0.60	0.18	EPA-8270C-SIM	ND	A01,S05	1
Naphthalene	3.1	mg/kg	0.60	0.22	EPA-8270C-SIM	ND	A01,S05	1
Phenanthrene	4.5	mg/kg	0.60	0.24	EPA-8270C-SIM	ND	A01,S05	1
Pyrene	5.0	mg/kg	0.60	0.30	EPA-8270C-SIM	ND	A01,S05	1
Nitrobenzene-d5 (Surrogate)	92.5	%	30 - 110 (LCL - UCL)		EPA-8270C-SIM		A01,S05	1
2-Fluorobiphenyl (Surrogate)	75.0	%	40 - 120 (LCL - UCL)		EPA-8270C-SIM		A01,S05	1
p-Terphenyl-d14 (Surrogate)	75.0	%	30 - 120 (LCL - UCL)		EPA-8270C-SIM		A01,S05	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8270C-SIM	10/11/17 21:00	10/13/17 23:27	MSB	MS-B7	200	BJ1535

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**Reported:** 01/17/2018 8:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1726917-01	<b>Client Sample Name:</b>	Former Northern Landfill, HA-32(1)-1, 9/21/2017 9:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	3000	750	EPA-8015B/FFP	ND	A01	1
TPH - Diesel (FFP)	7400	mg/kg	1500	180	EPA-8015B/FFP	ND	A01,A52	1
TPH - Motor Oil	11000	mg/kg	3000	980	EPA-8015B/FFP	ND	A01,A57	1
Tetracosane (Surrogate)	88.7	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		A01	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/28/17 20:25	10/03/17 02:52	AS1	GC-13	150	B[12745

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**Reported:** 01/17/2018 8:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Chemical Analysis

<b>BCL Sample ID:</b>	1726917-01	<b>Client Sample Name:</b>	Former Northern Landfill, HA-32(1)-1, 9/21/2017 9:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Cyanide	3.3	mg/kg	0.50	0.15	EPA-9012	ND	S05	1
pH	3.35	pH Units	0.05	0.05	EPA-9045D	ND	pH1:1	2
pH Measurement Temperature	23.1	C	0.1	0.1	EPA-9045D	ND		2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9012	10/11/17 09:40	10/11/17 16:23	RCC	KONE-1	1	B[J]1166
2	EPA-9045D	10/24/17 13:30	10/24/17 13:30	DIW	PH10	1	B[J]2498

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San Luis Obispo, CA 93401

**Reported:** 01/17/2018 8:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Total Concentrations (TTLIC)

BCL Sample ID: 1726917-01		Client Sample Name: Former Northern Landfill, HA-32(1)-1, 9/21/2017 9:00:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Antimony	ND	mg/kg	5.0	0.33	EPA-6010B	ND		1
Arsenic	1.1	mg/kg	1.0	0.40	EPA-6010B	ND		1
Barium	51	mg/kg	0.50	0.18	EPA-6010B	ND		1
Beryllium	0.064	mg/kg	0.50	0.047	EPA-6010B	ND	J	1
Cadmium	0.23	mg/kg	0.50	0.052	EPA-6010B	ND	J	1
Chromium	24	mg/kg	0.50	0.050	EPA-6010B	ND		1
Total Hexavalent Chromium	0.67	mg/kg	1.0	0.30	EPA-7199	ND	J	2
Cobalt	0.90	mg/kg	2.5	0.098	EPA-6010B	ND	J	1
Copper	6.8	mg/kg	1.0	0.050	EPA-6010B	ND		1
Lead	41	mg/kg	2.5	0.28	EPA-6010B	ND		1
Mercury	ND	mg/kg	0.16	0.019	EPA-7471A	ND	S05	3
Molybdenum	23	mg/kg	2.5	0.050	EPA-6010B	ND		1
Nickel	38	mg/kg	0.50	0.15	EPA-6010B	ND		1
Selenium	4.7	mg/kg	1.0	0.98	EPA-6010B	ND		1
Silver	ND	mg/kg	0.50	0.067	EPA-6010B	ND		1
Thallium	ND	mg/kg	5.0	0.64	EPA-6010B	ND		1
Vanadium	71	mg/kg	0.50	0.11	EPA-6010B	ND		1
Zinc	11	mg/kg	2.5	0.087	EPA-6010B	0.36		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	10/24/17 09:30	10/24/17 16:01	JCC	PE-OP3	0.980	B[J2427
2	EPA-7199	10/11/17 13:00	10/12/17 22:43	OLH	IC-4	1	B[J1201
3	EPA-7471A	10/24/17 09:50	10/24/17 16:30	JP1	CETAC2	0.962	B[J2441

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**Reported:** 01/17/2018 8:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1726917-02	<b>Client Sample Name:</b>	Former Northern Landfill, HA-32(3)-3, 9/21/2017 9:30:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	1000	250	EPA-8015B/FFP	ND	A01	1
TPH - Diesel (FFP)	ND	mg/kg	500	60	EPA-8015B/FFP	ND	A01	1
<b>TPH - Motor Oil</b>	<b>6000</b>	<b>mg/kg</b>	<b>1000</b>	<b>320</b>	<b>EPA-8015B/FFP</b>	ND	<b>A01</b>	1
Tetracosane (Surrogate)	0	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		A01,A17	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/28/17 20:25	10/04/17 15:23	AS1	GC-13	49.342	B[12745

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**Reported:** 01/17/2018 8:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1726917-03	<b>Client Sample Name:</b>	Former Northern Landfill, HA-32(3)-5, 9/21/2017 11:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	1200	300	EPA-8015B/FFP	ND	A01	1
TPH - Diesel (FFP)	3600	mg/kg	600	72	EPA-8015B/FFP	ND	A01,A52	1
TPH - Motor Oil	9800	mg/kg	1200	390	EPA-8015B/FFP	ND	A01	1
Tetracosane (Surrogate)	73.2	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		A01	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/28/17 20:25	10/04/17 10:50	AS1	GC-13	60	B[12745

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1726917-04	<b>Client Sample Name:</b>	Former Northern Landfill, HA-33-1, 9/21/2017 11:10:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>69</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	67.7	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/28/17 20:25	10/03/17 00:35	AS1	GC-13	1.003	B[12745

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1726917-05	<b>Client Sample Name:</b>	Former Northern Landfill, HA-33-3, 9/21/2017 11:15:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	94.4	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/28/17 20:25	10/02/17 20:47	AS1	GC-13	1.010	B[12745

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1726917-06	<b>Client Sample Name:</b>	Former Northern Landfill, HA-33-5, 9/21/2017 11:20:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	94.3	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/28/17 20:25	10/02/17 21:09	AS1	GC-13	1.003	B[12745

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## Organochlorine Pesticides and PCB's (EPA Method 8080)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J1354</b>						
Aldrin	B[J1354-BLK1	ND	mg/kg	0.00050	0.000034	
alpha-BHC	B[J1354-BLK1	ND	mg/kg	0.00050	0.00013	
beta-BHC	B[J1354-BLK1	ND	mg/kg	0.00050	0.00015	
delta-BHC	B[J1354-BLK1	ND	mg/kg	0.00050	0.000047	
gamma-BHC (Lindane)	B[J1354-BLK1	ND	mg/kg	0.00050	0.000082	
Chlordane (Technical)	B[J1354-BLK1	ND	mg/kg	0.050	0.0017	
4,4'-DDD	B[J1354-BLK1	ND	mg/kg	0.00050	0.00021	
4,4'-DDE	B[J1354-BLK1	ND	mg/kg	0.00050	0.000020	
4,4'-DDT	B[J1354-BLK1	ND	mg/kg	0.00050	0.000093	
Dieldrin	B[J1354-BLK1	ND	mg/kg	0.00050	0.000079	
Endosulfan I	B[J1354-BLK1	ND	mg/kg	0.00050	0.000022	
Endosulfan II	B[J1354-BLK1	ND	mg/kg	0.00050	0.00014	
Endosulfan sulfate	B[J1354-BLK1	ND	mg/kg	0.00050	0.00034	
Endrin	B[J1354-BLK1	ND	mg/kg	0.00050	0.000091	
Endrin aldehyde	B[J1354-BLK1	ND	mg/kg	0.00050	0.00023	
Heptachlor	B[J1354-BLK1	ND	mg/kg	0.00050	0.000036	
Heptachlor epoxide	B[J1354-BLK1	ND	mg/kg	0.00050	0.000017	
Methoxychlor	B[J1354-BLK1	ND	mg/kg	0.00050	0.00021	
Toxaphene	B[J1354-BLK1	ND	mg/kg	0.050	0.0094	
PCB-1016	B[J1354-BLK1	ND	mg/kg	0.010	0.0039	
PCB-1221	B[J1354-BLK1	ND	mg/kg	0.010	0.0072	
PCB-1232	B[J1354-BLK1	ND	mg/kg	0.010	0.0074	
PCB-1242	B[J1354-BLK1	ND	mg/kg	0.010	0.0042	
PCB-1248	B[J1354-BLK1	ND	mg/kg	0.010	0.0070	
PCB-1254	B[J1354-BLK1	ND	mg/kg	0.010	0.0032	
PCB-1260	B[J1354-BLK1	ND	mg/kg	0.010	0.0029	
Total PCB's (Summation)	B[J1354-BLK1	ND	mg/kg	0.010	0.0050	
<b>TCMX (Surrogate)</b>	<b>B[J1354-BLK1</b>	<b>77.2</b>	<b>%</b>	<b>20 - 130 (LCL - UCL)</b>		
<b>Decachlorobiphenyl (Surrogate)</b>	<b>B[J1354-BLK1</b>	<b>88.1</b>	<b>%</b>	<b>40 - 130 (LCL - UCL)</b>		

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## Organochlorine Pesticides and PCB's (EPA Method 8080)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	Quals
QC Batch ID: B[J1354										
Aldrin	B[J1354-BS1	LCS	0.0038475	0.0049180	mg/kg	78.2		70 - 130		
gamma-BHC (Lindane)	B[J1354-BS1	LCS	0.0045141	0.0049180	mg/kg	91.8		60 - 140		
4,4'-DDT	B[J1354-BS1	LCS	0.0049633	0.0049180	mg/kg	101		60 - 140		
Dieldrin	B[J1354-BS1	LCS	0.0040702	0.0049180	mg/kg	82.8		70 - 130		
Endrin	B[J1354-BS1	LCS	0.0041059	0.0049180	mg/kg	83.5		60 - 140		
Heptachlor	B[J1354-BS1	LCS	0.0044223	0.0049180	mg/kg	89.9		60 - 140		
TCMX (Surrogate)	B[J1354-BS1	LCS	0.0073305	0.0098361	mg/kg	74.5		20 - 130		
Decachlorobiphenyl (Surrogate)	B[J1354-BS1	LCS	0.015064	0.019672	mg/kg	76.6		40 - 130		

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## Organochlorine Pesticides and PCB's (EPA Method 8080)

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J1354		Used client sample: N									
Aldrin	MS	1724840-12	ND	0.0037960	0.0049834	mg/kg		76.2		50 - 140	
	MSD	1724840-12	ND	0.0038729	0.0050847	mg/kg	2.0	76.2	30	50 - 140	
gamma-BHC (Lindane)	MS	1724840-12	ND	0.0044987	0.0049834	mg/kg		90.3		50 - 140	
	MSD	1724840-12	ND	0.0044827	0.0050847	mg/kg	0.4	88.2	30	50 - 140	
4,4'-DDT	MS	1724840-12	ND	0.0049425	0.0049834	mg/kg		99.2		50 - 140	
	MSD	1724840-12	ND	0.0048339	0.0050847	mg/kg	2.2	95.1	30	50 - 140	
Dieldrin	MS	1724840-12	ND	0.0040259	0.0049834	mg/kg		80.8		40 - 140	
	MSD	1724840-12	ND	0.0040336	0.0050847	mg/kg	0.2	79.3	30	40 - 140	
Endrin	MS	1724840-12	ND	0.0040664	0.0049834	mg/kg		81.6		50 - 150	
	MSD	1724840-12	ND	0.0039898	0.0050847	mg/kg	1.9	78.5	30	50 - 150	
Heptachlor	MS	1724840-12	ND	0.0044482	0.0049834	mg/kg		89.3		60 - 140	
	MSD	1724840-12	ND	0.0043773	0.0050847	mg/kg	1.6	86.1	30	60 - 140	
TCMX (Surrogate)	MS	1724840-12	ND	0.0071365	0.0099668	mg/kg		71.6		20 - 130	
	MSD	1724840-12	ND	0.0073780	0.010169	mg/kg	3.3	72.6		20 - 130	
Decachlorobiphenyl (Surrogate)	MS	1724840-12	ND	0.015988	0.019934	mg/kg		80.2		40 - 130	
	MSD	1724840-12	ND	0.014750	0.020339	mg/kg	8.1	72.5		40 - 130	

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**Project Manager:** Kirk Henning

## Organo-Phosphorus Pesticide Analysis (EPA Method 8141A)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J1652</b>						
Azinphos methyl	B[J1652-BLK1	ND	mg/kg	0.010	0.0073	
Bolstar	B[J1652-BLK1	ND	mg/kg	0.010	0.0022	
Chlorpyrifos	B[J1652-BLK1	ND	mg/kg	0.010	0.0014	
Coumaphos	B[J1652-BLK1	ND	mg/kg	0.010	0.0081	
Demeton O/S	B[J1652-BLK1	ND	mg/kg	0.010	0.0034	
Diazinon	B[J1652-BLK1	ND	mg/kg	0.010	0.0024	
Dichlorvos	B[J1652-BLK1	ND	mg/kg	0.010	0.00091	
Disulfoton	B[J1652-BLK1	ND	mg/kg	0.010	0.0019	
Ethoprop	B[J1652-BLK1	ND	mg/kg	0.010	0.0012	
Fensulfothion	B[J1652-BLK1	ND	mg/kg	0.010	0.0056	
Fenthion	B[J1652-BLK1	ND	mg/kg	0.010	0.0021	
Merphos	B[J1652-BLK1	ND	mg/kg	0.010	0.0019	
Methyl parathion	B[J1652-BLK1	ND	mg/kg	0.010	0.0025	
Mevinphos	B[J1652-BLK1	ND	mg/kg	0.010	0.0024	
Naled	B[J1652-BLK1	ND	mg/kg	0.010	0.0043	
Phorate	B[J1652-BLK1	ND	mg/kg	0.010	0.0026	
Ronnel (Fenchlorphos)	B[J1652-BLK1	ND	mg/kg	0.010	0.0014	
Stirophos (Tetrachlorvinphos)	B[J1652-BLK1	ND	mg/kg	0.010	0.0020	
Tokuthion (Prothiofos)	B[J1652-BLK1	ND	mg/kg	0.010	0.0017	
Trichloronate	B[J1652-BLK1	ND	mg/kg	0.010	0.0013	
<b>Triphenylphosphate (Surrogate)</b>	<b>B[J1652-BLK1</b>	<b>96.6</b>	<b>%</b>	<b>40 - 120 (LCL - UCL)</b>		

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**Project Manager:** Kirk Henning

## Organo-Phosphorus Pesticide Analysis (EPA Method 8141A)

### Quality Control Report - Laboratory Control Sample

								Control Limits		Lab
Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Percent Recovery	RPD	Quals
QC Batch ID: B[J1652										
Bolstar	B[J1652-BS1	LCS	0.065500	0.066667	mg/kg	98.2		50 - 130		
Chlorpyrifos	B[J1652-BS1	LCS	0.071833	0.066667	mg/kg	108		60 - 140		
Diazinon	B[J1652-BS1	LCS	0.069667	0.066667	mg/kg	104		40 - 120		
Methyl parathion	B[J1652-BS1	LCS	0.070333	0.066667	mg/kg	106		60 - 120		
Mevinphos	B[J1652-BS1	LCS	0.086500	0.066667	mg/kg	130		50 - 120		L07
Ronnel (Fenchlorphos)	B[J1652-BS1	LCS	0.071000	0.066667	mg/kg	106		50 - 120		
Stirophos (Tetrachlorvinphos)	B[J1652-BS1	LCS	0.074000	0.066667	mg/kg	111		60 - 140		
Triphenylphosphate (Surrogate)	B[J1652-BS1	LCS	0.090333	0.083333	mg/kg	108		40 - 120		

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## Organo-Phosphorus Pesticide Analysis (EPA Method 8141A)

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J1652		Used client sample: N									
Bolstar	MS	1724840-57	ND	0.071186	0.067797	mg/kg		105		40 - 140	
	MSD	1724840-57	ND	0.068605	0.066445	mg/kg	3.7	103	30	40 - 140	
Chlorpyrifos	MS	1724840-57	ND	0.073051	0.067797	mg/kg		108		40 - 130	
	MSD	1724840-57	ND	0.072093	0.066445	mg/kg	1.3	108	30	40 - 130	
Diazinon	MS	1724840-57	ND	0.078305	0.067797	mg/kg		116		40 - 120	
	MSD	1724840-57	ND	0.071761	0.066445	mg/kg	8.7	108	30	40 - 120	
Methyl parathion	MS	1724840-57	ND	0.076102	0.067797	mg/kg		112		40 - 125	
	MSD	1724840-57	ND	0.074086	0.066445	mg/kg	2.7	112	30	40 - 125	
Mevinphos	MS	1724840-57	ND	0.099492	0.067797	mg/kg		147		40 - 140	Q03
	MSD	1724840-57	ND	0.095847	0.066445	mg/kg	3.7	144	30	40 - 140	Q03
Ronnel (Fenchlorphos)	MS	1724840-57	ND	0.073729	0.067797	mg/kg		109		40 - 120	
	MSD	1724840-57	ND	0.075415	0.066445	mg/kg	2.3	114	30	40 - 120	
Stirophos (Tetrachlorvinphos)	MS	1724840-57	ND	0.075593	0.067797	mg/kg		112		40 - 140	
	MSD	1724840-57	ND	0.072924	0.066445	mg/kg	3.6	110	30	40 - 140	
Triphenylphosphate (Surrogate)	MS	1724840-57	ND	0.090678	0.084746	mg/kg		107		40 - 120	
	MSD	1724840-57	ND	0.088372	0.083056	mg/kg	2.6	106		40 - 120	

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**Project Manager:** Kirk Henning

## Chlorinated Herbicides (EPA Method 8151A)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J1645</b>						
2,4-D	B[J1645-BLK1	ND	mg/kg	0.020	0.0058	
2,4-DB	B[J1645-BLK1	ND	mg/kg	0.040	0.017	
Dalapon	B[J1645-BLK1	ND	mg/kg	0.050	0.034	
Dicamba	B[J1645-BLK1	ND	mg/kg	0.0020	0.0016	
Dichloroprop	B[J1645-BLK1	ND	mg/kg	0.020	0.0055	
Dinoseb	B[J1645-BLK1	ND	mg/kg	0.0070	0.0024	
2,4,5-T	B[J1645-BLK1	ND	mg/kg	0.0030	0.0013	
2,4,5-TP (Silvex)	B[J1645-BLK1	ND	mg/kg	0.0030	0.0012	
<b>2,4-Dichlorophenylacetic acid (Surrogate)</b>	<b>B[J1645-BLK1</b>	<b>74.5</b>	<b>%</b>	<b>40 - 120 (LCL - UCL)</b>		

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**Project Manager:** Kirk Henning

## Chlorinated Herbicides (EPA Method 8151A)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	Quals
QC Batch ID: B[J1645										
2,4-D	B[J1645-BS1	LCS	0.054967	0.079470	mg/kg	69.2		50 - 120		
2,4-DB	B[J1645-BS1	LCS	0.13477	0.17881	mg/kg	75.4		50 - 120		
Dicamba	B[J1645-BS1	LCS	0.016225	0.019868	mg/kg	81.7		50 - 120		
Dichloroprop	B[J1645-BS1	LCS	0.056291	0.079470	mg/kg	70.8		50 - 120		
Dinoseb	B[J1645-BS1	LCS	0.032781	0.039735	mg/kg	82.5		50 - 120		
2,4,5-T	B[J1645-BS1	LCS	0.013907	0.019868	mg/kg	70.0		30 - 120		
2,4,5-TP (Silvex)	B[J1645-BS1	LCS	0.015232	0.019868	mg/kg	76.7		50 - 120		
2,4-Dichlorophenylacetic acid (Surrogate)	B[J1645-BS1	LCS	0.10132	0.13245	mg/kg	76.5		40 - 120		

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**Reported:** 01/17/2018 8:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Chlorinated Herbicides (EPA Method 8151A)

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J1645		Used client sample: N									
2,4-D	MS	1724840-82	ND	0.049153	0.081356	mg/kg		60.4		40 - 120	
	MSD	1724840-82	ND	0.061873	0.080268	mg/kg	22.9	77.1	30	40 - 120	
2,4-DB	MS	1724840-82	ND	0.12441	0.18305	mg/kg		68.0		50 - 120	
	MSD	1724840-82	ND	0.15284	0.18060	mg/kg	20.5	84.6	30	50 - 120	
Dicamba	MS	1724840-82	ND	0.014915	0.020339	mg/kg		73.3		50 - 120	
	MSD	1724840-82	ND	0.016722	0.020067	mg/kg	11.4	83.3	30	50 - 120	
Dichloroprop	MS	1724840-82	ND	0.053559	0.081356	mg/kg		65.8		40 - 120	
	MSD	1724840-82	ND	0.067224	0.080268	mg/kg	22.6	83.8	30	40 - 120	
Dinoseb	MS	1724840-82	ND	0.031525	0.040678	mg/kg		77.5		40 - 130	
	MSD	1724840-82	ND	0.037458	0.040134	mg/kg	17.2	93.3	30	40 - 130	
2,4,5-T	MS	1724840-82	ND	0.012881	0.020339	mg/kg		63.3		30 - 120	
	MSD	1724840-82	ND	0.014716	0.020067	mg/kg	13.3	73.3	30	30 - 120	
2,4,5-TP (Silvex)	MS	1724840-82	ND	0.013559	0.020339	mg/kg		66.7		40 - 120	
	MSD	1724840-82	ND	0.017057	0.020067	mg/kg	22.8	85.0	30	40 - 120	
2,4-Dichlorophenylacetic acid (Surrogate	MS	1724840-82	ND	0.10305	0.13559	mg/kg		76.0		40 - 120	
	MSD	1724840-82	ND	0.10535	0.13378	mg/kg	2.2	78.7		40 - 120	

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**Reported:** 01/17/2018 8:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Volatile Organic Analysis (EPA Method 8260B)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J1973</b>						
Benzene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0013	
Bromobenzene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0013	
Bromochloromethane	B[J1973-BLK1	ND	mg/kg	0.0050	0.00092	
Bromodichloromethane	B[J1973-BLK1	ND	mg/kg	0.0050	0.00084	
Bromoform	B[J1973-BLK1	ND	mg/kg	0.0050	0.0015	
Bromomethane	B[J1973-BLK1	ND	mg/kg	0.0050	0.0016	
n-Butylbenzene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0015	
sec-Butylbenzene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0012	
tert-Butylbenzene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0012	
Carbon tetrachloride	B[J1973-BLK1	ND	mg/kg	0.0050	0.0011	
Chlorobenzene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0013	
Chloroethane	B[J1973-BLK1	ND	mg/kg	0.0050	0.0014	
Chloroform	B[J1973-BLK1	ND	mg/kg	0.0050	0.00063	
Chloromethane	B[J1973-BLK1	ND	mg/kg	0.0050	0.0014	
2-Chlorotoluene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0018	
4-Chlorotoluene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0014	
Dibromochloromethane	B[J1973-BLK1	ND	mg/kg	0.0050	0.00099	
1,2-Dibromo-3-chloropropane	B[J1973-BLK1	ND	mg/kg	0.0050	0.0017	
1,2-Dibromoethane	B[J1973-BLK1	ND	mg/kg	0.0050	0.0010	
Dibromomethane	B[J1973-BLK1	ND	mg/kg	0.0050	0.0018	
1,2-Dichlorobenzene	B[J1973-BLK1	ND	mg/kg	0.0050	0.00081	
1,3-Dichlorobenzene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0014	
1,4-Dichlorobenzene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0015	
Dichlorodifluoromethane	B[J1973-BLK1	ND	mg/kg	0.0050	0.0013	
1,1-Dichloroethane	B[J1973-BLK1	ND	mg/kg	0.0050	0.0014	
1,2-Dichloroethane	B[J1973-BLK1	ND	mg/kg	0.0050	0.00085	
1,1-Dichloroethene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0012	
cis-1,2-Dichloroethene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0013	
trans-1,2-Dichloroethene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0014	
1,2-Dichloropropane	B[J1973-BLK1	ND	mg/kg	0.0050	0.00081	
1,3-Dichloropropane	B[J1973-BLK1	ND	mg/kg	0.0050	0.0011	
2,2-Dichloropropane	B[J1973-BLK1	ND	mg/kg	0.0050	0.0013	
1,1-Dichloropropene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0012	
cis-1,3-Dichloropropene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0011	

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**Reported:** 01/17/2018 8:51  
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**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Volatile Organic Analysis (EPA Method 8260B)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J1973</b>						
trans-1,3-Dichloropropene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0012	
Ethylbenzene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0015	
Hexachlorobutadiene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0017	
Isopropylbenzene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0013	
p-Isopropyltoluene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0013	
Methylene chloride	B[J1973-BLK1	ND	mg/kg	0.010	0.0024	
Methyl t-butyl ether	B[J1973-BLK1	ND	mg/kg	0.0050	0.00050	
Naphthalene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0014	
n-Propylbenzene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0013	
Styrene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0014	
1,1,1,2-Tetrachloroethane	B[J1973-BLK1	ND	mg/kg	0.0050	0.0011	
1,1,2,2-Tetrachloroethane	B[J1973-BLK1	ND	mg/kg	0.0050	0.0011	
Tetrachloroethene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0013	
Toluene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0012	
1,2,3-Trichlorobenzene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0021	
1,2,4-Trichlorobenzene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0020	
1,1,1-Trichloroethane	B[J1973-BLK1	ND	mg/kg	0.0050	0.0011	
1,1,2-Trichloroethane	B[J1973-BLK1	ND	mg/kg	0.0050	0.00077	
Trichloroethene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0011	
Trichlorofluoromethane	B[J1973-BLK1	ND	mg/kg	0.0050	0.0011	
1,2,3-Trichloropropane	B[J1973-BLK1	ND	mg/kg	0.0050	0.0016	
1,1,2-Trichloro-1,2,2-trifluoroethane	B[J1973-BLK1	ND	mg/kg	0.0050	0.0013	
1,2,4-Trimethylbenzene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0013	
1,3,5-Trimethylbenzene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0015	
Vinyl chloride	B[J1973-BLK1	ND	mg/kg	0.0050	0.0016	
Total Xylenes	B[J1973-BLK1	ND	mg/kg	0.010	0.0034	
p- & m-Xylenes	B[J1973-BLK1	ND	mg/kg	0.0050	0.0022	
o-Xylene	B[J1973-BLK1	ND	mg/kg	0.0050	0.0012	
<b>1,2-Dichloroethane-d4 (Surrogate)</b>	<b>B[J1973-BLK1</b>	<b>96.0</b>	<b>%</b>	<b>70 - 121 (LCL - UCL)</b>		
<b>Toluene-d8 (Surrogate)</b>	<b>B[J1973-BLK1</b>	<b>96.1</b>	<b>%</b>	<b>81 - 117 (LCL - UCL)</b>		
<b>4-Bromofluorobenzene (Surrogate)</b>	<b>B[J1973-BLK1</b>	<b>104</b>	<b>%</b>	<b>74 - 121 (LCL - UCL)</b>		

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**Project Manager:** Kirk Henning

## Volatile Organic Analysis (EPA Method 8260B)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	Quals
QC Batch ID: B[J1973										
Benzene	B[J1973-BS1	LCS	0.11429	0.12500	mg/kg	91.4		70 - 130		
Bromodichloromethane	B[J1973-BS1	LCS	0.13068	0.12500	mg/kg	105		70 - 130		
Chlorobenzene	B[J1973-BS1	LCS	0.14654	0.12500	mg/kg	117		70 - 130		
Chloroethane	B[J1973-BS1	LCS	0.14428	0.12500	mg/kg	115		70 - 130		
1,4-Dichlorobenzene	B[J1973-BS1	LCS	0.14886	0.12500	mg/kg	119		70 - 130		
1,1-Dichloroethane	B[J1973-BS1	LCS	0.11958	0.12500	mg/kg	95.7		70 - 130		
1,1-Dichloroethene	B[J1973-BS1	LCS	0.13061	0.12500	mg/kg	104		70 - 130		
Toluene	B[J1973-BS1	LCS	0.12354	0.12500	mg/kg	98.8		70 - 130		
Trichloroethene	B[J1973-BS1	LCS	0.13003	0.12500	mg/kg	104		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	B[J1973-BS1	LCS	0.050700	0.050000	mg/kg	101		70 - 121		
Toluene-d8 (Surrogate)	B[J1973-BS1	LCS	0.049740	0.050000	mg/kg	99.5		81 - 117		
4-Bromofluorobenzene (Surrogate)	B[J1973-BS1	LCS	0.054580	0.050000	mg/kg	109		74 - 121		

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**Project Manager:** Kirk Henning

## Volatile Organic Analysis (EPA Method 8260B)

### Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits		Lab Quals
									RPD	Percent Recovery	
QC Batch ID: B[J1973		Used client sample: N									
Benzene	MS	1728746-09	ND	0.11307	0.12500	mg/kg		90.5		70 - 130	
	MSD	1728746-09	ND	0.097600	0.12500	mg/kg	14.7	78.1	20	70 - 130	
Bromodichloromethane	MS	1728746-09	ND	0.13116	0.12500	mg/kg		105		70 - 130	
	MSD	1728746-09	ND	0.13864	0.12500	mg/kg	5.5	111	20	70 - 130	
Chlorobenzene	MS	1728746-09	ND	0.13093	0.12500	mg/kg		105		70 - 130	
	MSD	1728746-09	ND	0.14285	0.12500	mg/kg	8.7	114	20	70 - 130	
Chloroethane	MS	1728746-09	ND	0.14660	0.12500	mg/kg		117		70 - 130	
	MSD	1728746-09	ND	0.14907	0.12500	mg/kg	1.7	119	20	70 - 130	
1,4-Dichlorobenzene	MS	1728746-09	ND	0.13714	0.12500	mg/kg		110		70 - 130	
	MSD	1728746-09	ND	0.15481	0.12500	mg/kg	12.1	124	20	70 - 130	
1,1-Dichloroethane	MS	1728746-09	ND	0.11808	0.12500	mg/kg		94.5		70 - 130	
	MSD	1728746-09	ND	0.10658	0.12500	mg/kg	10.2	85.3	20	70 - 130	
1,1-Dichloroethene	MS	1728746-09	ND	0.12795	0.12500	mg/kg		102		70 - 130	
	MSD	1728746-09	ND	0.12176	0.12500	mg/kg	5.0	97.4	20	70 - 130	
Toluene	MS	1728746-09	ND	0.12669	0.12500	mg/kg		101		70 - 130	
	MSD	1728746-09	ND	0.13006	0.12500	mg/kg	2.6	104	20	70 - 130	
Trichloroethene	MS	1728746-09	ND	0.12515	0.12500	mg/kg		100		70 - 130	
	MSD	1728746-09	ND	0.13260	0.12500	mg/kg	5.8	106	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1728746-09	ND	0.049350	0.050000	mg/kg		98.7		70 - 121	
	MSD	1728746-09	ND	0.044560	0.050000	mg/kg	10.2	89.1		70 - 121	
Toluene-d8 (Surrogate)	MS	1728746-09	ND	0.049050	0.050000	mg/kg		98.1		81 - 117	
	MSD	1728746-09	ND	0.052070	0.050000	mg/kg	6.0	104		81 - 117	
4-Bromofluorobenzene (Surrogate)	MS	1728746-09	ND	0.050010	0.050000	mg/kg		100		74 - 121	
	MSD	1728746-09	ND	0.050310	0.050000	mg/kg	0.6	101		74 - 121	

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**Project Manager:** Kirk Henning

## Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J1535]</b>						
Acenaphthene	B[J1535-BLK1	ND	mg/kg	0.0030	0.0012	
Acenaphthylene	B[J1535-BLK1	ND	mg/kg	0.0030	0.0011	
Anthracene	B[J1535-BLK1	ND	mg/kg	0.0030	0.0012	
Benzo[a]anthracene	B[J1535-BLK1	ND	mg/kg	0.0030	0.0011	
Benzo[b]fluoranthene	B[J1535-BLK1	ND	mg/kg	0.0030	0.00095	
Benzo[k]fluoranthene	B[J1535-BLK1	ND	mg/kg	0.0030	0.0011	
Benzo[a]pyrene	B[J1535-BLK1	ND	mg/kg	0.0030	0.00095	
Benzo[g,h,i]perylene	B[J1535-BLK1	ND	mg/kg	0.0030	0.0011	
Chrysene	B[J1535-BLK1	ND	mg/kg	0.0030	0.00097	
Dibenzo[a,h]anthracene	B[J1535-BLK1	ND	mg/kg	0.0030	0.00099	
Fluoranthene	B[J1535-BLK1	ND	mg/kg	0.0030	0.0014	
Fluorene	B[J1535-BLK1	ND	mg/kg	0.0030	0.0011	
Indeno[1,2,3-cd]pyrene	B[J1535-BLK1	ND	mg/kg	0.0030	0.00092	
Naphthalene	B[J1535-BLK1	ND	mg/kg	0.0030	0.0011	
Phenanthrene	B[J1535-BLK1	ND	mg/kg	0.0030	0.0012	
Pyrene	B[J1535-BLK1	ND	mg/kg	0.0030	0.0015	
<b>Nitrobenzene-d5 (Surrogate)</b>	<b>B[J1535-BLK1</b>	<b>58.3</b>	<b>%</b>	<b>30 - 110 (LCL - UCL)</b>		
<b>2-Fluorobiphenyl (Surrogate)</b>	<b>B[J1535-BLK1</b>	<b>58.8</b>	<b>%</b>	<b>40 - 120 (LCL - UCL)</b>		
<b>p-Terphenyl-d14 (Surrogate)</b>	<b>B[J1535-BLK1</b>	<b>63.6</b>	<b>%</b>	<b>30 - 120 (LCL - UCL)</b>		

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**Project Manager:** Kirk Henning

## Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	Quals
QC Batch ID: B[J1535										
Acenaphthene	B[J1535-BS1	LCS	0.022953	0.033557	mg/kg	68.4		60 - 130		
Acenaphthylene	B[J1535-BS1	LCS	0.022953	0.033557	mg/kg	68.4		60 - 130		
Anthracene	B[J1535-BS1	LCS	0.025185	0.033557	mg/kg	75.0		60 - 130		
Benzo[a]anthracene	B[J1535-BS1	LCS	0.026779	0.033557	mg/kg	79.8		60 - 130		
Benzo[b]fluoranthene	B[J1535-BS1	LCS	0.029966	0.033557	mg/kg	89.3		50 - 130		
Benzo[k]fluoranthene	B[J1535-BS1	LCS	0.023909	0.033557	mg/kg	71.3		60 - 130		
Benzo[a]pyrene	B[J1535-BS1	LCS	0.022953	0.033557	mg/kg	68.4		60 - 130		
Benzo[g,h,i]perylene	B[J1535-BS1	LCS	0.024866	0.033557	mg/kg	74.1		50 - 130		
Chrysene	B[J1535-BS1	LCS	0.023909	0.033557	mg/kg	71.3		50 - 130		
Dibenzo[a,h]anthracene	B[J1535-BS1	LCS	0.026141	0.033557	mg/kg	77.9		50 - 130		
Fluoranthene	B[J1535-BS1	LCS	0.026141	0.033557	mg/kg	77.9		60 - 130		
Fluorene	B[J1535-BS1	LCS	0.026779	0.033557	mg/kg	79.8		50 - 130		
Indeno[1,2,3-cd]pyrene	B[J1535-BS1	LCS	0.025185	0.033557	mg/kg	75.0		50 - 130		
Naphthalene	B[J1535-BS1	LCS	0.022315	0.033557	mg/kg	66.5		50 - 130		
Phenanthrene	B[J1535-BS1	LCS	0.024866	0.033557	mg/kg	74.1		50 - 130		
Pyrene	B[J1535-BS1	LCS	0.024228	0.033557	mg/kg	72.2		50 - 130		
Nitrobenzene-d5 (Surrogate)	B[J1535-BS1	LCS	0.070453	0.13423	mg/kg	52.5		30 - 110		
2-Fluorobiphenyl (Surrogate)	B[J1535-BS1	LCS	0.067584	0.13423	mg/kg	50.3		40 - 120		
p-Terphenyl-d14 (Surrogate)	B[J1535-BS1	LCS	0.067265	0.13423	mg/kg	50.1		30 - 120		

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**Reported:** 01/17/2018 8:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source	Source	Result	Spike	Units	RPD	Percent	Percent		Lab
		Sample ID	Result					Recovery	RPD	Recovery	
QC Batch ID: B[J1535		Used client sample: N									
Acenaphthene	MS	1724840-19	ND	0.025654	0.033223	mg/kg		77.2		50 - 130	
	MSD	1724840-19	ND	0.021557	0.033841	mg/kg	17.4	63.7	30	50 - 130	
Acenaphthylene	MS	1724840-19	ND	0.025654	0.033223	mg/kg		77.2		50 - 130	
	MSD	1724840-19	ND	0.021888	0.033841	mg/kg	15.8	64.7	30	50 - 130	
Anthracene	MS	1724840-19	ND	0.027299	0.033223	mg/kg		82.2		50 - 130	
	MSD	1724840-19	ND	0.024210	0.033841	mg/kg	12.0	71.5	30	50 - 130	
Benzo[a]anthracene	MS	1724840-19	ND	0.028944	0.033223	mg/kg		87.1		50 - 130	
	MSD	1724840-19	ND	0.025205	0.033841	mg/kg	13.8	74.5	30	50 - 130	
Benzo[b]fluoranthene	MS	1724840-19	ND	0.032890	0.033223	mg/kg		99.0		40 - 130	
	MSD	1724840-19	ND	0.029848	0.033841	mg/kg	9.7	88.2	30	40 - 130	
Benzo[k]fluoranthene	MS	1724840-19	ND	0.026312	0.033223	mg/kg		79.2		40 - 130	
	MSD	1724840-19	ND	0.023878	0.033841	mg/kg	9.7	70.6	30	40 - 130	
Benzo[a]pyrene	MS	1724840-19	ND	0.023023	0.033223	mg/kg		69.3		40 - 130	
	MSD	1724840-19	ND	0.022552	0.033841	mg/kg	2.1	66.6	30	40 - 130	
Benzo[g,h,i]perylene	MS	1724840-19	ND	0.026312	0.033223	mg/kg		79.2		40 - 130	
	MSD	1724840-19	ND	0.023878	0.033841	mg/kg	9.7	70.6	30	40 - 130	
Chrysene	MS	1724840-19	ND	0.025983	0.033223	mg/kg		78.2		40 - 130	
	MSD	1724840-19	ND	0.022552	0.033841	mg/kg	14.1	66.6	30	40 - 130	
Dibenzo[a,h]anthracene	MS	1724840-19	ND	0.027299	0.033223	mg/kg		82.2		40 - 130	
	MSD	1724840-19	ND	0.025536	0.033841	mg/kg	6.7	75.5	30	40 - 130	
Fluoranthene	MS	1724840-19	ND	0.027957	0.033223	mg/kg		84.2		40 - 130	
	MSD	1724840-19	ND	0.023878	0.033841	mg/kg	15.7	70.6	30	40 - 130	
Fluorene	MS	1724840-19	ND	0.028944	0.033223	mg/kg		87.1		40 - 130	
	MSD	1724840-19	ND	0.025868	0.033841	mg/kg	11.2	76.4	30	40 - 130	
Indeno[1,2,3-cd]pyrene	MS	1724840-19	ND	0.026641	0.033223	mg/kg		80.2		30 - 130	
	MSD	1724840-19	ND	0.024210	0.033841	mg/kg	9.6	71.5	30	30 - 130	
Naphthalene	MS	1724840-19	ND	0.024010	0.033223	mg/kg		72.3		50 - 130	
	MSD	1724840-19	ND	0.021225	0.033841	mg/kg	12.3	62.7	30	50 - 130	
Phenanthrene	MS	1724840-19	ND	0.027299	0.033223	mg/kg		82.2		40 - 130	
	MSD	1724840-19	ND	0.023215	0.033841	mg/kg	16.2	68.6	30	40 - 130	
Pyrene	MS	1724840-19	ND	0.026970	0.033223	mg/kg		81.2		40 - 130	
	MSD	1724840-19	ND	0.022552	0.033841	mg/kg	17.8	66.6	30	40 - 130	
Nitrobenzene-d5 (Surrogate)	MS	1724840-19	ND	0.073017	0.13289	mg/kg		54.9		30 - 110	
	MSD	1724840-19	ND	0.060359	0.13536	mg/kg	19.0	44.6		30 - 110	
2-Fluorobiphenyl (Surrogate)	MS	1724840-19	ND	0.074990	0.13289	mg/kg		56.4		40 - 120	
	MSD	1724840-19	ND	0.063012	0.13536	mg/kg	17.4	46.6		40 - 120	

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**Reported:** 01/17/2018 8:51  
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**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source	Source	Result	Spike	Units	RPD	Percent	Percent	Lab	
		Sample ID	Result					Recovery	Recovery		Quals
QC Batch ID: B[J1535		Used client sample: N									
p-Terphenyl-d14 (Surrogate)	MS	1724840-19	ND	0.075977	0.13289	mg/kg		57.2		30 - 120	
	MSD	1724840-19	ND	0.063675	0.13536	mg/kg	17.6	47.0		30 - 120	



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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[I2745</b>						
TPH - Gasoline	B[I2745-BLK1	ND	mg/kg	20	5.0	
TPH - Diesel (FFP)	B[I2745-BLK1	ND	mg/kg	10	1.2	
TPH - Motor Oil	B[I2745-BLK1	ND	mg/kg	20	6.5	
<b>Tetracosane (Surrogate)</b>	<b>B[I2745-BLK1</b>	<b>108</b>	<b>%</b>	<b>20 - 145 (LCL - UCL)</b>		

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: B[I2745										
TPH - Diesel (FFP)	B[I2745-BS1	LCS	60.175	82.237	mg/kg	73.2		64 - 124		
Tetracosane (Surrogate)	B[I2745-BS1	LCS	2.7281	3.2908	mg/kg	82.9		20 - 145		



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## Total Petroleum Hydrocarbons

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[I2745		Used client sample: Y - Description: HA-33-5, 09/21/2017 11:20									
TPH - Diesel (FFP)	MS	1726917-06	ND	72.071	83.333	mg/kg		86.5		52 - 131	
	MSD	1726917-06	ND	52.526	84.746	mg/kg	31.4	62.0	30	52 - 131	Q02
Tetracosane (Surrogate)	MS	1726917-06	ND	3.2913	3.3347	mg/kg		98.7		20 - 145	
	MSD	1726917-06	ND	2.3600	3.3912	mg/kg	33.0	69.6		20 - 145	

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## Chemical Analysis

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J1166</b>						
Total Cyanide	B[J1166-BLK1	ND	mg/kg	0.50	0.15	
<b>QC Batch ID: B[J2498</b>						
pH	B[J2498-BLK1	ND	pH Units	0.05	0.05	
pH Measurement Temperature	B[J2498-BLK1	ND	C	0.1	0.1	

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Project Manager: Kirk Henning

## Chemical Analysis

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: B[J1166										
Total Cyanide	B[J1166-BS1	LCS	12.560	13.889	mg/kg	90.4		80 - 120		
QC Batch ID: B[J2498										
pH	B[J2498-BS1	LCS	1.9720	2.0000	pH Units	98.6		95 - 105		

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## Chemical Analysis

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J1166]		Used client sample: N									
Total Cyanide	DUP	1728472-05	845.46	806.59		mg/kg	4.7		20		
	MS	1728472-05	845.46	800.10	10.000	mg/kg		-454		80 - 120	Q03
	MSD	1728472-05	845.46	894.89	9.0909	mg/kg	11.2	544	20	80 - 120	Q03
QC Batch ID: B[J2498]		Used client sample: Y - Description: HA-32(1)-1, 09/21/2017 09:00									
pH	DUP	1726917-01	3.3480	3.3520		pH Units	0.1		20		

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**Reported:** 01/17/2018 8:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Total Concentrations (TTLC)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J1201</b>						
Total Hexavalent Chromium	B[J1201-BLK1	ND	mg/kg	1.0	0.30	
<b>QC Batch ID: B[J2427</b>						
Antimony	B[J2427-BLK1	ND	mg/kg	5.0	0.33	
Arsenic	B[J2427-BLK1	ND	mg/kg	1.0	0.40	
Barium	B[J2427-BLK1	ND	mg/kg	0.50	0.18	
Beryllium	B[J2427-BLK1	ND	mg/kg	0.50	0.047	
Cadmium	B[J2427-BLK1	ND	mg/kg	0.50	0.052	
Chromium	B[J2427-BLK1	ND	mg/kg	0.50	0.050	
Cobalt	B[J2427-BLK1	ND	mg/kg	2.5	0.098	
Copper	B[J2427-BLK1	ND	mg/kg	1.0	0.050	
Lead	B[J2427-BLK1	ND	mg/kg	2.5	0.28	
Molybdenum	B[J2427-BLK1	ND	mg/kg	2.5	0.050	
Nickel	B[J2427-BLK1	ND	mg/kg	0.50	0.15	
Selenium	B[J2427-BLK1	ND	mg/kg	1.0	0.98	
Silver	B[J2427-BLK1	ND	mg/kg	0.50	0.067	
Thallium	B[J2427-BLK1	ND	mg/kg	5.0	0.64	
Vanadium	B[J2427-BLK1	ND	mg/kg	0.50	0.11	
<b>Zinc</b>	<b>B[J2427-BLK1</b>	<b>0.36636</b>	<b>mg/kg</b>	<b>2.5</b>	<b>0.087</b>	<b>J</b>
<b>QC Batch ID: B[J2441</b>						
Mercury	B[J2441-BLK1	ND	mg/kg	0.16	0.019	

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## Total Concentrations (TTLC)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: B[J1201										
Total Hexavalent Chromium	B[J1201-BS1	LCS	41.856	40.000	mg/kg	105		80 - 120		
QC Batch ID: B[J2427										
Antimony	B[J2427-BS1	LCS	97.772	100.00	mg/kg	97.8		75 - 125		
Arsenic	B[J2427-BS1	LCS	9.1043	10.000	mg/kg	91.0		75 - 125		
Barium	B[J2427-BS1	LCS	98.725	100.00	mg/kg	98.7		75 - 125		
Beryllium	B[J2427-BS1	LCS	9.5504	10.000	mg/kg	95.5		75 - 125		
Cadmium	B[J2427-BS1	LCS	9.4828	10.000	mg/kg	94.8		75 - 125		
Chromium	B[J2427-BS1	LCS	101.22	100.00	mg/kg	101		75 - 125		
Cobalt	B[J2427-BS1	LCS	97.552	100.00	mg/kg	97.6		75 - 125		
Copper	B[J2427-BS1	LCS	95.936	100.00	mg/kg	95.9		75 - 125		
Lead	B[J2427-BS1	LCS	96.429	100.00	mg/kg	96.4		75 - 125		
Molybdenum	B[J2427-BS1	LCS	98.094	100.00	mg/kg	98.1		75 - 125		
Nickel	B[J2427-BS1	LCS	104.40	100.00	mg/kg	104		75 - 125		
Selenium	B[J2427-BS1	LCS	9.1234	10.000	mg/kg	91.2		75 - 125		
Silver	B[J2427-BS1	LCS	9.2680	10.000	mg/kg	92.7		75 - 125		
Thallium	B[J2427-BS1	LCS	106.29	100.00	mg/kg	106		75 - 125		
Vanadium	B[J2427-BS1	LCS	104.48	100.00	mg/kg	104		75 - 125		
Zinc	B[J2427-BS1	LCS	96.071	100.00	mg/kg	96.1		75 - 125		
QC Batch ID: B[J2441										
Mercury	B[J2441-BS1	LCS	0.76672	0.80000	mg/kg	95.8		80 - 120		

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**Reported:** 01/17/2018 8:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Total Concentrations (TTLC)

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J1201]		Used client sample: N									
Total Hexavalent Chromium	DUP	1728353-57	3.3800	3.4000		mg/kg	0.6		20		J
	MS	1728353-57	3.3800	42.220	40.000	mg/kg		97.1		75 - 125	
	MSD	1728353-57	3.3800	42.462	40.000	mg/kg	0.6	97.7	20	75 - 125	
QC Batch ID: B[J2427]		Used client sample: N									
Antimony	DUP	1729643-11	ND	ND		mg/kg			20		
	MS	1729643-11	ND	16.503	100.00	mg/kg		16.5		16 - 119	
	MSD	1729643-11	ND	20.137	100.00	mg/kg	19.8	20.1	20	16 - 119	
Arsenic	DUP	1729643-11	5.5014	5.8321		mg/kg	5.8		20		
	MS	1729643-11	5.5014	14.604	10.000	mg/kg		91.0		75 - 125	
	MSD	1729643-11	5.5014	15.314	10.000	mg/kg	4.7	98.1	20	75 - 125	
Barium	DUP	1729643-11	142.18	147.99		mg/kg	4.0		20		
	MS	1729643-11	142.18	225.00	100.00	mg/kg		82.8		75 - 125	
	MSD	1729643-11	142.18	227.57	100.00	mg/kg	1.1	85.4	20	75 - 125	
Beryllium	DUP	1729643-11	0.85335	0.79603		mg/kg	7.0		20		J
	MS	1729643-11	0.85335	9.8503	10.000	mg/kg		90.0		75 - 125	
	MSD	1729643-11	0.85335	10.324	10.000	mg/kg	4.7	94.7	20	75 - 125	
Cadmium	DUP	1729643-11	2.1026	2.0022		mg/kg	4.9		20		
	MS	1729643-11	2.1026	11.471	10.000	mg/kg		93.7		75 - 125	
	MSD	1729643-11	2.1026	11.401	10.000	mg/kg	0.6	93.0	20	75 - 125	
Chromium	DUP	1729643-11	61.147	56.824		mg/kg	7.3		20		
	MS	1729643-11	61.147	149.77	100.00	mg/kg		88.6		75 - 125	
	MSD	1729643-11	61.147	156.46	100.00	mg/kg	4.4	95.3	20	75 - 125	
Cobalt	DUP	1729643-11	9.8664	9.4001		mg/kg	4.8		20		
	MS	1729643-11	9.8664	105.05	100.00	mg/kg		95.2		75 - 125	
	MSD	1729643-11	9.8664	105.32	100.00	mg/kg	0.3	95.5	20	75 - 125	
Copper	DUP	1729643-11	35.912	34.026		mg/kg	5.4		20		
	MS	1729643-11	35.912	125.91	100.00	mg/kg		90.0		75 - 125	
	MSD	1729643-11	35.912	132.82	100.00	mg/kg	5.3	96.9	20	75 - 125	
Lead	DUP	1729643-11	9.2834	8.6225		mg/kg	7.4		20		
	MS	1729643-11	9.2834	103.83	100.00	mg/kg		94.5		75 - 125	
	MSD	1729643-11	9.2834	104.40	100.00	mg/kg	0.6	95.1	20	75 - 125	
Molybdenum	DUP	1729643-11	2.6968	2.5436		mg/kg	5.8		20		J
	MS	1729643-11	2.6968	85.194	100.00	mg/kg		82.5		75 - 125	
	MSD	1729643-11	2.6968	87.530	100.00	mg/kg	2.7	84.8	20	75 - 125	
Nickel	DUP	1729643-11	57.983	55.490		mg/kg	4.4		20		
	MS	1729643-11	57.983	144.87	100.00	mg/kg		86.9		75 - 125	
	MSD	1729643-11	57.983	150.57	100.00	mg/kg	3.9	92.6	20	75 - 125	

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**Project Manager:** Kirk Henning

## Total Concentrations (TTLC)

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J2427]		Used client sample: N									
Selenium	DUP	1729643-11	3.7462	3.8168		mg/kg	1.9		20		
	MS	1729643-11	3.7462	11.380	10.000	mg/kg		76.3		75 - 125	
	MSD	1729643-11	3.7462	11.485	10.000	mg/kg	0.9	77.4	20	75 - 125	
Silver	DUP	1729643-11	ND	ND		mg/kg			20		
	MS	1729643-11	ND	9.5102	10.000	mg/kg		95.1		75 - 125	
	MSD	1729643-11	ND	9.5773	10.000	mg/kg	0.7	95.8	20	75 - 125	
Thallium	DUP	1729643-11	ND	ND		mg/kg			20		
	MS	1729643-11	ND	96.771	100.00	mg/kg		96.8		75 - 125	
	MSD	1729643-11	ND	95.901	100.00	mg/kg	0.9	95.9	20	75 - 125	
Vanadium	DUP	1729643-11	105.39	96.617		mg/kg	8.7		20		
	MS	1729643-11	105.39	188.30	100.00	mg/kg		82.9		75 - 125	
	MSD	1729643-11	105.39	198.61	100.00	mg/kg	5.3	93.2	20	75 - 125	
Zinc	DUP	1729643-11	105.68	102.26		mg/kg	3.3		20		
	MS	1729643-11	105.68	182.59	100.00	mg/kg		76.9		75 - 125	
	MSD	1729643-11	105.68	191.56	100.00	mg/kg	4.8	85.9	20	75 - 125	
QC Batch ID: B[J2441]		Used client sample: N									
Mercury	DUP	1729813-01	ND	ND		mg/kg			20		
	MS	1729813-01	ND	0.80516	0.78125	mg/kg		103		80 - 120	
	MSD	1729813-01	ND	0.85062	0.78125	mg/kg	5.5	109	20	80 - 120	

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**EMSL Analytical, Inc.**

464 McCormick Street San Leandro, CA 94577

Tel/Fax: (510) 895-3675 / (510) 895-3680

<http://www.EMSL.com> / [sanleandro@emsl.com](mailto:sanleandro@emsl.com)

EMSL Order: 091719208

Customer ID: BCLA50

Customer PO: 1726917

Project ID:

Attention: Molly Meyers

BC Laboratories, Inc.

4100 Atlas Court

Bakersfield, CA 93308

Phone: (661) 327-4911

Fax: (661) 327-1918

Received Date: 10/04/2017 10:15 AM

Analysis Date: 10/05/2017

Collected Date: 09/21/2017

Project: 1726917

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020  
Method(s) using Polarized Light Microscopy**

Sample	Description	Appearance	Non-Asbestos		Asbestos % Type
			% Fibrous	% Non-Fibrous	
1726917-01		Brown Non-Fibrous Homogeneous	2% Wollastonite	50% Quartz 48% Non-fibrous (Other)	None Detected
091719208-0001 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1726917-02		Brown/Black Non-Fibrous Homogeneous		50% Quartz 10% Matrix 40% Non-fibrous (Other)	<1% Chrysotile
091719208-0002 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1726917-04		Tan Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
091719208-0003 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1726917-05		Tan Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
091719208-0004 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					

Analyst(s)

Cecilia Yu (4)

Matthew Batongbacal  
or Other Approved Signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The limit of detection as stated in the method is 1%. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The test results contained within this report meet the requirements of NELAP unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from: 10/05/2017 14:19:29

ASB\_PLM\_0008\_0001 - 1.78 Printed: 10/5/2017 2:19 PM

Page 1 of 1

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October 30, 2017

**FAL Project: 10991**

Ms. Molly Meyers  
BC Laboratories  
4100 Atlas Court  
Bakersfield, CA 93308

Dear Ms. Meyers,

The following results are associated with Frontier Analytical Laboratory project **10991**. This corresponds to your subcontract order number **1726917**. One solid sample was received on 10/12/2017. This sample was extracted and analyzed by EPA Method 8290 for tetra through octa chlorinated dibenzo dioxins and furans. The Toxic Equivalency (TEQ) for your sample has been calculated using the 2005 World Health Organization's (WHO's) toxic equivalency factors (TEFs). BC Laboratories requested a turnaround time of fifteen business days for project **10991**.

The following report consists of an Analytical Data section and a Sample Receipt section. The Analytical Data section contains our sample tracking log and the analytical results. The Sample Receipt section contains your chain of custody, our sample login form and a sample photo. The attached results are specifically for the sample referenced in this report only. These results meet all National Environmental Laboratory Accreditation Program (NELAP) requirements and shall not be reproduced except in full. Frontier Analytical Laboratory's State of Oregon NELAP certificate number is **4041** and our State of California ELAP certificate number is **2934**. This report has been emailed to you as a portable document format (PDF) file. A hardcopy will not be sent to you unless specifically requested.

If you have any questions regarding project **10991**, please contact me at (916) 934-0900. Thank you for choosing Frontier Analytical Laboratory for your analytical testing needs.

Sincerely,

*Daniel P. Vickers*

Daniel P. Vickers  
Vice President

**FRONTIER ANALYTICAL LABORATORY**  
5172 Hillside Circle \* El Dorado Hills, CA 95762  
Tel (916) 934-0900 \* Fax (916) 934-0999  
[www.frontieranalytical.com](http://www.frontieranalytical.com)

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## Frontier Analytical Laboratory

### Sample Tracking Log

FAL Project ID: **10991**

Received on: **10/12/2017**

Project Due: **11/03/2017**

Storage: **R3**

FAL Sample ID	Dup	Client Project ID	Client Sample ID	Requested Method	Matrix	Sampling Date	Sampling Time	Hold Time Due Date
10991-001-SA	0	1726917	1726917-01	EPA 8290 D/F	Solid	09/21/2017	09:00 am	10/21/2017

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EPA Method 8290  
PCDD/F



FAL ID: 10991-001-MB  
Client ID: Method Blank  
Matrix: Solid  
Batch No: X4276

Date Extracted: 10-17-2017  
Date Received: NA  
Amount: 5.00 g

ICal: pcdffal4-9-18-17  
GC Column: DB5MS  
Units: pg/g

Acquired: 10-25-2017  
2005 WHO TEQ: 0.0  
Basis: Dry Weight

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.118		-	0.0273				
1,2,3,7,8-PeCDD	ND	0.258		-	0.0570				
1,2,3,4,7,8-HxCDD	ND	0.342		-	0.0793				
1,2,3,6,7,8-HxCDD	ND	0.445		-	0.0940	Total TCDD	ND	0.118	
1,2,3,7,8,9-HxCDD	ND	0.364		-	0.0823	Total PeCDD	ND	0.258	
1,2,3,4,6,7,8-HpCDD	ND	0.310		-	0.0842	Total HxCDD	ND	0.445	
OCDD	ND	1.41		-	0.172	Total HpCDD	ND	0.310	
2,3,7,8-TCDF	ND	0.113		-	0.0269				
1,2,3,7,8-PeCDF	ND	0.164		-	0.0449				
2,3,4,7,8-PeCDF	ND	0.150		-	0.0468				
1,2,3,4,7,8-HxCDF	ND	0.206		-	0.0437				
1,2,3,6,7,8-HxCDF	ND	0.219		-	0.0417				
2,3,4,6,7,8-HxCDF	ND	0.230		-	0.0574				
1,2,3,7,8,9-HxCDF	ND	0.270		-	0.0657	Total TCDF	ND	0.113	
1,2,3,4,6,7,8-HpCDF	ND	0.364		-	0.0747	Total PeCDF	ND	0.164	
1,2,3,4,7,8,9-HpCDF	ND	0.381		-	0.0883	Total HxCDF	ND	0.270	
OCDF	ND	0.347		-	0.170	Total HpCDF	ND	0.381	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	84.7	40.0 - 135	
13C-1,2,3,7,8-PeCDD	99.9	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	84.6	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	80.3	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	96.4	40.0 - 135	
13C-OCDD	92.9	40.0 - 135	
13C-2,3,7,8-TCDF	86.1	40.0 - 135	
13C-1,2,3,7,8-PeCDF	97.9	40.0 - 135	
13C-2,3,4,7,8-PeCDF	102	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	86.3	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	80.0	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	86.6	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	91.0	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	92.7	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	101	40.0 - 135	
13C-OCDF	95.4	40.0 - 135	

Cleanup Surrogate

37Cl-2,3,7,8-TCDD 86.4 50.0 - 150

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- \* Result taken from dilution or reinjection

Analyst: 

Date: 10/27/2017

Reviewed By: 

Date: 10/27/2017

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5172 Hillside Circle \* El Dorado Hills, CA 95762 \* Tel (916) 934-0900 \* Fax (916) 934-0999 \* www.frontieranalytical.com

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EPA Method 8290  
PCDD/F



FAL ID: 10991-001-OPR  
Client ID: OPR  
Matrix: Solid  
Batch No: X4276


Date Extracted: 10-17-2017  
Date Received: NA  
Amount: 5.00 g


ICal: pcdcfal4-9-18-17  
GC Column: DB5MS  
Units: ng/ml

Acquired: 10-25-2017  
2005 WHO TEQ: NA

Compound	Conc	QC Limits	Qual
2,3,7,8-TCDD	12.2	7.00 - 13.0	
1,2,3,7,8-PeCDD	61.1	35.0 - 65.0	
1,2,3,4,7,8-HxCDD	62.7	35.0 - 65.0	
1,2,3,6,7,8-HxCDD	61.1	35.0 - 65.0	
1,2,3,7,8,9-HxCDD	60.2	35.0 - 65.0	
1,2,3,4,6,7,8-HpCDD	60.6	35.0 - 65.0	
OCDD	118	70.0 - 130	
2,3,7,8-TCDF	11.2	7.00 - 13.0	
1,2,3,7,8-PeCDF	60.5	35.0 - 65.0	
2,3,4,7,8-PeCDF	61.2	35.0 - 65.0	
1,2,3,4,7,8-HxCDF	60.5	35.0 - 65.0	
1,2,3,6,7,8-HxCDF	61.7	35.0 - 65.0	
2,3,4,6,7,8-HxCDF	61.4	35.0 - 65.0	
1,2,3,7,8,9-HxCDF	60.8	35.0 - 65.0	
1,2,3,4,6,7,8-HpCDF	61.9	35.0 - 65.0	
1,2,3,4,7,8,9-HpCDF	61.5	35.0 - 65.0	
OCDF	121	70.0 - 130	
Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	90.7	40.0 - 135	
13C-1,2,3,7,8-PeCDD	112	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	89.7	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	83.3	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	98.5	40.0 - 135	
13C-OCDD	103	40.0 - 135	
13C-2,3,7,8-TCDF	89.7	40.0 - 135	
13C-1,2,3,7,8-PeCDF	104	40.0 - 135	
13C-2,3,4,7,8-PeCDF	111	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	92.3	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	84.5	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	90.0	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	96.4	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	96.8	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	106	40.0 - 135	
13C-OCDF	102	40.0 - 135	
Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	91.3	50.0 - 150	

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- \* Result taken from dilution or reinjection

Analyst:   
Date: 10/27/2017

Reviewed By:   
Date: 10/27/2017

000004 of 000008

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EPA Method 8290  
PCDD/F



FAL ID: 10991-001-SA  
Client ID: 1726917-01  
Matrix: Solid  
Batch No: X4276

Date Extracted: 10-17-2017  
Date Received: 10-12-2017  
Amount: 5.04 g  
% Solids: 89.14

ICal: PCDDFAL4-9-18-17  
GC Column: DB5MS  
Units: pg/g

Acquired: 10-26-2017  
2005 WHO TEQ: 179  
Basis: Dry Weight

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	10.3	-		10.3	0.0273				
1,2,3,7,8-PeCDD	23.3	-		23.3	0.0570				
1,2,3,4,7,8-HxCDD	17.7	-		1.77	0.0793				
1,2,3,6,7,8-HxCDD	140	-		14.0	0.0940	Total TCDD	57.4	-	
1,2,3,7,8,9-HxCDD	59.1	-		5.91	0.0823	Total PeCDD	128	-	M
1,2,3,4,6,7,8-HpCDD	7230	-		72.3	0.0842	Total HxCDD	696	-	
OCDD	104000	-		31.2	0.172	Total HpCDD	14000	-	
2,3,7,8-TCDF	3.07	-	F	0.307	0.0269				
1,2,3,7,8-PeCDF	2.11	-	J	0.0633	0.0449				
2,3,4,7,8-PeCDF	3.33	-	J	0.999	0.0468				
1,2,3,4,7,8-HxCDF	21.5	-		2.15	0.0437				
1,2,3,6,7,8-HxCDF	13.9	-		1.39	0.0417				
2,3,4,6,7,8-HxCDF	25.8	-		2.58	0.0574				
1,2,3,7,8,9-HxCDF	4.44	-	J	0.444	0.0657	Total TCDF	36.4	-	D,M
1,2,3,4,6,7,8-HpCDF	956	-		9.56	0.0747	Total PeCDF	117	-	D,M
1,2,3,4,7,8,9-HpCDF	57.6	-		0.576	0.0883	Total HxCDF	841	-	D,M
OCDF	7190	-		2.16	0.170	Total HpCDF	4910	-	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	90.5	40.0 - 135	
13C-1,2,3,7,8-PeCDD	112	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	94.9	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	81.7	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	101	40.0 - 135	
13C-OCDD	111	40.0 - 135	
13C-2,3,7,8-TCDF	83.1	40.0 - 135	
13C-1,2,3,7,8-PeCDF	102	40.0 - 135	
13C-2,3,4,7,8-PeCDF	105	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	84.9	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	72.8	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	81.4	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	89.3	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	90.6	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	107	40.0 - 135	
13C-OCDF	111	40.0 - 135	


Cleanup Surrogate

37Cl-2,3,7,8-TCDD 92.2 50.0 - 150

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- \* Result taken from dilution or reinjection

Analyst: 

Date: 10/27/2017

Reviewed By: 

Date: 10/27/2017

000005 of 000008

5172 Hillside Circle \* El Dorado Hills, CA 95762 \* Tel (916) 934-0900 \* Fax (916) 934-0999 \* www.frontieranalytical.com

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SUBCONTRACT ORDER  
BC Laboratories  
1726917

10991  
Joc

SENDING LABORATORY:	RECEIVING LABORATORY:
BC Laboratories	Frontier Analytical Laboratory \$FRNTL-EINV
4100 Atlas Ct	5172 Hillside Circle
Bakersfield, CA 93308	El Dorado Hills, CA 95762
Phone: 661-327-4911	Phone : (916) 934-0900
Fax: 661-327-1918	Fax: (916) 934-0999
Project Manager: Molly Meyers	


Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: 1726917-01	Solids	Sampled:09/21/17 09:00		analyses added per Kirk Henning. mm 10/10/17
og8290s Full Scan FRNTL	10/24/17 17:00	10/21/17 09:00		
Containers Supplied:				



Released By

10-10-17

Date



Received By

10-12-17 1110

Date

Released By

Date

Received By

Date

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Page 1 of 1



## Frontier Analytical Laboratory

### Sample Login Form

FAL Project ID: **10991**

Client:	BC Laboratories, Inc
Client Project ID:	1726917
Date Received:	10/12/2017
Time Received:	11:10 am
Received By:	KZ
Logged In By:	KZ
# of Samples Received:	1
Duplicates:	0
Storage Location:	R3

Method of Delivery:	California Overnight
Tracking Number:	C11235900270709
Shipping Container Received Intact	Yes
Custody seals(s) present?	No
Custody seals(s) intact?	No
Sample Arrival Temperature (C)	0
Cooling Method	Ice
Chain Of Custody Present?	Yes
Return Shipping Container To Client	Yes
Test aqueous sample for residual Chlorine	No
Sodium Thiosulfate Added	No
Adequate Sample Volume	Yes
Appropriate Sample Container	No
pH Range of Aqueous Sample	N/A
Anomalies or additional comments:	
Please note that the sample was received in a clear glass jar. NELAP requires samples be received in amber glass bottles or jars. Although this anomaly will not affect your results, we are required by NELAP to make a note of it. We will proceed with analysis unless directed otherwise by you.	

000007 of 000008

5172 Hillside Circle \* El Dorado Hills, CA 95762 \* Tel (916) 934-0900 \* Fax (916) 934-0999 \* www.frontieranalytical.com

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10991 Doc

**SUBCONTRACT ORDER**  
BC Laboratories  
1726917

**RECEIVING LABORATORY:**  
Frontier Analytical Laboratory SFRNTL-EINV  
5172 Hillside Circle  
El Dorado Hills, CA 95762  
Phone: (916) 934-0900  
Fax: (916) 934-0999

**SENDING LABORATORY:**  
BC Laboratories  
4100 Atlas Ct  
Bakersfield, CA 93308  
Phone: (661) 327-4911  
Fax: (661) 327-1918  
Project Manager: Molly Meyers

Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: 1726917-01 og8290s Full Scan FRNTL	10/24/17 17:00	10/21/17 09:00		analyses added per Kirk Henning, mm 10/10/17
Containers Supplied:				

Frontier Analytical Laboratory  
10991-001-SA  
Client ID: 1726917-01  
Storage: R3 (01 of 01)

1726917-01 C  
HA-32(1)-1  
X12: Clear Glass 250 ml (8 oz)

Released By: [Signature] Date: 10-16-17  
Received By: Karyn Zee Date: 10-12-17  
Page 1 of 1

2017/10/12

000008 of 000008

5172 Hillside Circle \* El Dorado Hills, CA 95762 \* Tel (916) 934-0900 \* Fax (916) 934-0999 \* www.frontieranalytical.com

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/17/2018 8:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit
A01	Detection and quantitation limits are raised due to sample dilution.
A17	Surrogate not reportable due to sample dilution.
A26	Sample received past holding time.
A52	Chromatogram not typical of diesel.
A57	Chromatogram not typical of motor oil.
L07	The Laboratory Control Sample (LCS) recovery is not within laboratory established control limits.
pH1:1	pH result reported on a 1:1 dilution of sample
Q02	Matrix spike precision is not within the control limits.
Q03	Matrix spike recovery(s) is(are) not within the control limits.
S05	The sample holding time was exceeded.



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



Date of Report: 01/04/2018

Kirk Henning

Stantec - SLO

3437 Empresa Drive, Suite A

Suite A

San Luis Obispo, CA 93401

Client Project: 185850429

BCL Project: Former Northern Landfill

BCL Work Order: 1726918

Invoice ID: B283147

Enclosed are the results of analyses for samples received by the laboratory on 9/20/2017. If you have any questions concerning this report, please feel free to contact me.

Revised Report: This report supercedes Report ID 1000663169

Sincerely,

Contact Person: Molly Meyers  
Client Service Rep

Stuart Buttram  
Technical Director

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

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Chain of Custody Form



BC Laboratories, Inc.

17-26918

Client: <u>Stantec</u>		Project #: <u>17-26918</u>		Analysis Requested		Comments: <u>will call for analysis</u>		Page <u>1</u> of <u>1</u>	
Attn: <u>Mr. [illegible]</u>		Project Name: <u>PL 500R</u>							
Street Address: <u>2133 [illegible] St.</u>		City, State, Zip: <u>San Jose, CA 95128</u>		Sampler(s): <u>1</u>					
Phone: <u>408.255.2000</u>		Fax: <u>408.255.2000</u>							
Email Address: <u>[illegible]</u>									
Work Order #:									
Sample #	Description	Date Sampled	Time Sampled	Analysis Requested		Comments		Notes	
-1	HA-37-1	9/17/17	11:25						
-2	HA-37-2	9/17/17	11:30						
-3	HA-37-4	9/17/17	11:35						
-4	HA-37-6	9/17/17	11:45						
-5	HA-37-9	9/17/17	11:50						
-6	HA-37-9	9/17/17	12:00						
-7	HA-37-9	9/17/17	12:10						
-8	HA-37-9	9/17/17	12:20						
-9	HA-37-9	9/17/17	12:30						
-10	HA-37-9	9/17/17	12:40						
-11	HA-37-9	9/17/17	12:50						
-12	HA-37-9	9/17/17	13:00						

Billing		HDP Required?		Global ID		System #	
Client: <u>Ke Pub</u>	Same as above	Yes <input type="checkbox"/> No <input type="checkbox"/>	Send Copy to State of CA? (EDT) <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/>	1. Relinquished By	2. Relinquished By	1. Received By	2. Received By
Address: <u>Ke Pub</u>							
City: <u>San Jose</u>							
State: <u>CA</u>							
Zip: <u>95128</u>							
Attn: <u>[illegible]</u>							
PO#: <u>[illegible]</u>							

BC Laboratories, Inc. - 4100 Atlas Ct. - Bakersfield, CA 93308 - 661.327.4911 - Fax: 661.327.1918 - www.bclabs.com



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1726918 Page 3 of 5



**Laboratories, Inc.**

**Chain of Custody Form**

Report To: Client: <u>Slater</u> Attn: <u>Mr. H. H. H.</u> Street Address: <u>20137 Englewood St. A</u> City, State, Zip: <u>San Diego, CA 92111</u> Phone: <u>619-520-2087</u> Fax: <u>619-520-2088</u> Email Address: <u>h.h.h@slater.com</u> Work Order #: <u>17-26918</u>		Project #: <u>105850429</u> Project Name: <u>AL 500R</u> Sampler(s): <u>Force Motion Lead 11</u> Mol. - Breaston					
Sample #	Description	Date Sampled	Time Sampled	Analysis Requested		Comments:	Page <u>3</u> of <u>5</u>
				Global ID (Needed for EDF)	System # (Needed for EDF)		
-1	HA-37-1	9/20/17	1135	1. Relinquished By <u>W. H. H.</u>	1. Received By <u>W. H. H.</u>	Will call for analysis	Are there any tests with holding times less than or equal to 48 hours? <input type="checkbox"/> Yes <input type="checkbox"/> No * Standard Turnaround = 10 work days
-2	HA-37-3	9/20/17	1135	2. Relinquished By <u>W. H. H.</u>	2. Received By <u>W. H. H.</u>		
-3	HA-37-4	9/20/17	1135	3. Relinquished By <u>W. H. H.</u>	3. Received By <u>W. H. H.</u>		
-4	HA-37-6	9/20/17	1135				
-5	HA-37-9	9/20/17	1135				
-6	HA-37-9	9/20/17	1135				
-7	HA-37-9	9/20/17	1135				
-8	HA-37-9	9/20/17	1135				
-9	HA-37-9	9/20/17	1135				
-10	HA-37-9	9/20/17	1135				
-11	HA-37-9	9/20/17	1135				
-12	HA-37-9	9/20/17	1135				

BC Laboratories, Inc. - 4100 Atlas Ct. - Bakersfield, CA 93308 - 661.327.4911 - Fax: 661.327.1918 - www.bclabs.com

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1726918 Page 4 of 5

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page 1 of 2																																																																																																																																																																																																																																																																																																																																																																																																																							
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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1726918 Page 5 of 5

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page 2 of 2							
Submission #: 17-26918											
<b>SHIPPING INFORMATION</b> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/> BC Lab Field Service <input checked="" type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		<b>SHIPPING CONTAINER</b> Ice Chest <input checked="" type="checkbox"/> None <input type="checkbox"/> Box <input type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		<b>FREE LIQUID</b> YES <input type="checkbox"/> NO <input type="checkbox"/> W / S							
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments:											
Custody Seals: Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> Intact? Yes <input type="checkbox"/> No <input type="checkbox"/> Intact? Yes <input type="checkbox"/> No <input type="checkbox"/>		None <input checked="" type="checkbox"/> Comments:									
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Description(s) match COC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>							
COC Received <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Emissivity: 0.96 Container: 1.0/1.55 Thermometer ID: 205		Date/Time: 9/20/17 205							
Temperature: (A) 1.4 °C / (C) 1.1 °C				Analyst Init: KMK							
<b>SAMPLE CONTAINERS</b>		<b>SAMPLE NUMBERS</b>									
		1	2	3	4	5	6	7	8	9	10
QT PE UNPRES											
4oz / 8oz / 16oz PE UNPRES											
2oz Cr <sup>6+</sup>											
QT INORGANIC CHEMICAL METALS											
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz											
PT CYANIDE											
PT NITROGEN FORMS											
PT TOTAL SULFIDE											
2oz. NITRATE / NITRITE											
PT TOTAL ORGANIC CARBON											
PT CHEMICAL OXYGEN DEMAND											
PIA PHENOLICS											
40ml VOA VIAL TRAVEL BLANK											
40ml VOA VIAL											
QT EPA 1664											
PT ODOR											
RADIOLOGICAL											
BACTERIOLOGICAL											
40 ml VOA VIAL - 504											
QT EPA 508/608/8080											
QT EPA 515.1/8150											
QT EPA 525											
QT EPA 525 TRAVEL BLANK											
40ml EPA 567											
40ml EPA 531.1											
8oz EPA 548											
QT EPA 549											
QT EPA 8015M											
QT EPA 8270											
3oz / 16oz / 32oz AMBER											
3oz / 16oz / 32oz BAR		A	A								
SOIL SLEW											
CB VIAL											
LASTIC BAG											
EDLAR BAG											
ERROUS IRON											
NCORE											
MART KIT											
UMMA CANISTER											
Comments:											
Sample Numbering Completed By: JML		Date/Time: 9-22-17 1349									
= Actual / C = Corrected		Rev 21 05/23/2016 (S:\WPDoc\Word\PerfectLAB\DOC\FORMS\ISAWREC.mv 20)									

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/04/2018 14:11  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
1726918-01	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/20/2017 20:25
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/20/2017 11:25
1726918-01	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-37-1	<b>Lab Matrix:</b> Solids
1726918-01	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-37-1
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:
1726918-02	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/20/2017 20:25
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/20/2017 11:30
1726918-02	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-37-3	<b>Lab Matrix:</b> Solids
1726918-02	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-37-3
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:
1726918-03	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/20/2017 20:25
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/20/2017 11:35
1726918-03	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-37-4	<b>Lab Matrix:</b> Solids
1726918-03	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-37-4
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:

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San Luis Obispo, CA 93401

**Reported:** 01/04/2018 14:11  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
1726918-04	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/20/2017 20:25
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/20/2017 11:45
1726918-04	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-37-6	<b>Lab Matrix:</b> Solids
1726918-04	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
1726918-04			Global ID:
			Location ID (FieldPoint): HA-37-6
1726918-04			Matrix: SO
			Sample QC Type (SACode): CS
1726918-04			Cooler ID:
1726918-05	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/20/2017 20:25
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/20/2017 11:50
1726918-05	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-37-8	<b>Lab Matrix:</b> Solids
1726918-05	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
1726918-05			Global ID:
			Location ID (FieldPoint): HA-37-8
1726918-05			Matrix: SO
			Sample QC Type (SACode): CS
1726918-05			Cooler ID:
1726918-06	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/20/2017 20:25
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/20/2017 11:55
1726918-06	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-37-9	<b>Lab Matrix:</b> Solids
1726918-06	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
1726918-06			Global ID:
			Location ID (FieldPoint): HA-37-9
1726918-06			Matrix: SO
			Sample QC Type (SACode): CS
1726918-06			Cooler ID:

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**Reported:** 01/04/2018 14:11  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
1726918-07	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/20/2017 20:25
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/20/2017 09:30
1726918-07	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-34-2	<b>Lab Matrix:</b> Solids
1726918-07	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-34-2
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:
1726918-08	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/20/2017 20:25
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/20/2017 09:37
1726918-08	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-34-4	<b>Lab Matrix:</b> Solids
1726918-08	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-34-4
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:
1726918-09	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/20/2017 20:25
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/20/2017 09:47
1726918-09	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-34-6	<b>Lab Matrix:</b> Solids
1726918-09	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-34-6
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:

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**Reported:** 01/04/2018 14:11  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1726918-10	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1726918-10	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-34-8
1726918-10	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/20/2017 20:25
1726918-10	<b>Sampling Date:</b>	09/20/2017 09:53
	<b>Sample Depth:</b>	---
1726918-10	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1726918-10	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1726918-10	<b>Location ID (FieldPoint):</b>	HA-34-8
	<b>Matrix:</b>	SO
1726918-10	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1726918-11	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1726918-11	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-38-1
1726918-11	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/20/2017 20:25
1726918-11	<b>Sampling Date:</b>	09/20/2017 14:20
	<b>Sample Depth:</b>	---
1726918-11	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1726918-11	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1726918-11	<b>Location ID (FieldPoint):</b>	HA-38-1
	<b>Matrix:</b>	SO
1726918-11	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1726918-12	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1726918-12	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-38-3
1726918-12	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/20/2017 20:25
1726918-12	<b>Sampling Date:</b>	09/20/2017 14:25
	<b>Sample Depth:</b>	---
1726918-12	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1726918-12	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1726918-12	<b>Location ID (FieldPoint):</b>	HA-38-3
	<b>Matrix:</b>	SO
1726918-12	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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San Luis Obispo, CA 93401

**Reported:** 01/04/2018 14:11  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1726918-01	<b>Client Sample Name:</b>	Former Northern Landfill, HA-37-1, 9/20/2017 11:25:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	600	150	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	300	36	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>4100</b>	<b>mg/kg</b>	<b>600</b>	<b>200</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	98.1	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/28/17 20:25	10/04/17 11:12	AS1	GC-13	30	B[12745

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Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/04/2018 14:11  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1726918-02	<b>Client Sample Name:</b>	Former Northern Landfill, HA-37-3, 9/20/2017 11:30:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	400	100	EPA-8015B/FFP	ND	A01	1
TPH - Diesel (FFP)	ND	mg/kg	200	24	EPA-8015B/FFP	ND	A01	1
<b>TPH - Motor Oil</b>	<b>1900</b>	<b>mg/kg</b>	<b>400</b>	<b>130</b>	<b>EPA-8015B/FFP</b>	ND	<b>A01</b>	1
Tetracosane (Surrogate)	42.6	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		A01	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/28/17 20:25	10/03/17 03:38	AS1	GC-13	20.270	B[12745

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Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/04/2018 14:11  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1726918-03	<b>Client Sample Name:</b>	Former Northern Landfill, HA-37-4, 9/20/2017 11:35:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	600	150	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	300	36	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>5800</b>	<b>mg/kg</b>	<b>600</b>	<b>200</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	95.5	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/28/17 20:25	10/03/17 00:58	AS1	GC-13	30	B[12745

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Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/04/2018 14:11  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1726918-04	<b>Client Sample Name:</b>	Former Northern Landfill, HA-37-6, 9/20/2017 11:45:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	600	150	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	300	36	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>5300</b>	<b>mg/kg</b>	<b>600</b>	<b>200</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	99.3	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/28/17 20:25	10/03/17 01:43	AS1	GC-13	30	B[12745

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**Reported:** 01/04/2018 14:11  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Organochlorine Pesticides and PCB's (EPA Method 8080)

BCL Sample ID: 1726918-05		Client Sample Name: Former Northern Landfill, HA-37-8, 9/20/2017 11:50:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Aldrin	ND	mg/kg	0.062	0.0042	EPA-8080	ND	A10	1
alpha-BHC	ND	mg/kg	0.062	0.016	EPA-8080	ND	A10	1
beta-BHC	ND	mg/kg	0.062	0.019	EPA-8080	ND	A10	1
delta-BHC	ND	mg/kg	0.062	0.0059	EPA-8080	ND	A10	1
gamma-BHC (Lindane)	ND	mg/kg	0.062	0.010	EPA-8080	ND	A10	1
Chlordane (Technical)	ND	mg/kg	6.2	0.21	EPA-8080	ND	A10	1
4,4'-DDD	ND	mg/kg	0.062	0.026	EPA-8080	ND	A10	1
4,4'-DDE	ND	mg/kg	0.062	0.0025	EPA-8080	ND	A10	1
4,4'-DDT	ND	mg/kg	0.062	0.012	EPA-8080	ND	A10	1
Dieldrin	ND	mg/kg	0.062	0.0099	EPA-8080	ND	A10	1
Endosulfan I	ND	mg/kg	0.062	0.0028	EPA-8080	ND	A10	1
Endosulfan II	ND	mg/kg	0.062	0.018	EPA-8080	ND	A10	1
Endosulfan sulfate	ND	mg/kg	0.062	0.042	EPA-8080	ND	A10	1
Endrin	ND	mg/kg	0.062	0.011	EPA-8080	ND	A10	1
Endrin aldehyde	ND	mg/kg	0.062	0.029	EPA-8080	ND	A10	1
Heptachlor	ND	mg/kg	0.062	0.0045	EPA-8080	ND	A10	1
Heptachlor epoxide	ND	mg/kg	0.062	0.0021	EPA-8080	ND	A10	1
Methoxychlor	ND	mg/kg	0.062	0.026	EPA-8080	ND	A10	1
Toxaphene	ND	mg/kg	6.2	1.2	EPA-8080	ND	A10	1
PCB-1016	ND	mg/kg	1.2	0.49	EPA-8080	ND	A10	1
PCB-1221	ND	mg/kg	1.2	0.90	EPA-8080	ND	A10	1
PCB-1232	ND	mg/kg	1.2	0.92	EPA-8080	ND	A10	1
PCB-1242	ND	mg/kg	1.2	0.52	EPA-8080	ND	A10	1
PCB-1248	ND	mg/kg	1.2	0.88	EPA-8080	ND	A10	1
PCB-1254	ND	mg/kg	1.2	0.40	EPA-8080	ND	A10	1
PCB-1260	ND	mg/kg	1.2	0.36	EPA-8080	ND	A10	1
Total PCB's (Summation)	ND	mg/kg	1.2	0.62	EPA-8080	ND	A10	1
TCMX (Surrogate)	48.6	%	20 - 130 (LCL - UCL)		EPA-8080		A10	1
Decachlorobiphenyl (Surrogate)	94.9	%	40 - 130 (LCL - UCL)		EPA-8080		A10	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8080	09/29/17 10:30	09/29/17 18:31	HKS	GC-17	125	B[12784

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**Reported:** 01/04/2018 14:11  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Organo-Phosphorus Pesticide Analysis (EPA Method 8141A)

BCL Sample ID: 1726918-05		Client Sample Name: Former Northern Landfill, HA-37-8, 9/20/2017 11:50:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Azinphos methyl	ND	mg/kg	0.20	0.15	EPA-8141A	ND		1
Bolstar	ND	mg/kg	0.20	0.044	EPA-8141A	ND		1
Chlorpyrifos	ND	mg/kg	0.20	0.028	EPA-8141A	ND		1
Coumaphos	ND	mg/kg	0.20	0.16	EPA-8141A	ND		1
Demeton O/S	ND	mg/kg	0.20	0.068	EPA-8141A	ND		1
Diazinon	ND	mg/kg	0.20	0.048	EPA-8141A	ND		1
Dichlorvos	ND	mg/kg	0.20	0.018	EPA-8141A	ND		1
Disulfoton	ND	mg/kg	0.20	0.038	EPA-8141A	ND		1
Ethoprop	ND	mg/kg	0.20	0.024	EPA-8141A	ND		1
Fensulfothion	ND	mg/kg	0.20	0.11	EPA-8141A	ND		1
Fenthion	ND	mg/kg	0.20	0.042	EPA-8141A	ND		1
Merphos	ND	mg/kg	0.20	0.038	EPA-8141A	ND		1
Methyl parathion	ND	mg/kg	0.20	0.050	EPA-8141A	ND		1
Mevinphos	ND	mg/kg	0.20	0.048	EPA-8141A	ND		1
Naled	ND	mg/kg	0.20	0.086	EPA-8141A	ND		1
Phorate	ND	mg/kg	0.20	0.052	EPA-8141A	ND		1
Ronnel (Fenchlorphos)	ND	mg/kg	0.20	0.028	EPA-8141A	ND		1
Stirophos (Tetrachlorvinphos)	ND	mg/kg	0.20	0.040	EPA-8141A	ND		1
Tokuthion (Prothiofos)	ND	mg/kg	0.20	0.034	EPA-8141A	ND		1
Trichloronate	ND	mg/kg	0.20	0.026	EPA-8141A	ND		1
Triphenylphosphate (Surrogate)	52.8	%	40 - 120 (LCL - UCL)		EPA-8141A			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8141A	09/28/17 08:00	09/29/17 13:46	RSM	GC-18	20	B[12698

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**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Chlorinated Herbicides (EPA Method 8151A)

BCL Sample ID: 1726918-05		Client Sample Name: Former Northern Landfill, HA-37-8, 9/20/2017 11:50:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
2,4-D	ND	mg/kg	0.60	0.17	EPA-8151A	ND		1
2,4-DB	ND	mg/kg	1.2	0.51	EPA-8151A	ND		1
Dalapon	ND	mg/kg	1.5	1.0	EPA-8151A	ND		1
Dicamba	ND	mg/kg	0.060	0.048	EPA-8151A	ND		1
Dichloroprop	ND	mg/kg	0.60	0.16	EPA-8151A	ND		1
Dinoseb	ND	mg/kg	0.21	0.072	EPA-8151A	ND		1
2,4,5-T	ND	mg/kg	0.090	0.039	EPA-8151A	ND		1
2,4,5-TP (Silvex)	ND	mg/kg	0.090	0.036	EPA-8151A	ND		1
2,4-Dichlorophenylacetic acid (Surrogate)	87.8	%	40 - 120 (LCL - UCL)		EPA-8151A			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8151A	09/28/17 08:30	09/29/17 13:33	MSB	GC-8	30	B I2744

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**Reported:** 01/04/2018 14:11  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1726918-05		Client Sample Name: Former Northern Landfill, HA-37-8, 9/20/2017 11:50:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	0.0025	mg/kg	0.0050	0.0013	EPA-8260B	ND	J	1
Bromobenzene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
Bromochloromethane	ND	mg/kg	0.0050	0.00092	EPA-8260B	ND		1
Bromodichloromethane	ND	mg/kg	0.0050	0.00084	EPA-8260B	ND		1
Bromoform	ND	mg/kg	0.0050	0.0015	EPA-8260B	ND		1
Bromomethane	ND	mg/kg	0.0050	0.0016	EPA-8260B	ND		1
n-Butylbenzene	ND	mg/kg	0.0050	0.0015	EPA-8260B	ND		1
sec-Butylbenzene	ND	mg/kg	0.0050	0.0012	EPA-8260B	ND		1
tert-Butylbenzene	ND	mg/kg	0.0050	0.0012	EPA-8260B	ND		1
Carbon tetrachloride	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
Chlorobenzene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
Chloroethane	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
Chloroform	ND	mg/kg	0.0050	0.00063	EPA-8260B	ND		1
Chloromethane	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
2-Chlorotoluene	ND	mg/kg	0.0050	0.0018	EPA-8260B	ND		1
4-Chlorotoluene	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
Dibromochloromethane	ND	mg/kg	0.0050	0.00099	EPA-8260B	ND		1
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0050	0.0017	EPA-8260B	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0050	0.0010	EPA-8260B	ND		1
Dibromomethane	ND	mg/kg	0.0050	0.0018	EPA-8260B	ND		1
1,2-Dichlorobenzene	ND	mg/kg	0.0050	0.00081	EPA-8260B	ND		1
1,3-Dichlorobenzene	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
1,4-Dichlorobenzene	ND	mg/kg	0.0050	0.0015	EPA-8260B	ND		1
Dichlorodifluoromethane	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
1,1-Dichloroethane	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0050	0.00085	EPA-8260B	ND		1
1,1-Dichloroethene	ND	mg/kg	0.0050	0.0012	EPA-8260B	ND		1
cis-1,2-Dichloroethene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
trans-1,2-Dichloroethene	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
1,2-Dichloropropane	ND	mg/kg	0.0050	0.00081	EPA-8260B	ND		1
1,3-Dichloropropane	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
2,2-Dichloropropane	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
1,1-Dichloropropene	ND	mg/kg	0.0050	0.0012	EPA-8260B	ND		1

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**Reported:** 01/04/2018 14:11  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1726918-05		Client Sample Name: Former Northern Landfill, HA-37-8, 9/20/2017 11:50:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
cis-1,3-Dichloropropene	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
trans-1,3-Dichloropropene	ND	mg/kg	0.0050	0.0012	EPA-8260B	ND		1
<b>Ethylbenzene</b>	<b>0.0022</b>	<b>mg/kg</b>	<b>0.0050</b>	<b>0.0015</b>	<b>EPA-8260B</b>	ND	J	1
Hexachlorobutadiene	ND	mg/kg	0.0050	0.0017	EPA-8260B	ND		1
Isopropylbenzene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
<b>p-Isopropyltoluene</b>	<b>0.0018</b>	<b>mg/kg</b>	<b>0.0050</b>	<b>0.0013</b>	<b>EPA-8260B</b>	ND	J	1
Methylene chloride	ND	mg/kg	0.010	0.0024	EPA-8260B	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0050	0.00050	EPA-8260B	ND		1
Naphthalene	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
n-Propylbenzene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
Styrene	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
Tetrachloroethene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
<b>Toluene</b>	<b>0.0045</b>	<b>mg/kg</b>	<b>0.0050</b>	<b>0.0012</b>	<b>EPA-8260B</b>	ND	J	1
1,2,3-Trichlorobenzene	ND	mg/kg	0.0050	0.0021	EPA-8260B	ND		1
1,2,4-Trichlorobenzene	ND	mg/kg	0.0050	0.0020	EPA-8260B	ND		1
1,1,1-Trichloroethane	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
1,1,2-Trichloroethane	ND	mg/kg	0.0050	0.00077	EPA-8260B	ND		1
Trichloroethene	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
Trichlorofluoromethane	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
1,2,3-Trichloropropane	ND	mg/kg	0.0050	0.0016	EPA-8260B	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
<b>1,2,4-Trimethylbenzene</b>	<b>0.0072</b>	<b>mg/kg</b>	<b>0.0050</b>	<b>0.0013</b>	<b>EPA-8260B</b>	ND		1
<b>1,3,5-Trimethylbenzene</b>	<b>0.0030</b>	<b>mg/kg</b>	<b>0.0050</b>	<b>0.0015</b>	<b>EPA-8260B</b>	ND	J	1
Vinyl chloride	ND	mg/kg	0.0050	0.0016	EPA-8260B	ND		1
<b>Total Xylenes</b>	<b>0.0077</b>	<b>mg/kg</b>	<b>0.010</b>	<b>0.0034</b>	<b>EPA-8260B</b>	ND	J	1
<b>p- &amp; m-Xylenes</b>	<b>0.0043</b>	<b>mg/kg</b>	<b>0.0050</b>	<b>0.0022</b>	<b>EPA-8260B</b>	ND	J	1
<b>o-Xylene</b>	<b>0.0034</b>	<b>mg/kg</b>	<b>0.0050</b>	<b>0.0012</b>	<b>EPA-8260B</b>	ND	J	1
1,2-Dichloroethane-d4 (Surrogate)	99.7	%	70 - 121 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	96.4	%	81 - 117 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	98.4	%	74 - 121 (LCL - UCL)		EPA-8260B			1

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**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1726918-05		<b>Client Sample Name:</b> Former Northern Landfill, HA-37-8, 9/20/2017 11:50:00AM					
Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	10/03/17 06:00	10/03/17 14:02	ADC	MS-V2	1	B[12809

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**Reported:** 01/04/2018 14:11  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

BCL Sample ID: 1726918-05		Client Sample Name: Former Northern Landfill, HA-37-8, 9/20/2017 11:50:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Acenaphthene	ND	mg/kg	0.59	0.24	EPA-8270C-SIM	ND	A01	1
Acenaphthylene	ND	mg/kg	0.59	0.22	EPA-8270C-SIM	ND	A01	1
Anthracene	ND	mg/kg	0.59	0.24	EPA-8270C-SIM	ND	A01	1
<b>Benzo[a]anthracene</b>	<b>0.46</b>	<b>mg/kg</b>	<b>0.59</b>	<b>0.22</b>	<b>EPA-8270C-SIM</b>	ND	<b>J,A01</b>	1
Benzo[b]fluoranthene	ND	mg/kg	0.59	0.19	EPA-8270C-SIM	ND	A01	1
Benzo[k]fluoranthene	ND	mg/kg	0.59	0.22	EPA-8270C-SIM	ND	A01	1
Benzo[a]pyrene	ND	mg/kg	0.59	0.19	EPA-8270C-SIM	ND	A01	1
<b>Benzo[g,h,i]perylene</b>	<b>0.40</b>	<b>mg/kg</b>	<b>0.59</b>	<b>0.22</b>	<b>EPA-8270C-SIM</b>	ND	<b>J,A01</b>	1
<b>Chrysene</b>	<b>0.86</b>	<b>mg/kg</b>	<b>0.59</b>	<b>0.19</b>	<b>EPA-8270C-SIM</b>	ND	<b>A01</b>	1
Dibenzo[a,h]anthracene	ND	mg/kg	0.59	0.20	EPA-8270C-SIM	ND	A01	1
Fluoranthene	ND	mg/kg	0.59	0.28	EPA-8270C-SIM	ND	A01	1
Fluorene	ND	mg/kg	0.59	0.22	EPA-8270C-SIM	ND	A01	1
Indeno[1,2,3-cd]pyrene	ND	mg/kg	0.59	0.18	EPA-8270C-SIM	ND	A01	1
Naphthalene	ND	mg/kg	0.59	0.22	EPA-8270C-SIM	ND	A01	1
Phenanthrene	ND	mg/kg	0.59	0.24	EPA-8270C-SIM	ND	A01	1
Pyrene	ND	mg/kg	0.59	0.30	EPA-8270C-SIM	ND	A01	1
Nitrobenzene-d5 (Surrogate)	32.2	%	30 - 110 (LCL - UCL)		EPA-8270C-SIM		A01	1
2-Fluorobiphenyl (Surrogate)	37.1	%	40 - 120 (LCL - UCL)		EPA-8270C-SIM		A01,S09	1
p-Terphenyl-d14 (Surrogate)	42.1	%	30 - 120 (LCL - UCL)		EPA-8270C-SIM		A01	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8270C-SIM	09/29/17 11:00	10/03/17 13:49	MSB	MS-B7	198	BJ0320

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**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1726918-05	<b>Client Sample Name:</b>	Former Northern Landfill, HA-37-8, 9/20/2017 11:50:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	1000	250	EPA-8015B/FFP	ND	A01	1
TPH - Diesel (FFP)	ND	mg/kg	500	60	EPA-8015B/FFP	ND	A01	1
<b>TPH - Motor Oil</b>	<b>11000</b>	<b>mg/kg</b>	<b>1000</b>	<b>320</b>	<b>EPA-8015B/FFP</b>	ND	<b>A01</b>	1
Tetracosane (Surrogate)	0	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		A01,A17	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/28/17 20:25	10/04/17 11:58	AS1	GC-13	50.505	B[12745

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**Reported:** 01/04/2018 14:11  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Chemical Analysis

<b>BCL Sample ID:</b>	1726918-05	<b>Client Sample Name:</b>	Former Northern Landfill, HA-37-8, 9/20/2017 11:50:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Cyanide	ND	mg/kg	0.50	0.15	EPA-9012	ND		1
pH	7.60	pH Units	0.05	0.05	EPA-9045D		pH1:1	2
pH Measurement Temperature	19.4	C	0.1	0.1	EPA-9045D			2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9012	10/02/17 09:48	10/04/17 09:04	RCC	KONE-1	0.980	BJ0027
2	EPA-9045D	10/03/17 10:30	10/03/17 10:30	DIW	PH10	1	BJ0223

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**Reported:** 01/04/2018 14:11  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Total Concentrations (TTLIC)

BCL Sample ID: 1726918-05		Client Sample Name: Former Northern Landfill, HA-37-8, 9/20/2017 11:50:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Antimony	ND	mg/kg	5.0	0.33	EPA-6010B	ND		1
Arsenic	1.3	mg/kg	1.0	0.40	EPA-6010B	ND		1
Barium	14	mg/kg	0.50	0.18	EPA-6010B	ND		1
Beryllium	0.12	mg/kg	0.50	0.047	EPA-6010B	ND	J	1
Cadmium	0.15	mg/kg	0.50	0.052	EPA-6010B	ND	J	1
Chromium	15	mg/kg	0.50	0.050	EPA-6010B	0.052		1
Total Hexavalent Chromium	1.0	mg/kg	1.0	0.30	EPA-7199	ND		2
Cobalt	1.4	mg/kg	2.5	0.098	EPA-6010B	ND	J	1
Copper	2.7	mg/kg	1.0	0.050	EPA-6010B	ND		1
Lead	3.6	mg/kg	2.5	0.28	EPA-6010B	ND		1
Mercury	0.052	mg/kg	0.16	0.019	EPA-7471A	ND	J	3
Molybdenum	1.7	mg/kg	2.5	0.050	EPA-6010B	0.055	J	1
Nickel	13	mg/kg	0.50	0.15	EPA-6010B	ND		1
Selenium	ND	mg/kg	1.0	0.98	EPA-6010B	ND		1
Silver	ND	mg/kg	0.50	0.067	EPA-6010B	ND		1
Thallium	ND	mg/kg	5.0	0.64	EPA-6010B	ND		1
Vanadium	26	mg/kg	0.50	0.11	EPA-6010B	ND		1
Zinc	15	mg/kg	2.5	0.087	EPA-6010B	0.33		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	10/04/17 12:15	10/04/17 17:26	JCC	PE-OP3	0.935	B[J0385
2	EPA-7199	10/04/17 08:55	10/05/17 16:42	EMW	IC-4	1	B[J0037
3	EPA-7471A	09/28/17 12:00	09/28/17 14:09	MEV	CETAC2	0.962	B[I2606

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**Reported:** 01/04/2018 14:11  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1726918-06	<b>Client Sample Name:</b>	Former Northern Landfill, HA-37-9, 9/20/2017 11:55:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	12000	3000	EPA-8015B/FFP	ND	A01	1
TPH - Diesel (FFP)	ND	mg/kg	6000	720	EPA-8015B/FFP	ND	A01	1
<b>TPH - Motor Oil</b>	<b>82000</b>	<b>mg/kg</b>	<b>12000</b>	<b>3900</b>	<b>EPA-8015B/FFP</b>	ND	<b>A01</b>	1
Tetracosane (Surrogate)	121	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		A01	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/28/17 20:25	10/03/17 03:15	AS1	GC-13	600	B[12745

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**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1726918-07	<b>Client Sample Name:</b>	Former Northern Landfill, HA-34-2, 9/20/2017 9:30:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>12</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND	<b>J</b>	<b>1</b>
Tetracosane (Surrogate)	88.8	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/28/17 20:25	10/02/17 21:32	AS1	GC-13	0.987	B[12745

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1726918-08	<b>Client Sample Name:</b>	Former Northern Landfill, HA-34-4, 9/20/2017 9:37:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	83.2	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/28/17 20:25	10/02/17 21:55	AS1	GC-13	1	B[12745

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1726918-09	<b>Client Sample Name:</b>	Former Northern Landfill, HA-34-6, 9/20/2017 9:47:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>17</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND	<b>J</b>	<b>1</b>
Tetracosane (Surrogate)	76.5	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/28/17 20:25	10/02/17 22:17	AS1	GC-13	0.990	B[12745

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1726918-10	<b>Client Sample Name:</b>	Former Northern Landfill, HA-34-8, 9/20/2017 9:53:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>10</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND	<b>J</b>	<b>1</b>
Tetracosane (Surrogate)	84.0	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/28/17 20:25	10/02/17 22:40	AS1	GC-13	1.017	B[12745

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## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1726918-11	<b>Client Sample Name:</b>	Former Northern Landfill, HA-38-1, 9/20/2017 2:20:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	40	10	EPA-8015B/FFP	ND	A01	1
TPH - Diesel (FFP)	ND	mg/kg	20	2.4	EPA-8015B/FFP	ND	A01	1
<b>TPH - Motor Oil</b>	<b>340</b>	<b>mg/kg</b>	<b>40</b>	<b>13</b>	<b>EPA-8015B/FFP</b>	ND	<b>A01</b>	1
Tetracosane (Surrogate)	88.6	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		A01	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/28/17 20:25	10/04/17 11:36	AS1	GC-13	2.020	B[12745

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## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1726918-12	<b>Client Sample Name:</b>	Former Northern Landfill, HA-38-3, 9/20/2017 2:25:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>42</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND	<b>A57</b>	1
Tetracosane (Surrogate)	95.3	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/28/17 20:25	10/02/17 23:03	AS1	GC-13	1.014	B[12745

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## Organochlorine Pesticides and PCB's (EPA Method 8080)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[I2784</b>						
Aldrin	B[I2784-BLK1	ND	mg/kg	0.00050	0.000034	
alpha-BHC	B[I2784-BLK1	ND	mg/kg	0.00050	0.00013	
beta-BHC	B[I2784-BLK1	ND	mg/kg	0.00050	0.00015	
delta-BHC	B[I2784-BLK1	ND	mg/kg	0.00050	0.000047	
gamma-BHC (Lindane)	B[I2784-BLK1	ND	mg/kg	0.00050	0.000082	
Chlordane (Technical)	B[I2784-BLK1	ND	mg/kg	0.050	0.0017	
4,4'-DDD	B[I2784-BLK1	ND	mg/kg	0.00050	0.00021	
4,4'-DDE	B[I2784-BLK1	ND	mg/kg	0.00050	0.000020	
4,4'-DDT	B[I2784-BLK1	ND	mg/kg	0.00050	0.000093	
Dieldrin	B[I2784-BLK1	ND	mg/kg	0.00050	0.000079	
Endosulfan I	B[I2784-BLK1	ND	mg/kg	0.00050	0.000022	
Endosulfan II	B[I2784-BLK1	ND	mg/kg	0.00050	0.00014	
Endosulfan sulfate	B[I2784-BLK1	ND	mg/kg	0.00050	0.00034	
Endrin	B[I2784-BLK1	ND	mg/kg	0.00050	0.000091	
Endrin aldehyde	B[I2784-BLK1	ND	mg/kg	0.00050	0.00023	
Heptachlor	B[I2784-BLK1	ND	mg/kg	0.00050	0.000036	
Heptachlor epoxide	B[I2784-BLK1	ND	mg/kg	0.00050	0.000017	
Methoxychlor	B[I2784-BLK1	ND	mg/kg	0.00050	0.00021	
Toxaphene	B[I2784-BLK1	ND	mg/kg	0.050	0.0094	
PCB-1016	B[I2784-BLK1	ND	mg/kg	0.010	0.0039	
PCB-1221	B[I2784-BLK1	ND	mg/kg	0.010	0.0072	
PCB-1232	B[I2784-BLK1	ND	mg/kg	0.010	0.0074	
PCB-1242	B[I2784-BLK1	ND	mg/kg	0.010	0.0042	
PCB-1248	B[I2784-BLK1	ND	mg/kg	0.010	0.0070	
PCB-1254	B[I2784-BLK1	ND	mg/kg	0.010	0.0032	
PCB-1260	B[I2784-BLK1	ND	mg/kg	0.010	0.0029	
Total PCB's (Summation)	B[I2784-BLK1	ND	mg/kg	0.010	0.0050	
<b>TCMX (Surrogate)</b>	<b>B[I2784-BLK1</b>	<b>91.0</b>	<b>%</b>	<b>20 - 130 (LCL - UCL)</b>		
<b>Decachlorobiphenyl (Surrogate)</b>	<b>B[I2784-BLK1</b>	<b>130</b>	<b>%</b>	<b>40 - 130 (LCL - UCL)</b>		

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## Organochlorine Pesticides and PCB's (EPA Method 8080)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	Quals
QC Batch ID: B[I2784										
Aldrin	B[I2784-BS1	LCS	0.0048824	0.0049834	mg/kg	98.0		70 - 130		
gamma-BHC (Lindane)	B[I2784-BS1	LCS	0.0050904	0.0049834	mg/kg	102		60 - 140		
4,4'-DDT	B[I2784-BS1	LCS	0.0064053	0.0049834	mg/kg	129		60 - 140		
Dieldrin	B[I2784-BS1	LCS	0.0051864	0.0049834	mg/kg	104		70 - 130		
Endrin	B[I2784-BS1	LCS	0.0045379	0.0049834	mg/kg	91.1		60 - 140		
Heptachlor	B[I2784-BS1	LCS	0.0049306	0.0049834	mg/kg	98.9		60 - 140		
TCMX (Surrogate)	B[I2784-BS1	LCS	0.010147	0.0099668	mg/kg	102		20 - 130		
Decachlorobiphenyl (Surrogate)	B[I2784-BS1	LCS	0.025402	0.019934	mg/kg	127		40 - 130		

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## Organochlorine Pesticides and PCB's (EPA Method 8080)

### Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits		Lab Quals
									RPD	Percent Recovery	
QC Batch ID: BJI2784		Used client sample: N									
Aldrin	MS	1724840-81	ND	0.0048136	0.0049669	mg/kg		96.9		50 - 140	
	MSD	1724840-81	ND	0.0049128	0.0050505	mg/kg	2.0	97.3	30	50 - 140	
gamma-BHC (Lindane)	MS	1724840-81	ND	0.0050825	0.0049669	mg/kg		102		50 - 140	
	MSD	1724840-81	ND	0.0051684	0.0050505	mg/kg	1.7	102	30	50 - 140	
4,4'-DDT	MS	1724840-81	ND	0.0063424	0.0049669	mg/kg		128		50 - 140	
	MSD	1724840-81	ND	0.0060677	0.0050505	mg/kg	4.4	120	30	50 - 140	
Dieldrin	MS	1724840-81	ND	0.0051854	0.0049669	mg/kg		104		40 - 140	
	MSD	1724840-81	ND	0.0052963	0.0050505	mg/kg	2.1	105	30	40 - 140	
Endrin	MS	1724840-81	ND	0.0044066	0.0049669	mg/kg		88.7		50 - 150	
	MSD	1724840-81	ND	0.0044465	0.0050505	mg/kg	0.9	88.0	30	50 - 150	
Heptachlor	MS	1724840-81	ND	0.0048765	0.0049669	mg/kg		98.2		60 - 140	
	MSD	1724840-81	ND	0.0049808	0.0050505	mg/kg	2.1	98.6	30	60 - 140	
TCMX (Surrogate)	MS	1724840-81	ND	0.0098695	0.0099338	mg/kg		99.4		20 - 130	
	MSD	1724840-81	ND	0.010062	0.010101	mg/kg	1.9	99.6		20 - 130	
Decachlorobiphenyl (Surrogate)	MS	1724840-81	ND	0.025393	0.019868	mg/kg		128		40 - 130	
	MSD	1724840-81	ND	0.024887	0.020202	mg/kg	2.0	123		40 - 130	

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**Project Manager:** Kirk Henning

## Organo-Phosphorus Pesticide Analysis (EPA Method 8141A)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[I]2698</b>						
Azinphos methyl	B[I]2698-BLK1	ND	mg/kg	0.010	0.0073	
Bolstar	B[I]2698-BLK1	ND	mg/kg	0.010	0.0022	
Chlorpyrifos	B[I]2698-BLK1	ND	mg/kg	0.010	0.0014	
Coumaphos	B[I]2698-BLK1	ND	mg/kg	0.010	0.0081	
Demeton O/S	B[I]2698-BLK1	ND	mg/kg	0.010	0.0034	
Diazinon	B[I]2698-BLK1	ND	mg/kg	0.010	0.0024	
Dichlorvos	B[I]2698-BLK1	ND	mg/kg	0.010	0.00091	
Disulfoton	B[I]2698-BLK1	ND	mg/kg	0.010	0.0019	
Ethoprop	B[I]2698-BLK1	ND	mg/kg	0.010	0.0012	
Fensulfothion	B[I]2698-BLK1	ND	mg/kg	0.010	0.0056	
Fenthion	B[I]2698-BLK1	ND	mg/kg	0.010	0.0021	
Merphos	B[I]2698-BLK1	ND	mg/kg	0.010	0.0019	
Methyl parathion	B[I]2698-BLK1	ND	mg/kg	0.010	0.0025	
Mevinphos	B[I]2698-BLK1	ND	mg/kg	0.010	0.0024	
Naled	B[I]2698-BLK1	ND	mg/kg	0.010	0.0043	
Phorate	B[I]2698-BLK1	ND	mg/kg	0.010	0.0026	
Ronnel (Fenchlorphos)	B[I]2698-BLK1	ND	mg/kg	0.010	0.0014	
Stirophos (Tetrachlorvinphos)	B[I]2698-BLK1	ND	mg/kg	0.010	0.0020	
Tokuthion (Prothiofos)	B[I]2698-BLK1	ND	mg/kg	0.010	0.0017	
Trichloronate	B[I]2698-BLK1	ND	mg/kg	0.010	0.0013	
<b>Triphenylphosphate (Surrogate)</b>	<b>B[I]2698-BLK1</b>	<b>50.4</b>	<b>%</b>	<b>40 - 120 (LCL - UCL)</b>		

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**Project Manager:** Kirk Henning

## Organo-Phosphorus Pesticide Analysis (EPA Method 8141A)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	Quals
QC Batch ID: B[I2698										
Bolstar	B[I2698-BS1	LCS	0.060984	0.065574	mg/kg	93.0		50 - 130		
Chlorpyrifos	B[I2698-BS1	LCS	0.057049	0.065574	mg/kg	87.0		60 - 140		
Diazinon	B[I2698-BS1	LCS	0.042131	0.065574	mg/kg	64.2		40 - 120		
Methyl parathion	B[I2698-BS1	LCS	0.066393	0.065574	mg/kg	101		60 - 120		
Mevinphos	B[I2698-BS1	LCS	0.068361	0.065574	mg/kg	104		50 - 120		
Ronnel (Fenchlorphos)	B[I2698-BS1	LCS	0.064426	0.065574	mg/kg	98.2		50 - 120		
Stirophos (Tetrachlorvinphos)	B[I2698-BS1	LCS	0.091148	0.065574	mg/kg	139		60 - 140		
Triphenylphosphate (Surrogate)	B[I2698-BS1	LCS	0.075082	0.081967	mg/kg	91.6		40 - 120		

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**Reported:** 01/04/2018 14:11  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Organo-Phosphorus Pesticide Analysis (EPA Method 8141A)

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: BJI2698		Used client sample: N									
Bolstar	MS	1727295-01	ND	0.066337	0.066007	mg/kg		100		40 - 140	
	MSD	1727295-01	ND	0.062957	0.066445	mg/kg	5.2	94.7	30	40 - 140	
Chlorpyrifos	MS	1727295-01	ND	0.071617	0.066007	mg/kg		108		40 - 130	
	MSD	1727295-01	ND	0.061960	0.066445	mg/kg	14.5	93.2	30	40 - 130	
Diazinon	MS	1727295-01	ND	0.062046	0.066007	mg/kg		94.0		40 - 120	
	MSD	1727295-01	ND	0.063621	0.066445	mg/kg	2.5	95.8	30	40 - 120	
Methyl parathion	MS	1727295-01	ND	0.074092	0.066007	mg/kg		112		40 - 125	
	MSD	1727295-01	ND	0.072259	0.066445	mg/kg	2.5	109	30	40 - 125	
Mevinphos	MS	1727295-01	ND	0.10083	0.066007	mg/kg		153		40 - 140	Q03
	MSD	1727295-01	ND	0.099834	0.066445	mg/kg	1.0	150	30	40 - 140	Q03
Ronnel (Fenchlorphos)	MS	1727295-01	ND	0.071452	0.066007	mg/kg		108		40 - 120	
	MSD	1727295-01	ND	0.069435	0.066445	mg/kg	2.9	104	30	40 - 120	
Stirophos (Tetrachlorvinphos)	MS	1727295-01	ND	0.11848	0.066007	mg/kg		179		40 - 140	Q03
	MSD	1727295-01	ND	0.11429	0.066445	mg/kg	3.6	172	30	40 - 140	Q03
Triphenylphosphate (Surrogate)	MS	1727295-01	ND	0.080528	0.082508	mg/kg		97.6		40 - 120	
	MSD	1727295-01	ND	0.071927	0.083056	mg/kg	11.3	86.6		40 - 120	

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**Reported:** 01/04/2018 14:11  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Chlorinated Herbicides (EPA Method 8151A)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[I2744</b>						
2,4-D	B[I2744-BLK1	ND	mg/kg	0.020	0.0058	
2,4-DB	B[I2744-BLK1	ND	mg/kg	0.040	0.017	
Dalapon	B[I2744-BLK1	ND	mg/kg	0.050	0.034	
Dicamba	B[I2744-BLK1	ND	mg/kg	0.0020	0.0016	
Dichloroprop	B[I2744-BLK1	ND	mg/kg	0.020	0.0055	
Dinoseb	B[I2744-BLK1	ND	mg/kg	0.0070	0.0024	
2,4,5-T	B[I2744-BLK1	ND	mg/kg	0.0030	0.0013	
2,4,5-TP (Silvex)	B[I2744-BLK1	ND	mg/kg	0.0030	0.0012	
<b>2,4-Dichlorophenylacetic acid (Surrogate)</b>	<b>B[I2744-BLK1</b>	<b>87.8</b>	<b>%</b>	<b>40 - 120 (LCL - UCL)</b>		

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**Reported:** 01/04/2018 14:11  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Chlorinated Herbicides (EPA Method 8151A)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	Quals
QC Batch ID: B[I2744										
2,4-D	B[I2744-BS1	LCS	0.069799	0.080537	mg/kg	86.7		50 - 120		
2,4-DB	B[I2744-BS1	LCS	0.17685	0.18121	mg/kg	97.6		50 - 120		
Dicamba	B[I2744-BS1	LCS	0.017785	0.020134	mg/kg	88.3		50 - 120		
Dichloroprop	B[I2744-BS1	LCS	0.069463	0.080537	mg/kg	86.2		50 - 120		
Dinoseb	B[I2744-BS1	LCS	0.036913	0.040268	mg/kg	91.7		50 - 120		
2,4,5-T	B[I2744-BS1	LCS	0.019463	0.020134	mg/kg	96.7		30 - 120		
2,4,5-TP (Silvex)	B[I2744-BS1	LCS	0.020470	0.020134	mg/kg	102		50 - 120		
2,4-Dichlorophenylacetic acid (Surrogate)	B[I2744-BS1	LCS	0.11040	0.13423	mg/kg	82.2		40 - 120		

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**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Chlorinated Herbicides (EPA Method 8151A)

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: BJI2744		Used client sample: N									
2,4-D	MS	1727295-01	ND	0.067763	0.078947	mg/kg		85.8		40 - 120	
	MSD	1727295-01	ND	0.055932	0.081356	mg/kg	19.1	68.8	30	40 - 120	
2,4-DB	MS	1727295-01	ND	0.17039	0.17763	mg/kg		95.9		50 - 120	
	MSD	1727295-01	ND	0.14712	0.18305	mg/kg	14.7	80.4	30	50 - 120	
Dicamba	MS	1727295-01	ND	0.017434	0.019737	mg/kg		88.3		50 - 120	
	MSD	1727295-01	ND	0.014237	0.020339	mg/kg	20.2	70.0	30	50 - 120	
Dichloroprop	MS	1727295-01	ND	0.066776	0.078947	mg/kg		84.6		40 - 120	
	MSD	1727295-01	ND	0.052542	0.081356	mg/kg	23.9	64.6	30	40 - 120	
Dinoseb	MS	1727295-01	ND	0.034211	0.039474	mg/kg		86.7		40 - 130	
	MSD	1727295-01	ND	0.029831	0.040678	mg/kg	13.7	73.3	30	40 - 130	
2,4,5-T	MS	1727295-01	ND	0.018421	0.019737	mg/kg		93.3		30 - 120	
	MSD	1727295-01	ND	0.015932	0.020339	mg/kg	14.5	78.3	30	30 - 120	
2,4,5-TP (Silvex)	MS	1727295-01	ND	0.020066	0.019737	mg/kg		102		40 - 120	
	MSD	1727295-01	ND	0.016271	0.020339	mg/kg	20.9	80.0	30	40 - 120	
2,4-Dichlorophenylacetic acid (Surrogate)	MS	1727295-01	ND	0.10625	0.13158	mg/kg		80.7		40 - 120	
	MSD	1727295-01	ND	0.10746	0.13559	mg/kg	1.1	79.3		40 - 120	

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**Reported:** 01/04/2018 14:11  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Volatile Organic Analysis (EPA Method 8260B)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[I2809</b>						
Benzene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0013	
Bromobenzene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0013	
Bromochloromethane	B[I2809-BLK1	ND	mg/kg	0.0050	0.00092	
Bromodichloromethane	B[I2809-BLK1	ND	mg/kg	0.0050	0.00084	
Bromoform	B[I2809-BLK1	ND	mg/kg	0.0050	0.0015	
Bromomethane	B[I2809-BLK1	ND	mg/kg	0.0050	0.0016	
n-Butylbenzene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0015	
sec-Butylbenzene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0012	
tert-Butylbenzene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0012	
Carbon tetrachloride	B[I2809-BLK1	ND	mg/kg	0.0050	0.0011	
Chlorobenzene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0013	
Chloroethane	B[I2809-BLK1	ND	mg/kg	0.0050	0.0014	
Chloroform	B[I2809-BLK1	ND	mg/kg	0.0050	0.00063	
Chloromethane	B[I2809-BLK1	ND	mg/kg	0.0050	0.0014	
2-Chlorotoluene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0018	
4-Chlorotoluene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0014	
Dibromochloromethane	B[I2809-BLK1	ND	mg/kg	0.0050	0.00099	
1,2-Dibromo-3-chloropropane	B[I2809-BLK1	ND	mg/kg	0.0050	0.0017	
1,2-Dibromoethane	B[I2809-BLK1	ND	mg/kg	0.0050	0.0010	
Dibromomethane	B[I2809-BLK1	ND	mg/kg	0.0050	0.0018	
1,2-Dichlorobenzene	B[I2809-BLK1	ND	mg/kg	0.0050	0.00081	
1,3-Dichlorobenzene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0014	
1,4-Dichlorobenzene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0015	
Dichlorodifluoromethane	B[I2809-BLK1	ND	mg/kg	0.0050	0.0013	
1,1-Dichloroethane	B[I2809-BLK1	ND	mg/kg	0.0050	0.0014	
1,2-Dichloroethane	B[I2809-BLK1	ND	mg/kg	0.0050	0.00085	
1,1-Dichloroethene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0012	
cis-1,2-Dichloroethene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0013	
trans-1,2-Dichloroethene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0014	
1,2-Dichloropropane	B[I2809-BLK1	ND	mg/kg	0.0050	0.00081	
1,3-Dichloropropane	B[I2809-BLK1	ND	mg/kg	0.0050	0.0011	
2,2-Dichloropropane	B[I2809-BLK1	ND	mg/kg	0.0050	0.0013	
1,1-Dichloropropene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0012	
cis-1,3-Dichloropropene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0011	

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**Reported:** 01/04/2018 14:11  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Volatile Organic Analysis (EPA Method 8260B)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[I2809</b>						
trans-1,3-Dichloropropene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0012	
Ethylbenzene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0015	
Hexachlorobutadiene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0017	
Isopropylbenzene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0013	
p-Isopropyltoluene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0013	
Methylene chloride	B[I2809-BLK1	ND	mg/kg	0.010	0.0024	
Methyl t-butyl ether	B[I2809-BLK1	ND	mg/kg	0.0050	0.00050	
Naphthalene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0014	
n-Propylbenzene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0013	
Styrene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0014	
1,1,1,2-Tetrachloroethane	B[I2809-BLK1	ND	mg/kg	0.0050	0.0011	
1,1,2,2-Tetrachloroethane	B[I2809-BLK1	ND	mg/kg	0.0050	0.0011	
Tetrachloroethene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0013	
Toluene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0012	
1,2,3-Trichlorobenzene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0021	
1,2,4-Trichlorobenzene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0020	
1,1,1-Trichloroethane	B[I2809-BLK1	ND	mg/kg	0.0050	0.0011	
1,1,2-Trichloroethane	B[I2809-BLK1	ND	mg/kg	0.0050	0.00077	
Trichloroethene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0011	
Trichlorofluoromethane	B[I2809-BLK1	ND	mg/kg	0.0050	0.0011	
1,2,3-Trichloropropane	B[I2809-BLK1	ND	mg/kg	0.0050	0.0016	
1,1,2-Trichloro-1,2,2-trifluoroethane	B[I2809-BLK1	ND	mg/kg	0.0050	0.0013	
1,2,4-Trimethylbenzene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0013	
1,3,5-Trimethylbenzene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0015	
Vinyl chloride	B[I2809-BLK1	ND	mg/kg	0.0050	0.0016	
Total Xylenes	B[I2809-BLK1	ND	mg/kg	0.010	0.0034	
p- & m-Xylenes	B[I2809-BLK1	ND	mg/kg	0.0050	0.0022	
o-Xylene	B[I2809-BLK1	ND	mg/kg	0.0050	0.0012	
<b>1,2-Dichloroethane-d4 (Surrogate)</b>	<b>B[I2809-BLK1</b>	<b>94.1</b>	<b>%</b>	<b>70 - 121 (LCL - UCL)</b>		
<b>Toluene-d8 (Surrogate)</b>	<b>B[I2809-BLK1</b>	<b>107</b>	<b>%</b>	<b>81 - 117 (LCL - UCL)</b>		
<b>4-Bromofluorobenzene (Surrogate)</b>	<b>B[I2809-BLK1</b>	<b>103</b>	<b>%</b>	<b>74 - 121 (LCL - UCL)</b>		

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**Reported:** 01/04/2018 14:11  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Volatile Organic Analysis (EPA Method 8260B)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: B[I2809										
Benzene	B[I2809-BS1	LCS	0.10161	0.12500	mg/kg	81.3		70 - 130		
Bromodichloromethane	B[I2809-BS1	LCS	0.12298	0.12500	mg/kg	98.4		70 - 130		
Chlorobenzene	B[I2809-BS1	LCS	0.12259	0.12500	mg/kg	98.1		70 - 130		
Chloroethane	B[I2809-BS1	LCS	0.099630	0.12500	mg/kg	79.7		70 - 130		
1,4-Dichlorobenzene	B[I2809-BS1	LCS	0.12381	0.12500	mg/kg	99.0		70 - 130		
1,1-Dichloroethane	B[I2809-BS1	LCS	0.11132	0.12500	mg/kg	89.1		70 - 130		
1,1-Dichloroethene	B[I2809-BS1	LCS	0.11529	0.12500	mg/kg	92.2		70 - 130		
Toluene	B[I2809-BS1	LCS	0.11580	0.12500	mg/kg	92.6		70 - 130		
Trichloroethene	B[I2809-BS1	LCS	0.11778	0.12500	mg/kg	94.2		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	B[I2809-BS1	LCS	0.045850	0.050000	mg/kg	91.7		70 - 121		
Toluene-d8 (Surrogate)	B[I2809-BS1	LCS	0.049050	0.050000	mg/kg	98.1		81 - 117		
4-Bromofluorobenzene (Surrogate)	B[I2809-BS1	LCS	0.050450	0.050000	mg/kg	101		74 - 121		

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**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Volatile Organic Analysis (EPA Method 8260B)

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: BJI2809		Used client sample: N									
Benzene	MS	1724840-82	ND	0.10146	0.12500	mg/kg		81.2		70 - 130	
	MSD	1724840-82	ND	0.10881	0.12500	mg/kg	7.0	87.0	20	70 - 130	
Bromodichloromethane	MS	1724840-82	ND	0.12944	0.12500	mg/kg		104		70 - 130	
	MSD	1724840-82	ND	0.12549	0.12500	mg/kg	3.1	100	20	70 - 130	
Chlorobenzene	MS	1724840-82	ND	0.12478	0.12500	mg/kg		99.8		70 - 130	
	MSD	1724840-82	ND	0.13152	0.12500	mg/kg	5.3	105	20	70 - 130	
Chloroethane	MS	1724840-82	ND	0.098450	0.12500	mg/kg		78.8		70 - 130	
	MSD	1724840-82	ND	0.10119	0.12500	mg/kg	2.7	81.0	20	70 - 130	
1,4-Dichlorobenzene	MS	1724840-82	ND	0.13685	0.12500	mg/kg		109		70 - 130	
	MSD	1724840-82	ND	0.13428	0.12500	mg/kg	1.9	107	20	70 - 130	
1,1-Dichloroethane	MS	1724840-82	ND	0.10498	0.12500	mg/kg		84.0		70 - 130	
	MSD	1724840-82	ND	0.10551	0.12500	mg/kg	0.5	84.4	20	70 - 130	
1,1-Dichloroethene	MS	1724840-82	ND	0.11512	0.12500	mg/kg		92.1		70 - 130	
	MSD	1724840-82	ND	0.11704	0.12500	mg/kg	1.7	93.6	20	70 - 130	
Toluene	MS	1724840-82	ND	0.12717	0.12500	mg/kg		102		70 - 130	
	MSD	1724840-82	ND	0.11872	0.12500	mg/kg	6.9	95.0	20	70 - 130	
Trichloroethene	MS	1724840-82	ND	0.12280	0.12500	mg/kg		98.2		70 - 130	
	MSD	1724840-82	ND	0.12251	0.12500	mg/kg	0.2	98.0	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1724840-82	ND	0.044450	0.050000	mg/kg		88.9		70 - 121	
	MSD	1724840-82	ND	0.046760	0.050000	mg/kg	5.1	93.5		70 - 121	
Toluene-d8 (Surrogate)	MS	1724840-82	ND	0.051910	0.050000	mg/kg		104		81 - 117	
	MSD	1724840-82	ND	0.050520	0.050000	mg/kg	2.7	101		81 - 117	
4-Bromofluorobenzene (Surrogate)	MS	1724840-82	ND	0.052830	0.050000	mg/kg		106		74 - 121	
	MSD	1724840-82	ND	0.055410	0.050000	mg/kg	4.8	111		74 - 121	

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**Reported:** 01/04/2018 14:11  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J0320</b>						
Acenaphthene	B[J0320-BLK1	ND	mg/kg	0.0030	0.0012	
Acenaphthylene	B[J0320-BLK1	ND	mg/kg	0.0030	0.0011	
Anthracene	B[J0320-BLK1	ND	mg/kg	0.0030	0.0012	
Benzo[a]anthracene	B[J0320-BLK1	ND	mg/kg	0.0030	0.0011	
Benzo[b]fluoranthene	B[J0320-BLK1	ND	mg/kg	0.0030	0.00095	
Benzo[k]fluoranthene	B[J0320-BLK1	ND	mg/kg	0.0030	0.0011	
Benzo[a]pyrene	B[J0320-BLK1	ND	mg/kg	0.0030	0.00095	
Benzo[g,h,i]perylene	B[J0320-BLK1	ND	mg/kg	0.0030	0.0011	
Chrysene	B[J0320-BLK1	ND	mg/kg	0.0030	0.00097	
Dibenzo[a,h]anthracene	B[J0320-BLK1	ND	mg/kg	0.0030	0.00099	
Fluoranthene	B[J0320-BLK1	ND	mg/kg	0.0030	0.0014	
Fluorene	B[J0320-BLK1	ND	mg/kg	0.0030	0.0011	
Indeno[1,2,3-cd]pyrene	B[J0320-BLK1	ND	mg/kg	0.0030	0.00092	
Naphthalene	B[J0320-BLK1	ND	mg/kg	0.0030	0.0011	
Phenanthrene	B[J0320-BLK1	ND	mg/kg	0.0030	0.0012	
Pyrene	B[J0320-BLK1	ND	mg/kg	0.0030	0.0015	
<b>Nitrobenzene-d5 (Surrogate)</b>	<b>B[J0320-BLK1</b>	<b>75.0</b>	<b>%</b>	<b>30 - 110 (LCL - UCL)</b>		
<b>2-Fluorobiphenyl (Surrogate)</b>	<b>B[J0320-BLK1</b>	<b>65.3</b>	<b>%</b>	<b>40 - 120 (LCL - UCL)</b>		
<b>p-Terphenyl-d14 (Surrogate)</b>	<b>B[J0320-BLK1</b>	<b>70.3</b>	<b>%</b>	<b>30 - 120 (LCL - UCL)</b>		

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**Reported:** 01/04/2018 14:11  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	Quals
QC Batch ID: B[J0320										
Acenaphthene	B[J0320-BS1	LCS	0.025418	0.033445	mg/kg	76.0		60 - 130		
Acenaphthylene	B[J0320-BS1	LCS	0.026371	0.033445	mg/kg	78.9		60 - 130		
Anthracene	B[J0320-BS1	LCS	0.025418	0.033445	mg/kg	76.0		60 - 130		
Benzo[a]anthracene	B[J0320-BS1	LCS	0.030502	0.033445	mg/kg	91.2		60 - 130		
Benzo[b]fluoranthene	B[J0320-BS1	LCS	0.034950	0.033445	mg/kg	104		50 - 130		
Benzo[k]fluoranthene	B[J0320-BS1	LCS	0.031137	0.033445	mg/kg	93.1		60 - 130		
Benzo[a]pyrene	B[J0320-BS1	LCS	0.027960	0.033445	mg/kg	83.6		60 - 130		
Benzo[g,h,i]perylene	B[J0320-BS1	LCS	0.027324	0.033445	mg/kg	81.7		50 - 130		
Chrysene	B[J0320-BS1	LCS	0.027007	0.033445	mg/kg	80.8		50 - 130		
Dibenzo[a,h]anthracene	B[J0320-BS1	LCS	0.022876	0.033445	mg/kg	68.4		50 - 130		
Fluoranthene	B[J0320-BS1	LCS	0.030184	0.033445	mg/kg	90.2		60 - 130		
Fluorene	B[J0320-BS1	LCS	0.023512	0.033445	mg/kg	70.3		50 - 130		
Indeno[1,2,3-cd]pyrene	B[J0320-BS1	LCS	0.026371	0.033445	mg/kg	78.9		50 - 130		
Naphthalene	B[J0320-BS1	LCS	0.025100	0.033445	mg/kg	75.0		50 - 130		
Phenanthrene	B[J0320-BS1	LCS	0.020652	0.033445	mg/kg	61.8		50 - 130		
Pyrene	B[J0320-BS1	LCS	0.035585	0.033445	mg/kg	106		50 - 130		
Nitrobenzene-d5 (Surrogate)	B[J0320-BS1	LCS	0.078478	0.13378	mg/kg	58.7		30 - 110		
2-Fluorobiphenyl (Surrogate)	B[J0320-BS1	LCS	0.071171	0.13378	mg/kg	53.2		40 - 120		
p-Terphenyl-d14 (Surrogate)	B[J0320-BS1	LCS	0.083880	0.13378	mg/kg	62.7		30 - 120		

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**Project Manager:** Kirk Henning

## Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J0320]		Used client sample: N									
Acenaphthene	MS	1724840-81	ND	0.027997	0.033113	mg/kg		84.6		50 - 130	
	MSD	1724840-81	ND	0.026316	0.032895	mg/kg	6.2	80.0	30	50 - 130	
Acenaphthylene	MS	1724840-81	ND	0.029255	0.033113	mg/kg		88.3		50 - 130	
	MSD	1724840-81	ND	0.028289	0.032895	mg/kg	3.4	86.0	30	50 - 130	
Anthracene	MS	1724840-81	ND	0.029884	0.033113	mg/kg		90.2		50 - 130	
	MSD	1724840-81	ND	0.028618	0.032895	mg/kg	4.3	87.0	30	50 - 130	
Benzo[a]anthracene	MS	1724840-81	ND	0.032715	0.033113	mg/kg		98.8		50 - 130	
	MSD	1724840-81	ND	0.036842	0.032895	mg/kg	11.9	112	30	50 - 130	
Benzo[b]fluoranthene	MS	1724840-81	ND	0.036490	0.033113	mg/kg		110		40 - 130	
	MSD	1724840-81	ND	0.051316	0.032895	mg/kg	33.8	156	30	40 - 130	Q02,Q03
Benzo[k]fluoranthene	MS	1724840-81	ND	0.036490	0.033113	mg/kg		110		40 - 130	
	MSD	1724840-81	ND	0.039145	0.032895	mg/kg	7.0	119	30	40 - 130	
Benzo[a]pyrene	MS	1724840-81	ND	0.029884	0.033113	mg/kg		90.2		40 - 130	
	MSD	1724840-81	ND	0.030263	0.032895	mg/kg	1.3	92.0	30	40 - 130	
Benzo[g,h,i]perylene	MS	1724840-81	ND	0.030513	0.033113	mg/kg		92.1		40 - 130	
	MSD	1724840-81	ND	0.027632	0.032895	mg/kg	9.9	84.0	30	40 - 130	
Chrysene	MS	1724840-81	ND	0.029570	0.033113	mg/kg		89.3		40 - 130	
	MSD	1724840-81	ND	0.028618	0.032895	mg/kg	3.3	87.0	30	40 - 130	
Dibenzo[a,h]anthracene	MS	1724840-81	ND	0.025166	0.033113	mg/kg		76.0		40 - 130	
	MSD	1724840-81	ND	0.023026	0.032895	mg/kg	8.9	70.0	30	40 - 130	
Fluoranthene	MS	1724840-81	ND	0.032715	0.033113	mg/kg		98.8		40 - 130	
	MSD	1724840-81	ND	0.032237	0.032895	mg/kg	1.5	98.0	30	40 - 130	
Fluorene	MS	1724840-81	ND	0.028940	0.033113	mg/kg		87.4		40 - 130	
	MSD	1724840-81	ND	0.028289	0.032895	mg/kg	2.3	86.0	30	40 - 130	
Indeno[1,2,3-cd]pyrene	MS	1724840-81	ND	0.029255	0.033113	mg/kg		88.3		30 - 130	
	MSD	1724840-81	ND	0.026316	0.032895	mg/kg	10.6	80.0	30	30 - 130	
Naphthalene	MS	1724840-81	ND	0.027368	0.033113	mg/kg		82.6		50 - 130	
	MSD	1724840-81	ND	0.027632	0.032895	mg/kg	1.0	84.0	30	50 - 130	
Phenanthrene	MS	1724840-81	ND	0.022964	0.033113	mg/kg		69.3		40 - 130	
	MSD	1724840-81	ND	0.022368	0.032895	mg/kg	2.6	68.0	30	40 - 130	
Pyrene	MS	1724840-81	ND	0.038377	0.033113	mg/kg		116		40 - 130	
	MSD	1724840-81	ND	0.038816	0.032895	mg/kg	1.1	118	30	40 - 130	
Nitrobenzene-d5 (Surrogate)	MS	1724840-81	ND	0.10444	0.13245	mg/kg		78.9		30 - 110	
	MSD	1724840-81	ND	0.10691	0.13158	mg/kg	2.3	81.3		30 - 110	
2-Fluorobiphenyl (Surrogate)	MS	1724840-81	ND	0.090281	0.13245	mg/kg		68.2		40 - 120	
	MSD	1724840-81	ND	0.089145	0.13158	mg/kg	1.3	67.7		40 - 120	

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**Reported:** 01/04/2018 14:11  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

### Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits		
									RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J0320		Used client sample: N									
p-Terphenyl-d14 (Surrogate)	MS	1724840-81	ND	0.090596	0.13245	mg/kg		68.4		30 - 120	
	MSD	1724840-81	ND	0.091776	0.13158	mg/kg	1.3	69.7		30 - 120	





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## Total Petroleum Hydrocarbons

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[I2745</b>						
TPH - Gasoline	B[I2745-BLK1	ND	mg/kg	20	5.0	
TPH - Diesel (FFP)	B[I2745-BLK1	ND	mg/kg	10	1.2	
TPH - Motor Oil	B[I2745-BLK1	ND	mg/kg	20	6.5	
<b>Tetracosane (Surrogate)</b>	<b>B[I2745-BLK1</b>	<b>108</b>	<b>%</b>	<b>20 - 145 (LCL - UCL)</b>		



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## Total Petroleum Hydrocarbons

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: B[I2745										
TPH - Diesel (FFP)	B[I2745-BS1	LCS	60.175	82.237	mg/kg	73.2		64 - 124		
Tetracosane (Surrogate)	B[I2745-BS1	LCS	2.7281	3.2908	mg/kg	82.9		20 - 145		



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## Total Petroleum Hydrocarbons

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[I2745		Used client sample: Y - Description: HA-33-5, 09/21/2017 11:20									
TPH - Diesel (FFP)	MS	1726917-06	ND	72.071	83.333	mg/kg		86.5		52 - 131	
	MSD	1726917-06	ND	52.526	84.746	mg/kg	31.4	62.0	30	52 - 131	Q02
Tetracosane (Surrogate)	MS	1726917-06	ND	3.2913	3.3347	mg/kg		98.7		20 - 145	
	MSD	1726917-06	ND	2.3600	3.3912	mg/kg	33.0	69.6		20 - 145	

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**Reported:** 01/04/2018 14:11  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Chemical Analysis

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J0027</b>						
Total Cyanide	B[J0027-BLK1	ND	mg/kg	0.50	0.15	

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Project Number: 185850429  
Project Manager: Kirk Henning

## Chemical Analysis

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: B[J0027										
Total Cyanide	B[J0027-BS1	LCS	14.296	14.423	mg/kg	99.1		80 - 120		
QC Batch ID: B[J0223										
pH	B[J0223-BS1	LCS	6.9600	7.0000	pH Units	99.4		95 - 105		

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## Chemical Analysis

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J0027]		Used client sample: Y - Description: HA-37-8, 09/20/2017 11:50									
Total Cyanide	DUP	1726918-05	ND	ND		mg/kg			20		
	MS	1726918-05	ND	9.3974	9.6154	mg/kg		97.7		80 - 120	
	MSD	1726918-05	ND	9.5980	9.8039	mg/kg	2.1	97.9	20	80 - 120	
QC Batch ID: B[J0223]		Used client sample: Y - Description: HA-37-8, 09/20/2017 11:50									
pH	DUP	1726918-05	7.5950	7.6190		pH Units	0.3		20		

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## Total Concentrations (TTLC)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[I2606</b>						
Mercury	B[I2606-BLK1	ND	mg/kg	0.16	0.019	
<b>QC Batch ID: B[J0037</b>						
Total Hexavalent Chromium	B[J0037-BLK1	ND	mg/kg	1.0	0.30	
<b>QC Batch ID: B[J0385</b>						
Antimony	B[J0385-BLK1	ND	mg/kg	5.0	0.33	
Arsenic	B[J0385-BLK1	ND	mg/kg	1.0	0.40	
Barium	B[J0385-BLK1	ND	mg/kg	0.50	0.18	
Beryllium	B[J0385-BLK1	ND	mg/kg	0.50	0.047	
Cadmium	B[J0385-BLK1	ND	mg/kg	0.50	0.052	
<b>Chromium</b>	<b>B[J0385-BLK1</b>	<b>0.055396</b>	<b>mg/kg</b>	<b>0.50</b>	<b>0.050</b>	<b>J</b>
Cobalt	B[J0385-BLK1	ND	mg/kg	2.5	0.098	
Copper	B[J0385-BLK1	ND	mg/kg	1.0	0.050	
Lead	B[J0385-BLK1	ND	mg/kg	2.5	0.28	
<b>Molybdenum</b>	<b>B[J0385-BLK1</b>	<b>0.058533</b>	<b>mg/kg</b>	<b>2.5</b>	<b>0.050</b>	<b>J</b>
Nickel	B[J0385-BLK1	ND	mg/kg	0.50	0.15	
Selenium	B[J0385-BLK1	ND	mg/kg	1.0	0.98	
Silver	B[J0385-BLK1	ND	mg/kg	0.50	0.067	
Thallium	B[J0385-BLK1	ND	mg/kg	5.0	0.64	
Vanadium	B[J0385-BLK1	ND	mg/kg	0.50	0.11	
<b>Zinc</b>	<b>B[J0385-BLK1</b>	<b>0.35735</b>	<b>mg/kg</b>	<b>2.5</b>	<b>0.087</b>	<b>J</b>

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## Total Concentrations (TTLC)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: B[I2606										
Mercury	B[I2606-BS1	LCS	0.84448	0.80000	mg/kg	106		80 - 120		
QC Batch ID: B[J0037										
Total Hexavalent Chromium	B[J0037-BS1	LCS	42.234	40.000	mg/kg	106		80 - 120		
QC Batch ID: B[J0385										
Antimony	B[J0385-BS1	LCS	112.08	100.00	mg/kg	112		75 - 125		
Arsenic	B[J0385-BS1	LCS	10.204	10.000	mg/kg	102		75 - 125		
Barium	B[J0385-BS1	LCS	95.872	100.00	mg/kg	95.9		75 - 125		
Beryllium	B[J0385-BS1	LCS	10.527	10.000	mg/kg	105		75 - 125		
Cadmium	B[J0385-BS1	LCS	10.671	10.000	mg/kg	107		75 - 125		
Chromium	B[J0385-BS1	LCS	113.24	100.00	mg/kg	113		75 - 125		
Cobalt	B[J0385-BS1	LCS	108.93	100.00	mg/kg	109		75 - 125		
Copper	B[J0385-BS1	LCS	100.81	100.00	mg/kg	101		75 - 125		
Lead	B[J0385-BS1	LCS	109.46	100.00	mg/kg	109		75 - 125		
Molybdenum	B[J0385-BS1	LCS	107.37	100.00	mg/kg	107		75 - 125		
Nickel	B[J0385-BS1	LCS	117.10	100.00	mg/kg	117		75 - 125		
Selenium	B[J0385-BS1	LCS	10.091	10.000	mg/kg	101		75 - 125		
Silver	B[J0385-BS1	LCS	10.101	10.000	mg/kg	101		75 - 125		
Thallium	B[J0385-BS1	LCS	120.66	100.00	mg/kg	121		75 - 125		
Vanadium	B[J0385-BS1	LCS	108.16	100.00	mg/kg	108		75 - 125		
Zinc	B[J0385-BS1	LCS	107.40	100.00	mg/kg	107		75 - 125		

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## Total Concentrations (TTLC)

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[I2606]		Used client sample: N									
Mercury	DUP	1727058-13	ND	ND		mg/kg			20		
	MS	1727058-13	ND	0.85270	0.79365	mg/kg		107		80 - 120	
	MSD	1727058-13	ND	0.82381	0.79365	mg/kg	3.4	104	20	80 - 120	
QC Batch ID: B[J0037]		Used client sample: N									
Total Hexavalent Chromium	DUP	1727341-20	1.2560	1.2600		mg/kg	0.3		20		
	MS	1727341-20	1.2560	42.298	40.000	mg/kg		103		75 - 125	
	MSD	1727341-20	1.2560	42.794	40.000	mg/kg	1.2	104	20	75 - 125	
QC Batch ID: B[J0385]		Used client sample: N									
Antimony	DUP	1727060-13	0.37664	ND		mg/kg			20		
	MS	1727060-13	0.37664	97.321	100.00	mg/kg		96.9		16 - 119	
	MSD	1727060-13	0.37664	97.284	100.00	mg/kg	0.0	96.9	20	16 - 119	
Arsenic	DUP	1727060-13	ND	ND		mg/kg			20		
	MS	1727060-13	ND	8.7395	10.000	mg/kg		87.4		75 - 125	
	MSD	1727060-13	ND	8.4271	10.000	mg/kg	3.6	84.3	20	75 - 125	
Barium	DUP	1727060-13	ND	ND		mg/kg			20		
	MS	1727060-13	ND	62.165	100.00	mg/kg		62.2		75 - 125	Q03
	MSD	1727060-13	ND	68.911	100.00	mg/kg	10.3	68.9	20	75 - 125	Q03
Beryllium	DUP	1727060-13	ND	ND		mg/kg			20		
	MS	1727060-13	ND	9.6619	10.000	mg/kg		96.6		75 - 125	
	MSD	1727060-13	ND	9.6781	10.000	mg/kg	0.2	96.8	20	75 - 125	
Cadmium	DUP	1727060-13	ND	ND		mg/kg			20		
	MS	1727060-13	ND	9.4581	10.000	mg/kg		94.6		75 - 125	
	MSD	1727060-13	ND	9.4045	10.000	mg/kg	0.6	94.0	20	75 - 125	
Chromium	DUP	1727060-13	1.0488	1.0040		mg/kg	4.4		20		
	MS	1727060-13	1.0488	98.758	100.00	mg/kg		97.7		75 - 125	
	MSD	1727060-13	1.0488	99.329	100.00	mg/kg	0.6	98.3	20	75 - 125	
Cobalt	DUP	1727060-13	ND	ND		mg/kg			20		
	MS	1727060-13	ND	96.737	100.00	mg/kg		96.7		75 - 125	
	MSD	1727060-13	ND	96.569	100.00	mg/kg	0.2	96.6	20	75 - 125	
Copper	DUP	1727060-13	0.56486	0.56427		mg/kg	0.1		20		J
	MS	1727060-13	0.56486	94.548	100.00	mg/kg		94.0		75 - 125	
	MSD	1727060-13	0.56486	94.626	100.00	mg/kg	0.1	94.1	20	75 - 125	
Lead	DUP	1727060-13	0.50296	ND		mg/kg			20		
	MS	1727060-13	0.50296	97.567	100.00	mg/kg		97.1		75 - 125	
	MSD	1727060-13	0.50296	97.900	100.00	mg/kg	0.3	97.4	20	75 - 125	
Molybdenum	DUP	1727060-13	0.61414	0.28358		mg/kg	73.6		20		J,A02
	MS	1727060-13	0.61414	92.092	100.00	mg/kg		91.5		75 - 125	
	MSD	1727060-13	0.61414	93.088	100.00	mg/kg	1.1	92.5	20	75 - 125	

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/04/2018 14:11  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Total Concentrations (TTLC)

### Quality Control Report - Precision & Accuracy

										Control Limits	
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J0385		Used client sample: N									
Nickel	DUP	1727060-13	0.26023	0.24977		mg/kg	4.1		20		J
	MS	1727060-13	0.26023	103.67	100.00	mg/kg		103		75 - 125	
	MSD	1727060-13	0.26023	103.63	100.00	mg/kg	0.0	103	20	75 - 125	
Selenium	DUP	1727060-13	ND	ND		mg/kg			20		
	MS	1727060-13	ND	9.9696	10.000	mg/kg		99.7		75 - 125	
	MSD	1727060-13	ND	10.324	10.000	mg/kg	3.5	103	20	75 - 125	
Silver	DUP	1727060-13	ND	ND		mg/kg			20		
	MS	1727060-13	ND	8.9564	10.000	mg/kg		89.6		75 - 125	
	MSD	1727060-13	ND	8.9524	10.000	mg/kg	0.0	89.5	20	75 - 125	
Thallium	DUP	1727060-13	ND	ND		mg/kg			20		
	MS	1727060-13	ND	107.26	100.00	mg/kg		107		75 - 125	
	MSD	1727060-13	ND	106.97	100.00	mg/kg	0.3	107	20	75 - 125	
Vanadium	DUP	1727060-13	30.077	30.515		mg/kg	1.4		20		
	MS	1727060-13	30.077	127.33	100.00	mg/kg		97.3		75 - 125	
	MSD	1727060-13	30.077	128.22	100.00	mg/kg	0.7	98.1	20	75 - 125	
Zinc	DUP	1727060-13	6.2507	6.0521		mg/kg	3.2		20		
	MS	1727060-13	6.2507	106.98	100.00	mg/kg		101		75 - 125	
	MSD	1727060-13	6.2507	106.38	100.00	mg/kg	0.6	100	20	75 - 125	

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**EMSL Analytical, Inc.**

464 McCormick Street San Leandro, CA 94577  
Tel/Fax: (510) 895-3675 / (510) 895-3680  
<http://www.EMSL.com / sanleandrolab@emsl.com>

EMSL Order: 091719157

Customer ID: BCLA50

Customer PO: 1726918

Project ID:

Attention: Molly Meyers  
BC Laboratories, Inc.  
4100 Atlas Court  
Bakersfield, CA 93308

Phone: (661) 327-4911

Fax: (661) 327-1918

Received Date: 10/02/2017 10:15 AM

Analysis Date: 10/04/2017

Collected Date: 09/20/2017

Project: 1726918

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020  
Method(s) using Polarized Light Microscopy**

Sample	Description	Appearance	% Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
1726918-01-Soil		Brown Non-Fibrous Homogeneous		45% Quartz 55% Non-fibrous (Other)	None Detected
091719157-0001	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1726918-01-Insulation		Gray Fibrous Homogeneous		10% Quartz 20% Matrix 20% Non-fibrous (Other)	50% Chrysotile
091719157-0001A					
1726918-02		Tan Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
091719157-0002	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1726918-03		Brown/Black Non-Fibrous Homogeneous		50% Quartz 50% Non-fibrous (Other)	None Detected
091719157-0003	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1726918-04		Brown/Black Non-Fibrous Homogeneous		50% Quartz 50% Non-fibrous (Other)	None Detected
091719157-0004	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1726918-05		Black Non-Fibrous Homogeneous		40% Quartz 30% Matrix 30% Non-fibrous (Other)	None Detected
091719157-0005					
1726918-06		Black Non-Fibrous Homogeneous		15% Quartz 50% Matrix 33% Non-fibrous (Other)	2% Amosite
091719157-0006					
1726918-07		Tan Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
091719157-0007	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1726918-08		Tan Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
091719157-0008	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1726918-09		Tan Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
091719157-0009	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1726918-10		Tan Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
091719157-0010	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1726918-11		Brown Non-Fibrous Homogeneous		50% Quartz 50% Non-fibrous (Other)	None Detected
091719157-0011	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1726918-12		Brown Non-Fibrous Homogeneous		50% Quartz 50% Non-fibrous (Other)	None Detected
091719157-0012	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				

Initial report from: 10/04/2017 12:01:31

ASB\_PLM\_0008\_0001 - 1.78 Printed: 10/04/2017 12:01 PM

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



Subcontract Report for 1726918 PDF File Name: wo\_1726918\_sub\_EMSLA.pdf Page 2 of 2



**EMSL Analytical, Inc.**

464 McCormick Street San Leandro, CA 94577

Tel/Fax: (510) 895-3675 / (510) 895-3680

<http://www.EMSL.com> / [sanleandrolab@emsl.com](mailto:sanleandrolab@emsl.com)

EMSL Order: 091719157

Customer ID: BCLA50

Customer PO: 1726918

Project ID:

Analyst(s)

Cecilia Yu (13)

Matthew Batongbacal  
or Other Approved Signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The limit of detection as stated in the method is 1%. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The test results contained within this report meet the requirements of NELAP unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from: 10/04/2017 12:01:31

ASB\_PLM\_0008\_0001 - 1.78 Printed: 10/4/2017 12:01 PM

Page 2 of 2

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October 16, 2017

**FAL Project ID: 10976**

Ms. Molly Meyers  
BC Laboratories  
4100 Atlas Court  
Bakersfield, CA 93308

Dear Ms. Meyers,

The following results are associated with Frontier Analytical Laboratory project **10976**. This corresponds to your subcontract order number **1726918**. One solid sample was received on 10/6/2017. This sample was extracted and analyzed by EPA Method 8290 for tetra through octa chlorinated dibenzo dioxins and furans. The Toxic Equivalency (TEQ) for your sample has been calculated using the 2005 World Health Organization's (WHO's) toxic equivalency factors (TEFs). BC Laboratories requested a turnaround time of fifteen business days for project **10976**.

The following report consists of an Analytical Data section and a Sample Receipt section. The Analytical Data section contains our sample tracking log, and the analytical results. The Sample Receipt section contains your chain of custody, our sample login form and a sample photo. The attached results are specifically for the sample referenced in this report only. These results meet all National Environmental Laboratory Accreditation Program (NELAP) requirements and shall not be reproduced except in full. Frontier Analytical Laboratory's State of Oregon NELAP certificate number is **4041** and our State of California ELAP certificate number is **2934**. This report has been emailed to you as a portable document format (PDF) file. A hardcopy of this report will not be sent to you unless specifically requested.

If you have any questions regarding project **10976**, please contact me at (916) 934-0900. Thank you for choosing Frontier Analytical Laboratory for your analytical testing needs.

Sincerely,

*Daniel P. Vickers*

Daniel P. Vickers  
Vice President

**FRONTIER ANALYTICAL LABORATORY**  
5172 Hillsdale Circle \* El Dorado Hills, CA 95762  
Tel (916) 934-0900 \* Fax (916) 934-0999  
[www.frontieranalytical.com](http://www.frontieranalytical.com)

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## Frontier Analytical Laboratory

### Sample Tracking Log

FAL Project ID: 10976

Received on: 10/06/2017

Project Due: 10/30/2017

Storage: R3

FAL Sample ID	Dup	Client Project ID	Client Sample ID	Requested Method	Matrix	Sampling Date	Sampling Time	Hold Time Due Date
10976-001-SA	0	1726918	1726918-05	EPA 8290 D/F	Solid	09/20/2017	11:50 am	10/20/2017

000002 of 000008

5172 Hillside Circle \* El Dorado Hills, CA 95762 \* Tel (916) 934-0900 \* Fax (916) 934-0999 \* www.frontieranalytical.com

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EPA Method 8290  
PCDD/FFAL ID: 10976-001-MB  
Client ID: Method Blank  
Matrix: Solid  
Batch No: X4265Date Extracted: 10-09-2017  
Date Received: NA  
Amount: 5.00 gICal: PCDDFAL4-9-18-17  
GC Column: DB5MS  
Units: pg/gAcquired: 10-10-2017  
2005 WHO TEQ: 0.0  
Basis: Dry Weight

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.193	-	-	0.0273				
1,2,3,7,8-PeCDD	ND	0.459	-	-	0.0570				
1,2,3,4,7,8-HxCDD	ND	0.636	-	-	0.0793				
1,2,3,6,7,8-HxCDD	ND	0.654	-	-	0.0940	Total TCDD	ND	0.193	
1,2,3,7,8,9-HxCDD	ND	0.595	-	-	0.0823	Total PeCDD	ND	0.459	
1,2,3,4,6,7,8-HpCDD	ND	0.691	-	-	0.0842	Total HxCDD	ND	0.654	
OCDD	ND	0.948	-	-	0.172	Total HpCDD	ND	0.691	
2,3,7,8-TCDF	ND	0.169	-	-	0.0269				
1,2,3,7,8-PeCDF	ND	0.420	-	-	0.0449				
2,3,4,7,8-PeCDF	ND	0.445	-	-	0.0468				
1,2,3,4,7,8-HxCDF	ND	0.316	-	-	0.0437				
1,2,3,6,7,8-HxCDF	ND	0.333	-	-	0.0417				
2,3,4,6,7,8-HxCDF	ND	0.335	-	-	0.0574				
1,2,3,7,8,9-HxCDF	ND	0.456	-	-	0.0657	Total TCDF	ND	0.169	
1,2,3,4,6,7,8-HpCDF	ND	0.332	-	-	0.0747	Total PeCDF	ND	0.445	
1,2,3,4,7,8,9-HpCDF	ND	0.443	-	-	0.0883	Total HxCDF	ND	0.456	
OCDF	ND	0.831	-	-	0.170	Total HpCDF	ND	0.443	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	89.2	40.0 - 135	
13C-1,2,3,7,8-PeCDD	95.9	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	96.0	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	91.1	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	102	40.0 - 135	
13C-OCDD	89.9	40.0 - 135	
13C-2,3,7,8-TCDF	85.0	40.0 - 135	
13C-1,2,3,7,8-PeCDF	84.1	40.0 - 135	
13C-2,3,4,7,8-PeCDF	88.0	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	103	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	95.6	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	101	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	107	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	110	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	123	40.0 - 135	
13C-OCDF	109	40.0 - 135	

## Cleanup Surrogate

37Cl-2,3,7,8-TCDD 106 50.0 - 150

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1  
B Analyte is present in Method Blank  
C Chemical Interference  
D Presence of Diphenyl Ethers  
DNQ Analyte concentration is below calibration range  
E Analyte concentration is above calibration range  
F Analyte confirmation on secondary column  
J Analyte concentration is below calibration range  
M Maximum possible concentration  
ND Analyte Not Detected at Detection Limit Level  
NP Not Provided  
P Pre-filtered through a Whatman 0.7um GF/F filter  
S Sample acceptance criteria not met  
X Matrix interferences  
\* Result taken from dilution or reinjection

Analyst:

Date: 10/13/2017

Reviewed By:

Date: 10/13/2017

000003 of 000008

5172 Hillside Circle \* El Dorado Hills, CA 95762 \* Tel (916) 934-0900 \* Fax (916) 934-0999 \* www.frontieranalytical.com

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EPA Method 8290  
PCDD/FFAL ID: 10976-001-OPR  
Client ID: OPR  
Matrix: Solid  
Batch No: X4265Date Extracted: 10-09-2017  
Date Received: NA  
Amount: 5.00 gICal: PCDDFAL4-9-18-17  
GC Column: DB5MS  
Units: ng/mlAcquired: 10-10-2017  
2005 WHO TEQ: NA

Compound	Conc	QC Limits	Qual
2,3,7,8-TCDD	11.6	7.00 - 13.0	
1,2,3,7,8-PeCDD	59.0	35.0 - 65.0	
1,2,3,4,7,8-HxCDD	58.1	35.0 - 65.0	
1,2,3,6,7,8-HxCDD	56.4	35.0 - 65.0	
1,2,3,7,8,9-HxCDD	54.2	35.0 - 65.0	
1,2,3,4,6,7,8-HpCDD	58.3	35.0 - 65.0	
OCDD	116	70.0 - 130	
2,3,7,8-TCDF	11.8	7.00 - 13.0	
1,2,3,7,8-PeCDF	59.6	35.0 - 65.0	
2,3,4,7,8-PeCDF	58.9	35.0 - 65.0	
1,2,3,4,7,8-HxCDF	56.9	35.0 - 65.0	
1,2,3,6,7,8-HxCDF	56.6	35.0 - 65.0	
2,3,4,6,7,8-HxCDF	57.6	35.0 - 65.0	
1,2,3,7,8,9-HxCDF	55.3	35.0 - 65.0	
1,2,3,4,6,7,8-HpCDF	57.5	35.0 - 65.0	
1,2,3,4,7,8,9-HpCDF	57.6	35.0 - 65.0	
OCDF	114	70.0 - 130	
Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	71.9	40.0 - 135	
13C-1,2,3,7,8-PeCDD	70.6	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	74.7	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	75.2	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	69.6	40.0 - 135	
13C-OCDD	63.0	40.0 - 135	
13C-2,3,7,8-TCDF	70.6	40.0 - 135	
13C-1,2,3,7,8-PeCDF	70.1	40.0 - 135	
13C-2,3,4,7,8-PeCDF	69.9	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	87.0	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	84.1	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	80.9	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	80.2	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	74.9	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	85.5	40.0 - 135	
13C-OCDF	75.7	40.0 - 135	
Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	85.6	50.0 - 150	

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NIP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- \* Result taken from dilution or reinjection

Analyst: 

Date: 10/13/2017

Reviewed By: 

Date: 10/13/2017

000004 of 000008

5172 Hillside Circle \* El Dorado Hills, CA 95762 \* Tel (916) 934-0900 \* Fax (916) 934-0999 \* www.frontieranalytical.com

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EPA Method 8290  
PCDD/FFAL ID: 10976-001-SA  
Client ID: 1726918-05  
Matrix: Solid  
Batch No: X4265Date Extracted: 10-09-2017  
Date Received: 10-06-2017  
Amount: 5.02 g  
% Solids: 93.65ICal: PCDDFAL4-9-18-17  
GC Column: DB5MS  
Units: pg/gAcquired: 10-10-2017  
2005 WHO TEQ: 11.3  
Basis: Dry Weight

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	1.07	-		1.07	0.0273				
1,2,3,7,8-PeCDD	1.73	-	J	1.73	0.0570				
1,2,3,4,7,8-HxCDD	1.73	-	J	0.173	0.0793				
1,2,3,6,7,8-HxCDD	7.16	-		0.716	0.0940	Total TCDD	2.64	-	
1,2,3,7,8,9-HxCDD	4.23	-	J	0.423	0.0823	Total PeCDD	9.68	-	
1,2,3,4,6,7,8-HpCDD	405	-		4.05	0.0842	Total HxCDD	43.9	-	
OCDD	6670	-		2.00	0.172	Total HpCDD	820	-	
2,3,7,8-TCDF	ND	0.192		-	0.0269				
1,2,3,7,8-PeCDF	ND	0.271		-	0.0449				
2,3,4,7,8-PeCDF	0.553	-	J	0.166	0.0468				
1,2,3,4,7,8-HxCDF	1.21	-	J	0.121	0.0437				
1,2,3,6,7,8-HxCDF	0.911	-	J	0.0911	0.0417				
2,3,4,6,7,8-HxCDF	1.56	-	J	0.156	0.0574				
1,2,3,7,8,9-HxCDF	ND	0.478		-	0.0657	Total TCDF	1.29	-	
1,2,3,4,6,7,8-HpCDF	49.0	-		0.490	0.0747	Total PeCDF	5.71	-	
1,2,3,4,7,8,9-HpCDF	3.93	-	J	0.0393	0.0883	Total HxCDF	37.8	-	
OCDF	336	-		0.101	0.170	Total HpCDF	237	-	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	98.3	40.0 - 135	
13C-1,2,3,7,8-PeCDD	96.8	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	98.8	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	86.0	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	102	40.0 - 135	
13C-OCDD	93.5	40.0 - 135	
13C-2,3,7,8-TCDF	78.0	40.0 - 135	
13C-1,2,3,7,8-PeCDF	79.5	40.0 - 135	
13C-2,3,4,7,8-PeCDF	79.6	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	87.4	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	81.2	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	88.2	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	97.3	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	90.7	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	105	40.0 - 135	
13C-OCDF	107	40.0 - 135	

## Cleanup Surrogate

37Cl-2,3,7,8-TCDD 120 50.0 - 150

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- \* Result taken from dilution or reinjection

Analyst:

Date: 10/13/2017

Reviewed By:

Date: 10/13/2017

000005 of 000008

5172 Hillside Circle \* El Dorado Hills, CA 95762 \* Tel (916) 934-0900 \* Fax (916) 934-0999 \* www.frontieranalytical.com

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



Subcontract Report for 1726918 PDF File Name: wo\_1726918\_sub\_FRNTL.pdf Page 6 of 8

SUBCONTRACT ORDER

BC Laboratories

1726918

10976  
000

SENDING LABORATORY:

BC Laboratories  
4100 Atlas Ct  
Bakersfield, CA 93308  
Phone: 661-327-4911  
Fax: 661-327-1918  
Project Manager: Molly Meyers

RECEIVING LABORATORY:

Frontier Analytical Laboratory SFRNTL-EINV  
5172 Hillside Circle  
El Dorado Hills, CA 95762  
Phone: (916) 934-0900  
Fax: (916) 934-0999

Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: 1726918-05	Solids	Sampled:09/20/17 11:50		
og8290s Full Scan FRNTL	10/04/17 17:00	10/20/17 11:50		
Containers Supplied:				

Released By  10.5.17 Date Received By  10-6-17 1100 Date

Released By \_\_\_\_\_ Date \_\_\_\_\_ Received By \_\_\_\_\_ Date \_\_\_\_\_ 000006 of 000008

Page 1 of 1

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**Frontier Analytical Laboratory****Sample Login Form**FAL Project ID: **10976**

Client:	BC Laboratories, Inc
Client Project ID:	1726918
Date Received:	10/06/2017
Time Received:	11:00 am
Received By:	KZ
Logged In By:	KZ
# of Samples Received:	1
Duplicates:	0
Storage Location:	R3

Method of Delivery:	California Overnight
Tracking Number:	C11235900269629
Shipping Container Received Intact	Yes
Custody seals(s) present?	No
Custody seals(s) intact?	No
Sample Arrival Temperature (C)	0
Cooling Method	Ice
Chain Of Custody Present?	Yes
Return Shipping Container To Client	Yes
Test aqueous sample for residual Chlorine	No
Sodium Thiosulfate Added	No
Adequate Sample Volume	Yes
Appropriate Sample Container	No
pH Range of Aqueous Sample	N/A
Anomalies or additional comments:	
Please note that the sample was received in a clear glass jar. NELAP requires samples be received in amber glass bottles or jars. Although this anomaly will not affect your results, we are required by NELAP to make a note of it. We will proceed with analysis unless directed otherwise by you.	

000007 of 000008

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Environmental Testing Laboratory Since 1949



Subcontract Report for 1726918 PDF File Name: wo\_1726918\_sub\_FRNTL.pdf Page 8 of 8



10976-001

**SUBCONTRACT ORDER**  
BC Laboratories  
1726918

**SENDING LABORATORY:**  
BC Laboratories  
4100 Atlas Ct  
Bakersfield, CA 93308  
Phone: (661) 327-4911  
Fax: (661) 327-1918  
Project Manager: Molly Meyers

**RECEIVING LABORATORY:**  
Frontier Analytical Laboratory SPINTEL-EINV  
5172 Hillside Circle  
El Dorado Hills, CA 95762  
Phone: (916) 934-0900  
Fax: (916) 934-0999

Analysis	Date	Expires	Laboratory ID	Comments
Sample ID: 1726918-05	10/04/17 17:00	10/20/17 11:50		
098290: Full Scan FRNTL				
Containers Supplied:				

Frontier Analytical Laboratory  
10976-001-SA  
Client ID: 1726918-05  
Storage: R3 (01 of 01)  
1726918-05 D  
HA-37-8  
X12: Clear Glass 250 ml (8 oz)

Received By: *[Signature]* Date: 10.5.17  
Received By: *Kathy Zee* Date: 10.17.17

2017/10/06

000008 of 000008

5172 Hillside Circle \* El Dorado Hills, CA 95762 \* Tel (916) 934-0900 \* Fax (916) 934-0999 \* www.frontieranalytical.com

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/04/2018 14:11  
**Project:** Former Northern Landfill  
**Project Number:** 185850429  
**Project Manager:** Kirk Henning

## Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit
A01	Detection and quantitation limits are raised due to sample dilution.
A02	The difference between duplicate readings is less than the quantitation limit.
A10	Detection and quantitation limits were raised due to matrix interference.
A17	Surrogate not reportable due to sample dilution.
A57	Chromatogram not typical of motor oil.
pH1:1	pH result reported on a 1:1 dilution of sample
Q02	Matrix spike precision is not within the control limits.
Q03	Matrix spike recovery(s) is(are) not within the control limits.
S09	The surrogate recovery on the sample for this compound was not within the control limits.



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



Date of Report: 04/02/2018

Kirk Henning

Stantec - SLO

3437 Empresa Drive, Suite A

Suite A

San Luis Obispo, CA 93401

Client Project: 185850429.300.0006

BCL Project: Former Northern Landfill

BCL Work Order: 1727086

Invoice ID: B283181, B297102

Enclosed are the results of analyses for samples received by the laboratory on 9/25/2017. If you have any questions concerning this report, please feel free to contact me.

Revised Report: This report supercedes Report ID 1000719075

Sincerely,

Contact Person: Molly Meyers

Client Service Rep

Stuart Buttram

Technical Director

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1727086 Page 1 of 5

# Chain of Custody Form

Page 1 of 2

Analysis Requested				Comments:	
Please refer to the back of this page for completion instructions and method legend.				will call for analyses	
Sample Matrix				Result Request **Surcharge	
<input type="checkbox"/> STD <input type="checkbox"/> 5 Day** <input type="checkbox"/> 2 Day** <input type="checkbox"/> 1 Day**					
Other				Notes	
Soil					
Sludge					
Drinking Water					
Ground Water					
Waste Water					
Other					

Sample #	Description	Date Sampled	Time Sampled
1	HA-28-3	09/25/17	07:50
2	HA-28-5		07:55
3	HA-28-8		08:00
4	HA-27-1		08:20
5	HA-27-3		08:25
6	HA-27-5		08:40
7	HA-27-8		08:50
8	HA-26-1		09:45
9	HA-26-3		09:50
10	HA-26-5		09:55
11	HA-26-8		10:00
12	HA-25-1		11:45
13	HA-25-3		11:50
14	HA-25-5		11:55

EDF Required? Geotracker		Global ID (Required for EDF)	
Yes	No	1. Relinquished By	2. Relinquished By
<input type="checkbox"/>	<input type="checkbox"/>		

Send Copy to State of CA? (EDT)		Global ID (Required for EDF)	
Yes	No	1. Relinquished By	2. Relinquished By
<input type="checkbox"/>	<input type="checkbox"/>		

Billing		System # (Required for EDT)	
Client:	Address:	1. Relinquished By	2. Relinquished By
Client: <u>USE Rates</u>	Address: <u>State Zip</u>		
City: <u>State Zip</u>	Attn: <u>State Zip</u>		
P.O. #:			

BC Laboratories, Inc. - 4100 Atlas Ct. - Bakersfield, CA 93308 - 661.327.4911 - Fax: 661.327.1918 - www.bclabs.com

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Chain of Custody and Cooler Receipt Form for 1727086 Page 3 of 5

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page <u>3</u> Of <u>5</u>							
Submission #: <u>17-27086</u>											
SHIPPING INFORMATION			SHIPPING CONTAINER		FREE LIQUID						
Fed Ex <input type="checkbox"/>	UPS <input type="checkbox"/>	Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/>	Ice Chest <input checked="" type="checkbox"/>	None <input type="checkbox"/> Box <input type="checkbox"/>	YES <input type="checkbox"/> NO <input type="checkbox"/>						
BC Lab Field Service <input checked="" type="checkbox"/> Other <input type="checkbox"/> (Specify) _____			Other <input type="checkbox"/> (Specify) _____		W / S						
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: _____											
Custody Seals: Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments: _____											
All samples received? Yes <input type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											
COC Received <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Emissivity: <u>0.98</u>	Container: <u>GLASS</u>	Thermometer ID: <u>208</u>	Date/Time: <u>9/25/2012</u>						
		Temperature: (A) <u>0.4</u> °C / (C) <u>0.1</u> °C	Analyst Init: <u>ESP</u>								
SAMPLE CONTAINERS		SAMPLE NUMBERS									
		1	2	3	4	5	6	7	8	9	10
QT PE UNPRES											
4oz / 8oz / 16oz PE UNPRES											
2oz Cr <sup>16</sup>											
QT INORGANIC CHEMICAL METALS											
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz											
PT CYANIDE											
PT NITROGEN FORMS											
PT TOTAL SULFIDE											
2oz NITRATE / NITRITE											
PT TOTAL ORGANIC CARBON											
PT CHEMICAL OXYGEN DEMAND											
P/A PHENOLICS											
40ml VOA VIAL TRAVEL BLANK											
40ml VOA VIAL											
QT EPA 1664											
PT ODOR											
RADIOLOGICAL											
BACTERIOLOGICAL											
40 ml VOA VIAL- 504											
QT EPA 508/608/808											
QT EPA 515.1/8150											
YT EPA 525											
YT EPA 525 TRAVEL BLANK											
0ml EPA 547											
0ml EPA 531.1											
0oz EPA 548											
TEPA 549											
TEPA 8015M											
TEPA 8270											
2 / 16oz / 32oz AMBER											
2 / 16oz / 32oz CLEAR											
ML SLEWVE											
B VIAL											
ASTIC BAG											
DLAR BAG											
BROUS IRON											
CORE											
ART KIT											
VMA CANISTER											
Comments: _____											
Sample Numbering Completed By: <u>MA</u> Date/Time: <u>9-26-12</u>											
Actual / C = Corrected											

Rev 21 05/23/2016  
(S:\WPDoc\WordPerfect\LAB DOCS\FORMS\LAB CHAIN OF CUSTODY FORM 2011)

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Chain of Custody and Cooler Receipt Form for 1727086 Page 4 of 5

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page 2 of 3							
Submission #: <u>17-27086</u>											
SHIPPING INFORMATION			SHIPPING CONTAINER		FREE LIQUID						
Fed Ex <input type="checkbox"/>	UPS <input type="checkbox"/>	Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/>	Ice Chest <input checked="" type="checkbox"/>	None <input type="checkbox"/> Box <input type="checkbox"/>	YES <input type="checkbox"/> NO <input type="checkbox"/>						
BC Lab Field Service <input checked="" type="checkbox"/> Other <input type="checkbox"/> (Specify) _____			Other <input type="checkbox"/> (Specify) _____		W / S						
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: _____											
Custody Seals: Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments: _____											
All samples received? Yes <input type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											
COC Received		Emissivity: <u>0.92</u>	Container: <u>CEGLASS</u>	Thermometer ID: <u>208</u>	Date/Time: <u>9/25/2012</u>						
<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Temperature: (A) <u>0.4</u> °C / (C) <u>32.1</u> °C		Analyst Init: <u>ESP</u>							
SAMPLE CONTAINERS		SAMPLE NUMBERS									
		1	2	3	4	5	6	7	8	9	10
QT PE UNPRES											
4oz / 8oz / 16oz PE UNPRES											
2oz Cr <sup>6+</sup>											
QT INORGANIC CHEMICAL METALS											
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz											
PT CYANIDE											
PT NITROGEN FORMS											
PT TOTAL SULFIDE											
2oz NITRATE / NITRITE											
PT TOTAL ORGANIC CARBON											
PT CHEMICAL OXYGEN DEMAND											
PIA PHENOLICS											
40ml VOA VIAL TRAVEL BLANK											
40ml VOA VIAL											
QT EPA 1664											
PT ODOR											
RADIOLOGICAL											
BACTERIOLOGICAL											
40 ml VOA VIAL- 504											
QT EPA 503/603/8080											
QT EPA 515.1/8150											
QT EPA 525											
QT EPA 525 TRAVEL BLANK											
40ml EPA 547											
40ml EPA 531.1											
40ml EPA 548											
PT EPA 549											
PT EPA 8015M											
PT EPA 8270											
16oz / 32oz AMBER											
16oz / 32oz JAR											
JL SLEEVE											
JB VIAL											
ASTIC BAG											
IDLAR BAG											
ERROUS IRON											
CORE											
ART KIT											
MMA CANISTER											
Comments: _____											
Sample Numbering Completed By: <u>MA</u> Date/Time: <u>9-26-12 11:27</u>											
Actual / C = Corrected											
Rev 21 05/23/2016											

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Chain of Custody and Cooler Receipt Form for 1727086 Page 5 of 5

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page <u>2 of 3</u>							
Submission #: <u>A-27086</u>											
<b>SHIPPING INFORMATION</b> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> BC Lab Field Service <input checked="" type="checkbox"/> Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		<b>SHIPPING CONTAINER</b> Ice Chest <input checked="" type="checkbox"/> None <input type="checkbox"/> Box <input type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		<b>FREE LIQUID</b> YES <input type="checkbox"/> NO <input type="checkbox"/> W / S _____							
<b>Refrigerant:</b> Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: _____											
<b>Custody Seals:</b> Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments: _____ Intact? Yes <input type="checkbox"/> No <input type="checkbox"/> Intact? Yes <input type="checkbox"/> No <input type="checkbox"/>											
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											
<b>COC Received</b> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Emissivity: <u>0.98</u> Container: <u>Colass</u> Thermometer ID: <u>208</u>		Date/Time: <u>9/25/2012</u> Analyst Init: <u>KSP</u>							
Temperature: (A) <u>1.0</u> °C / (C) <u>0.7</u> °C											
SAMPLE CONTAINERS		SAMPLE NUMBERS									
		1/2	3	4	5	6	7	8	9	10	
QT PE UNPRES											
4oz / 8oz / 16oz PE UNPRES											
2oz Cr <sup>6+</sup>											
QT INORGANIC CHEMICAL METALS											
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz											
PT CYANIDE											
PT NITROGEN FORMS											
PT TOTAL SULFIDE											
2oz NITRATE / NITRITE											
PT TOTAL ORGANIC CARBON											
PT CHEMICAL OXYGEN DEMAND											
PLA PHENOLICS											
40ml VOA VIAL TRAVEL BLANK											
40ml VOA VIAL											
QT EPA 1664											
PT ODOR											
RADIOLOGICAL											
BACTERIOLOGICAL											
50 ml VOA VIAL - 504											
JT EPA 508/603/8080											
JT EPA 515.1/8150											
JT EPA 525											
JT EPA 525 TRAVEL BLANK											
1ml EPA 547											
1ml EPA 531.1											
α EPA 548											
T EPA 549											
T EPA 8015M											
T EPA 8270											
1/16oz / 32oz AMBER											
1/16oz / 32oz JAR											
IL SLURVE											
3 VIAL											
ASTIC BAG											
LAR BAG											
TROUT IRON											
CORE											
RT KIT											
MA CANISTER											
Notes:											
Le Numbering Completed By: <u>jm</u>		Date/Time: <u>9-26-12</u>									
Actual / C = Corrected											

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**Reported:** 04/02/2018 11:13  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1727086-01	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727086-01	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-28-3
1727086-01	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/25/2017 21:12
1727086-01	<b>Sampling Date:</b>	09/25/2017 07:50
	<b>Sample Depth:</b>	---
1727086-01	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727086-01	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727086-01	<b>Location ID (FieldPoint):</b>	HA-28-3
	<b>Matrix:</b>	W
1727086-01	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727086-02	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727086-02	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-28-5
1727086-02	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/25/2017 21:12
1727086-02	<b>Sampling Date:</b>	09/25/2017 07:55
	<b>Sample Depth:</b>	---
1727086-02	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727086-02	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727086-02	<b>Location ID (FieldPoint):</b>	HA-28-5
	<b>Matrix:</b>	W
1727086-02	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727086-03	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727086-03	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-28-8
1727086-03	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/25/2017 21:12
1727086-03	<b>Sampling Date:</b>	09/25/2017 08:00
	<b>Sample Depth:</b>	---
1727086-03	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727086-03	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727086-03	<b>Location ID (FieldPoint):</b>	HA-28-8
	<b>Matrix:</b>	W
1727086-03	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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**Reported:** 04/02/2018 11:13  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1727086-04	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727086-04	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-27-1
1727086-04	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/25/2017 21:12
1727086-04	<b>Sampling Date:</b>	09/25/2017 08:20
	<b>Sample Depth:</b>	---
1727086-04	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727086-04	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727086-04	<b>Location ID (FieldPoint):</b>	HA-28-3
	<b>Matrix:</b>	W
1727086-04	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727086-05	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727086-05	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-27-3
1727086-05	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/25/2017 21:12
1727086-05	<b>Sampling Date:</b>	09/25/2017 08:25
	<b>Sample Depth:</b>	---
1727086-05	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727086-05	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727086-05	<b>Location ID (FieldPoint):</b>	HA-28-5
	<b>Matrix:</b>	W
1727086-05	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727086-06	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727086-06	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-27-5
1727086-06	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/25/2017 21:12
1727086-06	<b>Sampling Date:</b>	09/25/2017 08:40
	<b>Sample Depth:</b>	---
1727086-06	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727086-06	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727086-06	<b>Location ID (FieldPoint):</b>	HA-28-8
	<b>Matrix:</b>	W
1727086-06	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1727086-07	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727086-07	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-27-8
1727086-07	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/25/2017 21:12
1727086-07	<b>Sampling Date:</b>	09/25/2017 08:50
	<b>Sample Depth:</b>	---
1727086-07	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727086-07	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727086-07	<b>Location ID (FieldPoint):</b>	HA-27-1
	<b>Matrix:</b>	W
1727086-07	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727086-08	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727086-08	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-26-1
1727086-08	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/25/2017 21:12
1727086-08	<b>Sampling Date:</b>	09/25/2017 09:45
	<b>Sample Depth:</b>	---
1727086-08	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727086-08	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727086-08	<b>Location ID (FieldPoint):</b>	HA-27-3
	<b>Matrix:</b>	W
1727086-08	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727086-09	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727086-09	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-26-3
1727086-09	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/25/2017 21:12
1727086-09	<b>Sampling Date:</b>	09/25/2017 09:50
	<b>Sample Depth:</b>	---
1727086-09	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727086-09	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727086-09	<b>Location ID (FieldPoint):</b>	HA-27-5
	<b>Matrix:</b>	W
1727086-09	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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**Project:** Former Northern Landfill  
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**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1727086-10	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727086-10	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-26-5
1727086-10	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/25/2017 21:12
1727086-10	<b>Sampling Date:</b>	09/25/2017 09:55
	<b>Sample Depth:</b>	---
1727086-10	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727086-10	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727086-10	<b>Location ID (FieldPoint):</b>	HA-27-8
	<b>Matrix:</b>	W
1727086-10	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727086-11	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727086-11	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-26-8
1727086-11	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/25/2017 21:12
1727086-11	<b>Sampling Date:</b>	09/25/2017 10:00
	<b>Sample Depth:</b>	---
1727086-11	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727086-11	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727086-11	<b>Location ID (FieldPoint):</b>	HA-26-1
	<b>Matrix:</b>	W
1727086-11	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727086-12	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727086-12	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-25-1
1727086-12	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/25/2017 21:12
1727086-12	<b>Sampling Date:</b>	09/25/2017 11:45
	<b>Sample Depth:</b>	---
1727086-12	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727086-12	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727086-12	<b>Location ID (FieldPoint):</b>	HA-26-3
	<b>Matrix:</b>	W
1727086-12	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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**Reported:** 04/02/2018 11:13  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1727086-13	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727086-13	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-25-3
1727086-13	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/25/2017 21:12
1727086-13	<b>Sampling Date:</b>	09/25/2017 11:50
	<b>Sample Depth:</b>	---
1727086-13	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727086-13	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727086-13	<b>Location ID (FieldPoint):</b>	HA-26-5
	<b>Matrix:</b>	W
1727086-13	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727086-14	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727086-14	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-25-5
1727086-14	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/25/2017 21:12
1727086-14	<b>Sampling Date:</b>	09/25/2017 11:55
	<b>Sample Depth:</b>	---
1727086-14	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727086-14	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727086-14	<b>Location ID (FieldPoint):</b>	HA-26-8
	<b>Matrix:</b>	W
1727086-14	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727086-15	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727086-15	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-25-8
1727086-15	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/25/2017 21:12
1727086-15	<b>Sampling Date:</b>	09/25/2017 12:55
	<b>Sample Depth:</b>	---
1727086-15	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727086-15	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727086-15	<b>Location ID (FieldPoint):</b>	HA-25-1
	<b>Matrix:</b>	W
1727086-15	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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**Reported:** 04/02/2018 11:13  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1727086-16	<b>COC Number:</b> --- <b>Project Number:</b> Former Northern Landfill <b>Sampling Location:</b> --- <b>Sampling Point:</b> HA-24-1 <b>Sampled By:</b> SISL	<b>Receive Date:</b> 09/25/2017 21:12 <b>Sampling Date:</b> 09/25/2017 13:25 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Solids <b>Sample Type:</b> Soil Delivery Work Order: Global ID: Location ID (FieldPoint): HA-25-3 Matrix: W Sample QC Type (SACode): CS Cooler ID:
1727086-17	<b>COC Number:</b> --- <b>Project Number:</b> Former Northern Landfill <b>Sampling Location:</b> --- <b>Sampling Point:</b> HA-24-3 <b>Sampled By:</b> SISL	<b>Receive Date:</b> 09/25/2017 21:12 <b>Sampling Date:</b> 09/25/2017 13:30 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Solids <b>Sample Type:</b> Soil Delivery Work Order: Global ID: Location ID (FieldPoint): HA-25-5 Matrix: W Sample QC Type (SACode): CS Cooler ID:
1727086-18	<b>COC Number:</b> --- <b>Project Number:</b> Former Northern Landfill <b>Sampling Location:</b> --- <b>Sampling Point:</b> HA-24-5 <b>Sampled By:</b> SISL	<b>Receive Date:</b> 09/25/2017 21:12 <b>Sampling Date:</b> 09/25/2017 13:35 <b>Sample Depth:</b> --- <b>Lab Matrix:</b> Solids <b>Sample Type:</b> Soil Delivery Work Order: Global ID: Location ID (FieldPoint): HA-25-8 Matrix: W Sample QC Type (SACode): CS Cooler ID:

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**Reported:** 04/02/2018 11:13  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727086-01	<b>Client Sample Name:</b>	Former Northern Landfill, HA-28-3, 9/25/2017 7:50:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	64.9	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 11:30	10/06/17 23:23	AS1	GC-13	0.997	BJ0322

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**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727086-02	<b>Client Sample Name:</b>	Former Northern Landfill, HA-28-5, 9/25/2017 7:55:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	54.2	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 11:30	10/06/17 23:00	AS1	GC-13	1	BJ0322

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**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727086-03	<b>Client Sample Name:</b>	Former Northern Landfill, HA-28-8, 9/25/2017 8:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	79.7	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 11:30	10/06/17 22:37	AS1	GC-13	0.987	BJ0322

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**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727086-04	<b>Client Sample Name:</b>	Former Northern Landfill, HA-27-1, 9/25/2017 8:20:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	400	100	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	200	24	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>2300</b>	<b>mg/kg</b>	<b>400</b>	<b>130</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	79.8	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 11:30	10/06/17 19:58	AS1	GC-13	20	BJ0322

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**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727086-05	<b>Client Sample Name:</b>	Former Northern Landfill, HA-27-3, 9/25/2017 8:25:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	430	110	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	210	26	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>2300</b>	<b>mg/kg</b>	<b>430</b>	<b>140</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	96.4	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 11:30	10/06/17 19:35	AS1	GC-13	21.429	BJ0322

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727086-06	<b>Client Sample Name:</b>	Former Northern Landfill, HA-27-5, 9/25/2017 8:40:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>210</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	86.2	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 11:30	10/06/17 21:05	AS1	GC-13	1.014	BJ0322

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727086-07	<b>Client Sample Name:</b>	Former Northern Landfill, HA-27-8, 9/25/2017 8:50:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>30</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	44.2	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 11:30	10/08/17 08:51	AS1	GC-13	1.010	BJ0322

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## Organochlorine Pesticides and PCB's (EPA Method 8080)

BCL Sample ID: 1727086-08		Client Sample Name: Former Northern Landfill, HA-26-1, 9/25/2017 9:45:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Aldrin	ND	mg/kg	0.068	0.0046	EPA-8080	ND	A10	1
alpha-BHC	ND	mg/kg	0.068	0.018	EPA-8080	ND	A10	1
beta-BHC	ND	mg/kg	0.068	0.020	EPA-8080	ND	A10	1
delta-BHC	ND	mg/kg	0.068	0.0064	EPA-8080	ND	A10	1
gamma-BHC (Lindane)	ND	mg/kg	0.068	0.011	EPA-8080	ND	A10	1
Chlordane (Technical)	ND	mg/kg	6.8	0.23	EPA-8080	ND	A10	1
4,4'-DDD	ND	mg/kg	0.068	0.029	EPA-8080	ND	A10	1
4,4'-DDE	ND	mg/kg	0.068	0.0027	EPA-8080	ND	A10	1
4,4'-DDT	ND	mg/kg	0.068	0.013	EPA-8080	ND	A10	1
Dieldrin	ND	mg/kg	0.068	0.011	EPA-8080	ND	A10	1
Endosulfan I	ND	mg/kg	0.068	0.0030	EPA-8080	ND	A10	1
Endosulfan II	ND	mg/kg	0.068	0.019	EPA-8080	ND	A10	1
Endosulfan sulfate	ND	mg/kg	0.068	0.046	EPA-8080	ND	A10	1
Endrin	ND	mg/kg	0.068	0.012	EPA-8080	ND	A10	1
Endrin aldehyde	ND	mg/kg	0.068	0.031	EPA-8080	ND	A10	1
Heptachlor	ND	mg/kg	0.068	0.0049	EPA-8080	ND	A10	1
Heptachlor epoxide	ND	mg/kg	0.068	0.0023	EPA-8080	ND	A10	1
Methoxychlor	ND	mg/kg	0.068	0.029	EPA-8080	ND	A10	1
Toxaphene	ND	mg/kg	6.8	1.3	EPA-8080	ND	A10	1
PCB-1016	ND	mg/kg	1.4	0.53	EPA-8080	ND	A10	1
PCB-1221	ND	mg/kg	1.4	0.98	EPA-8080	ND	A10	1
PCB-1232	ND	mg/kg	1.4	1.0	EPA-8080	ND	A10	1
PCB-1242	ND	mg/kg	1.4	0.57	EPA-8080	ND	A10	1
PCB-1248	ND	mg/kg	1.4	0.95	EPA-8080	ND	A10	1
PCB-1254	ND	mg/kg	1.4	0.44	EPA-8080	ND	A10	1
PCB-1260	ND	mg/kg	1.4	0.40	EPA-8080	ND	A10	1
Total PCB's (Summation)	ND	mg/kg	1.4	0.68	EPA-8080	ND	A10	1
TCMX (Surrogate)	51.6	%	20 - 130 (LCL - UCL)		EPA-8080		A10	1
Decachlorobiphenyl (Surrogate)	105	%	40 - 130 (LCL - UCL)		EPA-8080		A10	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8080	09/29/17 10:30	09/29/17 18:19	HKS	GC-17	136.36	B[12784

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## Organo-Phosphorus Pesticide Analysis (EPA Method 8141A)

BCL Sample ID: 1727086-08		Client Sample Name: Former Northern Landfill, HA-26-1, 9/25/2017 9:45:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Azinphos methyl	ND	mg/kg	0.30	0.22	EPA-8141A	ND		1
Bolstar	ND	mg/kg	0.30	0.066	EPA-8141A	ND		1
Chlorpyrifos	ND	mg/kg	0.30	0.042	EPA-8141A	ND		1
Coumaphos	ND	mg/kg	0.30	0.24	EPA-8141A	ND		1
Demeton O/S	ND	mg/kg	0.30	0.10	EPA-8141A	ND		1
Diazinon	ND	mg/kg	0.30	0.072	EPA-8141A	ND		1
Dichlorvos	ND	mg/kg	0.30	0.027	EPA-8141A	ND		1
Disulfoton	ND	mg/kg	0.30	0.057	EPA-8141A	ND		1
Ethoprop	ND	mg/kg	0.30	0.036	EPA-8141A	ND		1
Fensulfothion	ND	mg/kg	0.30	0.17	EPA-8141A	ND		1
Fenthion	ND	mg/kg	0.30	0.063	EPA-8141A	ND		1
Merphos	ND	mg/kg	0.30	0.057	EPA-8141A	ND		1
Methyl parathion	ND	mg/kg	0.30	0.075	EPA-8141A	ND		1
Mevinphos	ND	mg/kg	0.30	0.072	EPA-8141A	ND		1
Naled	ND	mg/kg	0.30	0.13	EPA-8141A	ND		1
Phorate	ND	mg/kg	0.30	0.078	EPA-8141A	ND		1
Ronnel (Fenchlorphos)	ND	mg/kg	0.30	0.042	EPA-8141A	ND		1
Stirophos (Tetrachlorvinphos)	ND	mg/kg	0.30	0.060	EPA-8141A	ND		1
Tokuthion (Prothiofos)	ND	mg/kg	0.30	0.051	EPA-8141A	ND		1
Trichloronate	ND	mg/kg	0.30	0.039	EPA-8141A	ND		1
Triphenylphosphate (Surrogate)	41.4	%	40 - 120 (LCL - UCL)		EPA-8141A			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8141A	09/28/17 08:00	09/29/17 14:13	RSM	GC-18	30	B[12698

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## Chlorinated Herbicides (EPA Method 8151A)

BCL Sample ID: 1727086-08		Client Sample Name: Former Northern Landfill, HA-26-1, 9/25/2017 9:45:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
2,4-D	ND	mg/kg	0.55	0.16	EPA-8151A	ND		1
2,4-DB	ND	mg/kg	1.1	0.46	EPA-8151A	ND		1
Dalapon	ND	mg/kg	1.4	0.93	EPA-8151A	ND		1
Dicamba	ND	mg/kg	0.055	0.044	EPA-8151A	ND		1
Dichloroprop	ND	mg/kg	0.55	0.15	EPA-8151A	ND		1
Dinoseb	ND	mg/kg	0.19	0.065	EPA-8151A	ND		1
2,4,5-T	ND	mg/kg	0.082	0.035	EPA-8151A	ND		1
2,4,5-TP (Silvex)	ND	mg/kg	0.082	0.033	EPA-8151A	ND		1
2,4-Dichlorophenylacetic acid (Surrogate)	8.5	%	40 - 120 (LCL - UCL)		EPA-8151A		S09	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8151A	09/28/17 08:30	09/29/17 15:18	MSB	GC-8	27.273	B I2744

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## Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1727086-08		Client Sample Name: Former Northern Landfill, HA-26-1, 9/25/2017 9:45:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
Bromobenzene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
Bromochloromethane	ND	mg/kg	0.0050	0.00092	EPA-8260B	ND		1
Bromodichloromethane	ND	mg/kg	0.0050	0.00084	EPA-8260B	ND		1
Bromoform	ND	mg/kg	0.0050	0.0015	EPA-8260B	ND		1
Bromomethane	ND	mg/kg	0.0050	0.0016	EPA-8260B	ND		1
n-Butylbenzene	ND	mg/kg	0.0050	0.0015	EPA-8260B	ND		1
sec-Butylbenzene	0.0017	mg/kg	0.0050	0.0012	EPA-8260B	ND	J	1
tert-Butylbenzene	ND	mg/kg	0.0050	0.0012	EPA-8260B	ND		1
Carbon tetrachloride	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
Chlorobenzene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
Chloroethane	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
Chloroform	ND	mg/kg	0.0050	0.00063	EPA-8260B	ND		1
Chloromethane	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
2-Chlorotoluene	ND	mg/kg	0.0050	0.0018	EPA-8260B	ND		1
4-Chlorotoluene	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
Dibromochloromethane	ND	mg/kg	0.0050	0.00099	EPA-8260B	ND		1
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0050	0.0017	EPA-8260B	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0050	0.0010	EPA-8260B	ND		1
Dibromomethane	ND	mg/kg	0.0050	0.0018	EPA-8260B	ND		1
1,2-Dichlorobenzene	ND	mg/kg	0.0050	0.00081	EPA-8260B	ND		1
1,3-Dichlorobenzene	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
1,4-Dichlorobenzene	ND	mg/kg	0.0050	0.0015	EPA-8260B	ND		1
Dichlorodifluoromethane	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
1,1-Dichloroethane	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0050	0.00085	EPA-8260B	ND		1
1,1-Dichloroethene	ND	mg/kg	0.0050	0.0012	EPA-8260B	ND		1
cis-1,2-Dichloroethene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
trans-1,2-Dichloroethene	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
1,2-Dichloropropane	ND	mg/kg	0.0050	0.00081	EPA-8260B	ND		1
1,3-Dichloropropane	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
2,2-Dichloropropane	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
1,1-Dichloropropene	ND	mg/kg	0.0050	0.0012	EPA-8260B	ND		1

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**Project Manager:** Kirk Henning

## Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1727086-08		Client Sample Name: Former Northern Landfill, HA-26-1, 9/25/2017 9:45:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
cis-1,3-Dichloropropene	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
trans-1,3-Dichloropropene	ND	mg/kg	0.0050	0.0012	EPA-8260B	ND		1
<b>Ethylbenzene</b>	<b>0.0024</b>	<b>mg/kg</b>	<b>0.0050</b>	<b>0.0015</b>	<b>EPA-8260B</b>	ND	J	1
Hexachlorobutadiene	ND	mg/kg	0.0050	0.0017	EPA-8260B	ND		1
<b>Isopropylbenzene</b>	<b>0.0019</b>	<b>mg/kg</b>	<b>0.0050</b>	<b>0.0013</b>	<b>EPA-8260B</b>	ND	J	1
<b>p-Isopropyltoluene</b>	<b>0.0025</b>	<b>mg/kg</b>	<b>0.0050</b>	<b>0.0013</b>	<b>EPA-8260B</b>	ND	J	1
Methylene chloride	ND	mg/kg	0.010	0.0024	EPA-8260B	ND		1
Methyl t-butyl ether	ND	mg/kg	0.0050	0.00050	EPA-8260B	ND		1
Naphthalene	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
<b>n-Propylbenzene</b>	<b>0.0019</b>	<b>mg/kg</b>	<b>0.0050</b>	<b>0.0013</b>	<b>EPA-8260B</b>	ND	J	1
Styrene	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
Tetrachloroethene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
Toluene	ND	mg/kg	0.0050	0.0012	EPA-8260B	ND		1
1,2,3-Trichlorobenzene	ND	mg/kg	0.0050	0.0021	EPA-8260B	ND		1
1,2,4-Trichlorobenzene	ND	mg/kg	0.0050	0.0020	EPA-8260B	ND		1
1,1,1-Trichloroethane	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
1,1,2-Trichloroethane	ND	mg/kg	0.0050	0.00077	EPA-8260B	ND		1
Trichloroethene	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
Trichlorofluoromethane	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
1,2,3-Trichloropropane	ND	mg/kg	0.0050	0.0016	EPA-8260B	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
<b>1,2,4-Trimethylbenzene</b>	<b>0.0079</b>	<b>mg/kg</b>	<b>0.0050</b>	<b>0.0013</b>	<b>EPA-8260B</b>	ND		1
<b>1,3,5-Trimethylbenzene</b>	<b>0.0047</b>	<b>mg/kg</b>	<b>0.0050</b>	<b>0.0015</b>	<b>EPA-8260B</b>	ND	J	1
Vinyl chloride	ND	mg/kg	0.0050	0.0016	EPA-8260B	ND		1
<b>Total Xylenes</b>	<b>0.0089</b>	<b>mg/kg</b>	<b>0.010</b>	<b>0.0034</b>	<b>EPA-8260B</b>	ND	J	1
<b>p- &amp; m-Xylenes</b>	<b>0.0040</b>	<b>mg/kg</b>	<b>0.0050</b>	<b>0.0022</b>	<b>EPA-8260B</b>	ND	J	1
<b>o-Xylene</b>	<b>0.0048</b>	<b>mg/kg</b>	<b>0.0050</b>	<b>0.0012</b>	<b>EPA-8260B</b>	ND	J	1
1,2-Dichloroethane-d4 (Surrogate)	108	%	70 - 121 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	94.7	%	81 - 117 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	96.7	%	74 - 121 (LCL - UCL)		EPA-8260B			1

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**Project Manager:** Kirk Henning

## Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1727086-08		<b>Client Sample Name:</b> Former Northern Landfill, HA-26-1, 9/25/2017 9:45:00AM					
Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	09/28/17 06:00	10/06/17 10:07	ADC	MS-V2	1	B[12607

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**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

BCL Sample ID: 1727086-08		Client Sample Name: Former Northern Landfill, HA-26-1, 9/25/2017 9:45:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Acenaphthene	ND	mg/kg	0.90	0.36	EPA-8270C-SIM	ND		1
Acenaphthylene	ND	mg/kg	0.90	0.33	EPA-8270C-SIM	ND		1
Anthracene	1.8	mg/kg	0.90	0.36	EPA-8270C-SIM	ND		1
Benzo[a]anthracene	1.5	mg/kg	0.90	0.33	EPA-8270C-SIM	ND		1
Benzo[b]fluoranthene	ND	mg/kg	0.90	0.28	EPA-8270C-SIM	ND		1
Benzo[k]fluoranthene	ND	mg/kg	0.90	0.33	EPA-8270C-SIM	ND		1
Benzo[a]pyrene	1.6	mg/kg	0.90	0.28	EPA-8270C-SIM	ND		1
Benzo[g,h,i]perylene	3.7	mg/kg	0.90	0.33	EPA-8270C-SIM	ND		1
Chrysene	3.1	mg/kg	0.90	0.29	EPA-8270C-SIM	ND		1
Dibenzo[a,h]anthracene	ND	mg/kg	0.90	0.30	EPA-8270C-SIM	ND		1
Fluoranthene	ND	mg/kg	0.90	0.42	EPA-8270C-SIM	ND		1
Fluorene	ND	mg/kg	0.90	0.33	EPA-8270C-SIM	ND		1
Indeno[1,2,3-cd]pyrene	ND	mg/kg	0.90	0.28	EPA-8270C-SIM	ND		1
Naphthalene	2.6	mg/kg	0.90	0.33	EPA-8270C-SIM	ND		1
Phenanthrene	1.5	mg/kg	0.90	0.36	EPA-8270C-SIM	ND		1
Pyrene	ND	mg/kg	0.90	0.45	EPA-8270C-SIM	ND		1
Nitrobenzene-d5 (Surrogate)	37.5	%	30 - 110 (LCL - UCL)		EPA-8270C-SIM			1
2-Fluorobiphenyl (Surrogate)	45.0	%	40 - 120 (LCL - UCL)		EPA-8270C-SIM			1
p-Terphenyl-d14 (Surrogate)	50.0	%	30 - 120 (LCL - UCL)		EPA-8270C-SIM			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8270C-SIM	09/29/17 11:00	10/03/17 14:11	MSB	MS-B7	300	BJ0320

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**Reported:** 04/02/2018 11:13  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727086-08	<b>Client Sample Name:</b>	Former Northern Landfill, HA-26-1, 9/25/2017 9:45:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	2700	680	EPA-8015B/FFP	ND	A01	1
TPH - Diesel (FFP)	ND	mg/kg	1400	160	EPA-8015B/FFP	ND	A01	1
<b>TPH - Motor Oil</b>	<b>13000</b>	<b>mg/kg</b>	<b>2700</b>	<b>890</b>	<b>EPA-8015B/FFP</b>	ND	<b>A01</b>	1
Tetracosane (Surrogate)	49.9	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		A01	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 11:30	10/06/17 11:22	AS1	GC-13	136.36	BJ0322

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**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Chemical Analysis

<b>BCL Sample ID:</b>	1727086-08	<b>Client Sample Name:</b>	Former Northern Landfill, HA-26-1, 9/25/2017 9:45:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Cyanide	0.73	mg/kg	0.50	0.15	EPA-9012	ND		1
pH	7.32	pH Units	0.05	0.05	EPA-9045D	ND	pH1:1	2
pH Measurement Temperature	19.2	C	0.1	0.1	EPA-9045D	ND		2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9012	10/02/17 09:48	10/04/17 09:05	RCC	KONE-1	0.980	BJ0027
2	EPA-9045D	10/03/17 10:30	10/03/17 10:30	DIW	PH10	1	BJ0223

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**Project:** Former Northern Landfill  
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**Project Manager:** Kirk Henning

## Total Concentrations (TTLIC)

BCL Sample ID: 1727086-08		Client Sample Name: Former Northern Landfill, HA-26-1, 9/25/2017 9:45:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Antimony	ND	mg/kg	5.0	0.33	EPA-6010B	ND		1
Arsenic	1.4	mg/kg	1.0	0.40	EPA-6010B	ND		1
Barium	14	mg/kg	0.50	0.18	EPA-6010B	ND		2
Beryllium	0.16	mg/kg	0.50	0.047	EPA-6010B	ND	J	2
Cadmium	0.55	mg/kg	0.50	0.052	EPA-6010B	ND		1
Chromium	20	mg/kg	0.50	0.050	EPA-6010B	ND		2
Total Hexavalent Chromium	2.4	mg/kg	1.0	0.30	EPA-7199	ND		3
Cobalt	2.9	mg/kg	2.5	0.098	EPA-6010B	ND		1
Copper	7.2	mg/kg	1.0	0.050	EPA-6010B	0.077		2
Lead	9.7	mg/kg	2.5	0.28	EPA-6010B	ND		2
Mercury	0.13	mg/kg	0.16	0.019	EPA-7471A	ND	J	4
Molybdenum	24	mg/kg	2.5	0.050	EPA-6010B	ND		2
Nickel	130	mg/kg	0.50	0.15	EPA-6010B	ND		2
Selenium	1.1	mg/kg	1.0	0.98	EPA-6010B	ND		1
Silver	ND	mg/kg	0.50	0.067	EPA-6010B	ND		1
Thallium	ND	mg/kg	5.0	0.64	EPA-6010B	ND		2
Vanadium	230	mg/kg	0.50	0.11	EPA-6010B	ND		2
Zinc	33	mg/kg	2.5	0.087	EPA-6010B	0.21		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	10/09/17 11:20	10/09/17 22:40	JCC	PE-OP3	0.980	B[J0797
2	EPA-6010B	10/09/17 11:20	10/10/17 13:55	JCC	PE-OP3	0.980	B[J0797
3	EPA-7199	10/04/17 08:55	10/05/17 16:52	EMW	IC-4	1	B[J0037
4	EPA-7471A	10/03/17 10:45	10/03/17 14:05	MEV	CETAC2	1.025	B[J0196

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**Project:** Former Northern Landfill  
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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727086-09	<b>Client Sample Name:</b>	Former Northern Landfill, HA-26-3, 9/25/2017 9:50:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	430	110	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	210	26	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>210</b>	<b>mg/kg</b>	<b>430</b>	<b>140</b>	<b>EPA-8015B/FFP</b>	ND	<b>J</b>	<b>1</b>
Tetracosane (Surrogate)	68.4	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 11:30	10/06/17 16:12	AS1	GC-13	21.429	BJ0322

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**Project Manager:** Kirk Henning

## Total Concentrations (TTLIC)

BCL Sample ID: 1727086-09		Client Sample Name: Former Northern Landfill, HA-26-3, 9/25/2017 9:50:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Antimony	ND	mg/kg	5.0	0.33	EPA-6010B	ND		1
Arsenic	1.8	mg/kg	1.0	0.40	EPA-6010B	ND		1
Barium	15	mg/kg	0.50	0.18	EPA-6010B	ND		1
Beryllium	0.13	mg/kg	0.50	0.047	EPA-6010B	ND	J	1
Cadmium	0.21	mg/kg	0.50	0.052	EPA-6010B	ND	J	1
Chromium	8.8	mg/kg	0.50	0.050	EPA-6010B	0.16		1
Total Hexavalent Chromium	0.60	mg/kg	1.0	0.30	EPA-7199	ND	J,S05	2
Cobalt	1.3	mg/kg	2.5	0.098	EPA-6010B	ND	J	1
Copper	2.4	mg/kg	1.0	0.050	EPA-6010B	ND		1
Lead	2.3	mg/kg	2.5	0.28	EPA-6010B	ND	J	1
Mercury	ND	mg/kg	0.16	0.019	EPA-7471A	ND	S05	3
Molybdenum	2.8	mg/kg	2.5	0.050	EPA-6010B	0.059		1
Nickel	7.6	mg/kg	0.50	0.15	EPA-6010B	ND		1
Selenium	ND	mg/kg	1.0	0.98	EPA-6010B	ND		1
Silver	ND	mg/kg	0.50	0.067	EPA-6010B	ND		1
Thallium	ND	mg/kg	5.0	0.64	EPA-6010B	ND		1
Vanadium	14	mg/kg	0.50	0.11	EPA-6010B	ND		1
Zinc	15	mg/kg	2.5	0.087	EPA-6010B	1.1		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	03/02/18 18:35	03/05/18 12:45	JCC	PE-OP3	1	B006562
2	EPA-7199	03/05/18 10:05	03/06/18 15:18	SAV	IC-4	1	B006616
3	EPA-7471A	03/02/18 10:55	03/05/18 14:10	JP1	CETAC2	0.992	B006519

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727086-10	<b>Client Sample Name:</b>	Former Northern Landfill, HA-26-5, 9/25/2017 9:55:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>38</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	38.6	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 11:30	10/08/17 09:15	AS1	GC-13	1.014	BJ0322

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727086-11	<b>Client Sample Name:</b>	Former Northern Landfill, HA-26-8, 9/25/2017 10:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>44</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	97.6	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 11:30	10/06/17 17:42	AS1	GC-13	0.993	BJ0322

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## Total Petroleum Hydrocarbons

BCL Sample ID: 1727086-12		Client Sample Name: Former Northern Landfill, HA-25-1, 9/25/2017 11:45:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	400	100	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	200	24	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	400	130	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	94.2	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 11:30	10/06/17 20:43	AS1	GC-13	20	BJ0322

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## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727086-13	<b>Client Sample Name:</b>	Former Northern Landfill, HA-25-3, 9/25/2017 11:50:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	430	110	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	210	26	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>1800</b>	<b>mg/kg</b>	<b>430</b>	<b>140</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	103	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 11:30	10/06/17 20:20	AS1	GC-13	21.429	BJ0322

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## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727086-14	<b>Client Sample Name:</b>	Former Northern Landfill, HA-25-5, 9/25/2017 11:55:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	460	120	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	230	28	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>510</b>	<b>mg/kg</b>	<b>460</b>	<b>150</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	89.8	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 11:30	10/06/17 18:28	AS1	GC-13	23.077	BJ0322

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## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727086-15	<b>Client Sample Name:</b>	Former Northern Landfill, HA-25-8, 9/25/2017 12:55:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>39</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	79.8	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 11:30	10/06/17 18:05	AS1	GC-13	1.003	BJ0322

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**Project:** Former Northern Landfill  
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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727086-16	<b>Client Sample Name:</b>	Former Northern Landfill, HA-24-1, 9/25/2017 1:25:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	430	110	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	210	26	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>3100</b>	<b>mg/kg</b>	<b>430</b>	<b>140</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	76.9	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 11:30	10/06/17 19:13	AS1	GC-13	21.429	BJ0322

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## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727086-17	<b>Client Sample Name:</b>	Former Northern Landfill, HA-24-3, 9/25/2017 1:30:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	460	120	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	230	28	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>2000</b>	<b>mg/kg</b>	<b>460</b>	<b>150</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	65.7	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 11:30	10/06/17 18:50	AS1	GC-13	23.077	BJ0322

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**Reported:** 04/02/2018 11:13  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727086-18	<b>Client Sample Name:</b>	Former Northern Landfill, HA-24-5, 9/25/2017 1:35:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	40	10	EPA-8015B/FFP	ND	A01	1
TPH - Diesel (FFP)	ND	mg/kg	20	2.4	EPA-8015B/FFP	ND	A01	1
<b>TPH - Motor Oil</b>	<b>400</b>	<b>mg/kg</b>	<b>40</b>	<b>13</b>	<b>EPA-8015B/FFP</b>	ND	<b>A01</b>	1
Tetracosane (Surrogate)	83.4	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		A01	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 11:30	10/06/17 10:59	AS1	GC-13	2	BJ0322

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## Organochlorine Pesticides and PCB's (EPA Method 8080)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[I2784</b>						
Aldrin	B[I2784-BLK1	ND	mg/kg	0.00050	0.000034	
alpha-BHC	B[I2784-BLK1	ND	mg/kg	0.00050	0.00013	
beta-BHC	B[I2784-BLK1	ND	mg/kg	0.00050	0.00015	
delta-BHC	B[I2784-BLK1	ND	mg/kg	0.00050	0.000047	
gamma-BHC (Lindane)	B[I2784-BLK1	ND	mg/kg	0.00050	0.000082	
Chlordane (Technical)	B[I2784-BLK1	ND	mg/kg	0.050	0.0017	
4,4'-DDD	B[I2784-BLK1	ND	mg/kg	0.00050	0.00021	
4,4'-DDE	B[I2784-BLK1	ND	mg/kg	0.00050	0.000020	
4,4'-DDT	B[I2784-BLK1	ND	mg/kg	0.00050	0.000093	
Dieldrin	B[I2784-BLK1	ND	mg/kg	0.00050	0.000079	
Endosulfan I	B[I2784-BLK1	ND	mg/kg	0.00050	0.000022	
Endosulfan II	B[I2784-BLK1	ND	mg/kg	0.00050	0.00014	
Endosulfan sulfate	B[I2784-BLK1	ND	mg/kg	0.00050	0.00034	
Endrin	B[I2784-BLK1	ND	mg/kg	0.00050	0.000091	
Endrin aldehyde	B[I2784-BLK1	ND	mg/kg	0.00050	0.00023	
Heptachlor	B[I2784-BLK1	ND	mg/kg	0.00050	0.000036	
Heptachlor epoxide	B[I2784-BLK1	ND	mg/kg	0.00050	0.000017	
Methoxychlor	B[I2784-BLK1	ND	mg/kg	0.00050	0.00021	
Toxaphene	B[I2784-BLK1	ND	mg/kg	0.050	0.0094	
PCB-1016	B[I2784-BLK1	ND	mg/kg	0.010	0.0039	
PCB-1221	B[I2784-BLK1	ND	mg/kg	0.010	0.0072	
PCB-1232	B[I2784-BLK1	ND	mg/kg	0.010	0.0074	
PCB-1242	B[I2784-BLK1	ND	mg/kg	0.010	0.0042	
PCB-1248	B[I2784-BLK1	ND	mg/kg	0.010	0.0070	
PCB-1254	B[I2784-BLK1	ND	mg/kg	0.010	0.0032	
PCB-1260	B[I2784-BLK1	ND	mg/kg	0.010	0.0029	
Total PCB's (Summation)	B[I2784-BLK1	ND	mg/kg	0.010	0.0050	
<b>TCMX (Surrogate)</b>	<b>B[I2784-BLK1</b>	<b>91.0</b>	<b>%</b>	<b>20 - 130 (LCL - UCL)</b>		
<b>Decachlorobiphenyl (Surrogate)</b>	<b>B[I2784-BLK1</b>	<b>130</b>	<b>%</b>	<b>40 - 130 (LCL - UCL)</b>		

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## Organochlorine Pesticides and PCB's (EPA Method 8080)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	Quals
QC Batch ID: B[I2784										
Aldrin	B[I2784-BS1	LCS	0.0048824	0.0049834	mg/kg	98.0		70 - 130		
gamma-BHC (Lindane)	B[I2784-BS1	LCS	0.0050904	0.0049834	mg/kg	102		60 - 140		
4,4'-DDT	B[I2784-BS1	LCS	0.0064053	0.0049834	mg/kg	129		60 - 140		
Dieldrin	B[I2784-BS1	LCS	0.0051864	0.0049834	mg/kg	104		70 - 130		
Endrin	B[I2784-BS1	LCS	0.0045379	0.0049834	mg/kg	91.1		60 - 140		
Heptachlor	B[I2784-BS1	LCS	0.0049306	0.0049834	mg/kg	98.9		60 - 140		
TCMX (Surrogate)	B[I2784-BS1	LCS	0.010147	0.0099668	mg/kg	102		20 - 130		
Decachlorobiphenyl (Surrogate)	B[I2784-BS1	LCS	0.025402	0.019934	mg/kg	127		40 - 130		

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**Project Manager:** Kirk Henning

## Organochlorine Pesticides and PCB's (EPA Method 8080)

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B I2784		Used client sample: N									
Aldrin	MS	1724840-81	ND	0.0048136	0.0049669	mg/kg		96.9		50 - 140	
	MSD	1724840-81	ND	0.0049128	0.0050505	mg/kg	2.0	97.3	30	50 - 140	
gamma-BHC (Lindane)	MS	1724840-81	ND	0.0050825	0.0049669	mg/kg		102		50 - 140	
	MSD	1724840-81	ND	0.0051684	0.0050505	mg/kg	1.7	102	30	50 - 140	
4,4'-DDT	MS	1724840-81	ND	0.0063424	0.0049669	mg/kg		128		50 - 140	
	MSD	1724840-81	ND	0.0060677	0.0050505	mg/kg	4.4	120	30	50 - 140	
Dieldrin	MS	1724840-81	ND	0.0051854	0.0049669	mg/kg		104		40 - 140	
	MSD	1724840-81	ND	0.0052963	0.0050505	mg/kg	2.1	105	30	40 - 140	
Endrin	MS	1724840-81	ND	0.0044066	0.0049669	mg/kg		88.7		50 - 150	
	MSD	1724840-81	ND	0.0044465	0.0050505	mg/kg	0.9	88.0	30	50 - 150	
Heptachlor	MS	1724840-81	ND	0.0048765	0.0049669	mg/kg		98.2		60 - 140	
	MSD	1724840-81	ND	0.0049808	0.0050505	mg/kg	2.1	98.6	30	60 - 140	
TCMX (Surrogate)	MS	1724840-81	ND	0.0098695	0.0099338	mg/kg		99.4		20 - 130	
	MSD	1724840-81	ND	0.010062	0.010101	mg/kg	1.9	99.6		20 - 130	
Decachlorobiphenyl (Surrogate)	MS	1724840-81	ND	0.025393	0.019868	mg/kg		128		40 - 130	
	MSD	1724840-81	ND	0.024887	0.020202	mg/kg	2.0	123		40 - 130	

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**Project Manager:** Kirk Henning

## Organo-Phosphorus Pesticide Analysis (EPA Method 8141A)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[I]2698</b>						
Azinphos methyl	B[I]2698-BLK1	ND	mg/kg	0.010	0.0073	
Bolstar	B[I]2698-BLK1	ND	mg/kg	0.010	0.0022	
Chlorpyrifos	B[I]2698-BLK1	ND	mg/kg	0.010	0.0014	
Coumaphos	B[I]2698-BLK1	ND	mg/kg	0.010	0.0081	
Demeton O/S	B[I]2698-BLK1	ND	mg/kg	0.010	0.0034	
Diazinon	B[I]2698-BLK1	ND	mg/kg	0.010	0.0024	
Dichlorvos	B[I]2698-BLK1	ND	mg/kg	0.010	0.00091	
Disulfoton	B[I]2698-BLK1	ND	mg/kg	0.010	0.0019	
Ethoprop	B[I]2698-BLK1	ND	mg/kg	0.010	0.0012	
Fensulfothion	B[I]2698-BLK1	ND	mg/kg	0.010	0.0056	
Fenthion	B[I]2698-BLK1	ND	mg/kg	0.010	0.0021	
Merphos	B[I]2698-BLK1	ND	mg/kg	0.010	0.0019	
Methyl parathion	B[I]2698-BLK1	ND	mg/kg	0.010	0.0025	
Mevinphos	B[I]2698-BLK1	ND	mg/kg	0.010	0.0024	
Naled	B[I]2698-BLK1	ND	mg/kg	0.010	0.0043	
Phorate	B[I]2698-BLK1	ND	mg/kg	0.010	0.0026	
Ronnel (Fenchlorphos)	B[I]2698-BLK1	ND	mg/kg	0.010	0.0014	
Stirophos (Tetrachlorvinphos)	B[I]2698-BLK1	ND	mg/kg	0.010	0.0020	
Tokuthion (Prothiofos)	B[I]2698-BLK1	ND	mg/kg	0.010	0.0017	
Trichloronate	B[I]2698-BLK1	ND	mg/kg	0.010	0.0013	
<b>Triphenylphosphate (Surrogate)</b>	<b>B[I]2698-BLK1</b>	<b>50.4</b>	<b>%</b>	<b>40 - 120 (LCL - UCL)</b>		

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**Project Manager:** Kirk Henning

## Organo-Phosphorus Pesticide Analysis (EPA Method 8141A)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	Quals
QC Batch ID: B[I2698										
Bolstar	B[I2698-BS1	LCS	0.060984	0.065574	mg/kg	93.0		50 - 130		
Chlorpyrifos	B[I2698-BS1	LCS	0.057049	0.065574	mg/kg	87.0		60 - 140		
Diazinon	B[I2698-BS1	LCS	0.042131	0.065574	mg/kg	64.2		40 - 120		
Methyl parathion	B[I2698-BS1	LCS	0.066393	0.065574	mg/kg	101		60 - 120		
Mevinphos	B[I2698-BS1	LCS	0.068361	0.065574	mg/kg	104		50 - 120		
Ronnel (Fenchlorphos)	B[I2698-BS1	LCS	0.064426	0.065574	mg/kg	98.2		50 - 120		
Stirophos (Tetrachlorvinphos)	B[I2698-BS1	LCS	0.091148	0.065574	mg/kg	139		60 - 140		
Triphenylphosphate (Surrogate)	B[I2698-BS1	LCS	0.075082	0.081967	mg/kg	91.6		40 - 120		

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## Organo-Phosphorus Pesticide Analysis (EPA Method 8141A)

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: BJ12698		Used client sample: N									
Bolstar	MS	1727295-01	ND	0.066337	0.066007	mg/kg		100		40 - 140	
	MSD	1727295-01	ND	0.062957	0.066445	mg/kg	5.2	94.7	30	40 - 140	
Chlorpyrifos	MS	1727295-01	ND	0.071617	0.066007	mg/kg		108		40 - 130	
	MSD	1727295-01	ND	0.061960	0.066445	mg/kg	14.5	93.2	30	40 - 130	
Diazinon	MS	1727295-01	ND	0.062046	0.066007	mg/kg		94.0		40 - 120	
	MSD	1727295-01	ND	0.063621	0.066445	mg/kg	2.5	95.8	30	40 - 120	
Methyl parathion	MS	1727295-01	ND	0.074092	0.066007	mg/kg		112		40 - 125	
	MSD	1727295-01	ND	0.072259	0.066445	mg/kg	2.5	109	30	40 - 125	
Mevinphos	MS	1727295-01	ND	0.10083	0.066007	mg/kg		153		40 - 140	Q03
	MSD	1727295-01	ND	0.099834	0.066445	mg/kg	1.0	150	30	40 - 140	Q03
Ronnel (Fenchlorphos)	MS	1727295-01	ND	0.071452	0.066007	mg/kg		108		40 - 120	
	MSD	1727295-01	ND	0.069435	0.066445	mg/kg	2.9	104	30	40 - 120	
Stirophos (Tetrachlorvinphos)	MS	1727295-01	ND	0.11848	0.066007	mg/kg		179		40 - 140	Q03
	MSD	1727295-01	ND	0.11429	0.066445	mg/kg	3.6	172	30	40 - 140	Q03
Triphenylphosphate (Surrogate)	MS	1727295-01	ND	0.080528	0.082508	mg/kg		97.6		40 - 120	
	MSD	1727295-01	ND	0.071927	0.083056	mg/kg	11.3	86.6		40 - 120	

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## Chlorinated Herbicides (EPA Method 8151A)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[I2744</b>						
2,4-D	B[I2744-BLK1	ND	mg/kg	0.020	0.0058	
2,4-DB	B[I2744-BLK1	ND	mg/kg	0.040	0.017	
Dalapon	B[I2744-BLK1	ND	mg/kg	0.050	0.034	
Dicamba	B[I2744-BLK1	ND	mg/kg	0.0020	0.0016	
Dichloroprop	B[I2744-BLK1	ND	mg/kg	0.020	0.0055	
Dinoseb	B[I2744-BLK1	ND	mg/kg	0.0070	0.0024	
2,4,5-T	B[I2744-BLK1	ND	mg/kg	0.0030	0.0013	
2,4,5-TP (Silvex)	B[I2744-BLK1	ND	mg/kg	0.0030	0.0012	
<b>2,4-Dichlorophenylacetic acid (Surrogate)</b>	<b>B[I2744-BLK1</b>	<b>87.8</b>	<b>%</b>	<b>40 - 120 (LCL - UCL)</b>		

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## Chlorinated Herbicides (EPA Method 8151A)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	Quals
QC Batch ID: B[I2744										
2,4-D	B[I2744-BS1	LCS	0.069799	0.080537	mg/kg	86.7		50 - 120		
2,4-DB	B[I2744-BS1	LCS	0.17685	0.18121	mg/kg	97.6		50 - 120		
Dicamba	B[I2744-BS1	LCS	0.017785	0.020134	mg/kg	88.3		50 - 120		
Dichloroprop	B[I2744-BS1	LCS	0.069463	0.080537	mg/kg	86.2		50 - 120		
Dinoseb	B[I2744-BS1	LCS	0.036913	0.040268	mg/kg	91.7		50 - 120		
2,4,5-T	B[I2744-BS1	LCS	0.019463	0.020134	mg/kg	96.7		30 - 120		
2,4,5-TP (Silvex)	B[I2744-BS1	LCS	0.020470	0.020134	mg/kg	102		50 - 120		
2,4-Dichlorophenylacetic acid (Surrogate)	B[I2744-BS1	LCS	0.11040	0.13423	mg/kg	82.2		40 - 120		

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## Chlorinated Herbicides (EPA Method 8151A)

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: BJI2744		Used client sample: N									
2,4-D	MS	1727295-01	ND	0.067763	0.078947	mg/kg		85.8		40 - 120	
	MSD	1727295-01	ND	0.055932	0.081356	mg/kg	19.1	68.8	30	40 - 120	
2,4-DB	MS	1727295-01	ND	0.17039	0.17763	mg/kg		95.9		50 - 120	
	MSD	1727295-01	ND	0.14712	0.18305	mg/kg	14.7	80.4	30	50 - 120	
Dicamba	MS	1727295-01	ND	0.017434	0.019737	mg/kg		88.3		50 - 120	
	MSD	1727295-01	ND	0.014237	0.020339	mg/kg	20.2	70.0	30	50 - 120	
Dichloroprop	MS	1727295-01	ND	0.066776	0.078947	mg/kg		84.6		40 - 120	
	MSD	1727295-01	ND	0.052542	0.081356	mg/kg	23.9	64.6	30	40 - 120	
Dinoseb	MS	1727295-01	ND	0.034211	0.039474	mg/kg		86.7		40 - 130	
	MSD	1727295-01	ND	0.029831	0.040678	mg/kg	13.7	73.3	30	40 - 130	
2,4,5-T	MS	1727295-01	ND	0.018421	0.019737	mg/kg		93.3		30 - 120	
	MSD	1727295-01	ND	0.015932	0.020339	mg/kg	14.5	78.3	30	30 - 120	
2,4,5-TP (Silvex)	MS	1727295-01	ND	0.020066	0.019737	mg/kg		102		40 - 120	
	MSD	1727295-01	ND	0.016271	0.020339	mg/kg	20.9	80.0	30	40 - 120	
2,4-Dichlorophenylacetic acid (Surrogate	MS	1727295-01	ND	0.10625	0.13158	mg/kg		80.7		40 - 120	
	MSD	1727295-01	ND	0.10746	0.13559	mg/kg	1.1	79.3		40 - 120	

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San Luis Obispo, CA 93401

**Reported:** 04/02/2018 11:13  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Volatile Organic Analysis (EPA Method 8260B)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[I]2607</b>						
Benzene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0013	
Bromobenzene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0013	
Bromochloromethane	B[I]2607-BLK1	ND	mg/kg	0.0050	0.00092	
Bromodichloromethane	B[I]2607-BLK1	ND	mg/kg	0.0050	0.00084	
Bromoform	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0015	
Bromomethane	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0016	
n-Butylbenzene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0015	
sec-Butylbenzene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0012	
tert-Butylbenzene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0012	
Carbon tetrachloride	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0011	
Chlorobenzene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0013	
Chloroethane	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0014	
Chloroform	B[I]2607-BLK1	ND	mg/kg	0.0050	0.00063	
Chloromethane	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0014	
2-Chlorotoluene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0018	
4-Chlorotoluene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0014	
Dibromochloromethane	B[I]2607-BLK1	ND	mg/kg	0.0050	0.00099	
1,2-Dibromo-3-chloropropane	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0017	
1,2-Dibromoethane	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0010	
Dibromomethane	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0018	
1,2-Dichlorobenzene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.00081	
1,3-Dichlorobenzene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0014	
1,4-Dichlorobenzene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0015	
Dichlorodifluoromethane	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0013	
1,1-Dichloroethane	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0014	
1,2-Dichloroethane	B[I]2607-BLK1	ND	mg/kg	0.0050	0.00085	
1,1-Dichloroethene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0012	
cis-1,2-Dichloroethene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0013	
trans-1,2-Dichloroethene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0014	
1,2-Dichloropropane	B[I]2607-BLK1	ND	mg/kg	0.0050	0.00081	
1,3-Dichloropropane	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0011	
2,2-Dichloropropane	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0013	
1,1-Dichloropropene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0012	
cis-1,3-Dichloropropene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0011	

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**Reported:** 04/02/2018 11:13  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Volatile Organic Analysis (EPA Method 8260B)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[I]2607</b>						
trans-1,3-Dichloropropene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0012	
Ethylbenzene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0015	
Hexachlorobutadiene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0017	
Isopropylbenzene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0013	
p-Isopropyltoluene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0013	
Methylene chloride	B[I]2607-BLK1	ND	mg/kg	0.010	0.0024	
Methyl t-butyl ether	B[I]2607-BLK1	ND	mg/kg	0.0050	0.00050	
Naphthalene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0014	
n-Propylbenzene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0013	
Styrene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0014	
1,1,1,2-Tetrachloroethane	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0011	
1,1,2,2-Tetrachloroethane	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0011	
Tetrachloroethene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0013	
Toluene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0012	
1,2,3-Trichlorobenzene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0021	
1,2,4-Trichlorobenzene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0020	
1,1,1-Trichloroethane	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0011	
1,1,2-Trichloroethane	B[I]2607-BLK1	ND	mg/kg	0.0050	0.00077	
Trichloroethene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0011	
Trichlorofluoromethane	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0011	
1,2,3-Trichloropropane	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0016	
1,1,2-Trichloro-1,2,2-trifluoroethane	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0013	
1,2,4-Trimethylbenzene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0013	
1,3,5-Trimethylbenzene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0015	
Vinyl chloride	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0016	
Total Xylenes	B[I]2607-BLK1	ND	mg/kg	0.010	0.0034	
p- & m-Xylenes	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0022	
o-Xylene	B[I]2607-BLK1	ND	mg/kg	0.0050	0.0012	
<b>1,2-Dichloroethane-d4 (Surrogate)</b>	<b>B[I]2607-BLK1</b>	<b>112</b>	<b>%</b>	<b>70 - 121 (LCL - UCL)</b>		
<b>Toluene-d8 (Surrogate)</b>	<b>B[I]2607-BLK1</b>	<b>99.0</b>	<b>%</b>	<b>81 - 117 (LCL - UCL)</b>		
<b>4-Bromofluorobenzene (Surrogate)</b>	<b>B[I]2607-BLK1</b>	<b>116</b>	<b>%</b>	<b>74 - 121 (LCL - UCL)</b>		

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**Reported:** 04/02/2018 11:13  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Volatile Organic Analysis (EPA Method 8260B)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: B[I]2607										
Benzene	B[I]2607-BS1	LCS	0.11700	0.12500	mg/kg	93.6		70 - 130		
Bromodichloromethane	B[I]2607-BS1	LCS	0.14996	0.12500	mg/kg	120		70 - 130		
Chlorobenzene	B[I]2607-BS1	LCS	0.13086	0.12500	mg/kg	105		70 - 130		
Chloroethane	B[I]2607-BS1	LCS	0.11993	0.12500	mg/kg	95.9		70 - 130		
1,4-Dichlorobenzene	B[I]2607-BS1	LCS	0.13010	0.12500	mg/kg	104		70 - 130		
1,1-Dichloroethane	B[I]2607-BS1	LCS	0.13452	0.12500	mg/kg	108		70 - 130		
1,1-Dichloroethene	B[I]2607-BS1	LCS	0.13580	0.12500	mg/kg	109		70 - 130		
Toluene	B[I]2607-BS1	LCS	0.12978	0.12500	mg/kg	104		70 - 130		
Trichloroethene	B[I]2607-BS1	LCS	0.13987	0.12500	mg/kg	112		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	B[I]2607-BS1	LCS	0.058620	0.050000	mg/kg	117		70 - 121		
Toluene-d8 (Surrogate)	B[I]2607-BS1	LCS	0.049850	0.050000	mg/kg	99.7		81 - 117		
4-Bromofluorobenzene (Surrogate)	B[I]2607-BS1	LCS	0.049170	0.050000	mg/kg	98.3		74 - 121		

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**Project Manager:** Kirk Henning

## Volatile Organic Analysis (EPA Method 8260B)

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: BJI2607		Used client sample: N									
Benzene	MS	1724840-60	ND	0.11588	0.12500	mg/kg		92.7		70 - 130	
	MSD	1724840-60	ND	0.10810	0.12500	mg/kg	6.9	86.5	20	70 - 130	
Bromodichloromethane	MS	1724840-60	ND	0.15223	0.12500	mg/kg		122		70 - 130	
	MSD	1724840-60	ND	0.14290	0.12500	mg/kg	6.3	114	20	70 - 130	
Chlorobenzene	MS	1724840-60	ND	0.13639	0.12500	mg/kg		109		70 - 130	
	MSD	1724840-60	ND	0.12639	0.12500	mg/kg	7.6	101	20	70 - 130	
Chloroethane	MS	1724840-60	ND	0.11216	0.12500	mg/kg		89.7		70 - 130	
	MSD	1724840-60	ND	0.10713	0.12500	mg/kg	4.6	85.7	20	70 - 130	
1,4-Dichlorobenzene	MS	1724840-60	ND	0.14859	0.12500	mg/kg		119		70 - 130	
	MSD	1724840-60	ND	0.13886	0.12500	mg/kg	6.8	111	20	70 - 130	
1,1-Dichloroethane	MS	1724840-60	ND	0.12508	0.12500	mg/kg		100		70 - 130	
	MSD	1724840-60	ND	0.12044	0.12500	mg/kg	3.8	96.4	20	70 - 130	
1,1-Dichloroethene	MS	1724840-60	ND	0.12272	0.12500	mg/kg		98.2		70 - 130	
	MSD	1724840-60	ND	0.12446	0.12500	mg/kg	1.4	99.6	20	70 - 130	
Toluene	MS	1724840-60	ND	0.13417	0.12500	mg/kg		107		70 - 130	
	MSD	1724840-60	ND	0.12891	0.12500	mg/kg	4.0	103	20	70 - 130	
Trichloroethene	MS	1724840-60	ND	0.14162	0.12500	mg/kg		113		70 - 130	
	MSD	1724840-60	ND	0.13534	0.12500	mg/kg	4.5	108	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1724840-60	ND	0.059440	0.050000	mg/kg		119		70 - 121	
	MSD	1724840-60	ND	0.057070	0.050000	mg/kg	4.1	114		70 - 121	
Toluene-d8 (Surrogate)	MS	1724840-60	ND	0.052470	0.050000	mg/kg		105		81 - 117	
	MSD	1724840-60	ND	0.050370	0.050000	mg/kg	4.1	101		81 - 117	
4-Bromofluorobenzene (Surrogate)	MS	1724840-60	ND	0.058460	0.050000	mg/kg		117		74 - 121	
	MSD	1724840-60	ND	0.054490	0.050000	mg/kg	7.0	109		74 - 121	

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**Project Manager:** Kirk Henning

## Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J0320]</b>						
Acenaphthene	B[J0320-BLK1	ND	mg/kg	0.0030	0.0012	
Acenaphthylene	B[J0320-BLK1	ND	mg/kg	0.0030	0.0011	
Anthracene	B[J0320-BLK1	ND	mg/kg	0.0030	0.0012	
Benzo[a]anthracene	B[J0320-BLK1	ND	mg/kg	0.0030	0.0011	
Benzo[b]fluoranthene	B[J0320-BLK1	ND	mg/kg	0.0030	0.00095	
Benzo[k]fluoranthene	B[J0320-BLK1	ND	mg/kg	0.0030	0.0011	
Benzo[a]pyrene	B[J0320-BLK1	ND	mg/kg	0.0030	0.00095	
Benzo[g,h,i]perylene	B[J0320-BLK1	ND	mg/kg	0.0030	0.0011	
Chrysene	B[J0320-BLK1	ND	mg/kg	0.0030	0.00097	
Dibenzo[a,h]anthracene	B[J0320-BLK1	ND	mg/kg	0.0030	0.00099	
Fluoranthene	B[J0320-BLK1	ND	mg/kg	0.0030	0.0014	
Fluorene	B[J0320-BLK1	ND	mg/kg	0.0030	0.0011	
Indeno[1,2,3-cd]pyrene	B[J0320-BLK1	ND	mg/kg	0.0030	0.00092	
Naphthalene	B[J0320-BLK1	ND	mg/kg	0.0030	0.0011	
Phenanthrene	B[J0320-BLK1	ND	mg/kg	0.0030	0.0012	
Pyrene	B[J0320-BLK1	ND	mg/kg	0.0030	0.0015	
<b>Nitrobenzene-d5 (Surrogate)</b>	<b>B[J0320-BLK1</b>	<b>75.0</b>	<b>%</b>	<b>30 - 110 (LCL - UCL)</b>		
<b>2-Fluorobiphenyl (Surrogate)</b>	<b>B[J0320-BLK1</b>	<b>65.3</b>	<b>%</b>	<b>40 - 120 (LCL - UCL)</b>		
<b>p-Terphenyl-d14 (Surrogate)</b>	<b>B[J0320-BLK1</b>	<b>70.3</b>	<b>%</b>	<b>30 - 120 (LCL - UCL)</b>		

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**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	Quals
QC Batch ID: B[J0320										
Acenaphthene	B[J0320-BS1	LCS	0.025418	0.033445	mg/kg	76.0		60 - 130		
Acenaphthylene	B[J0320-BS1	LCS	0.026371	0.033445	mg/kg	78.9		60 - 130		
Anthracene	B[J0320-BS1	LCS	0.025418	0.033445	mg/kg	76.0		60 - 130		
Benzo[a]anthracene	B[J0320-BS1	LCS	0.030502	0.033445	mg/kg	91.2		60 - 130		
Benzo[b]fluoranthene	B[J0320-BS1	LCS	0.034950	0.033445	mg/kg	104		50 - 130		
Benzo[k]fluoranthene	B[J0320-BS1	LCS	0.031137	0.033445	mg/kg	93.1		60 - 130		
Benzo[a]pyrene	B[J0320-BS1	LCS	0.027960	0.033445	mg/kg	83.6		60 - 130		
Benzo[g,h,i]perylene	B[J0320-BS1	LCS	0.027324	0.033445	mg/kg	81.7		50 - 130		
Chrysene	B[J0320-BS1	LCS	0.027007	0.033445	mg/kg	80.8		50 - 130		
Dibenzo[a,h]anthracene	B[J0320-BS1	LCS	0.022876	0.033445	mg/kg	68.4		50 - 130		
Fluoranthene	B[J0320-BS1	LCS	0.030184	0.033445	mg/kg	90.2		60 - 130		
Fluorene	B[J0320-BS1	LCS	0.023512	0.033445	mg/kg	70.3		50 - 130		
Indeno[1,2,3-cd]pyrene	B[J0320-BS1	LCS	0.026371	0.033445	mg/kg	78.9		50 - 130		
Naphthalene	B[J0320-BS1	LCS	0.025100	0.033445	mg/kg	75.0		50 - 130		
Phenanthrene	B[J0320-BS1	LCS	0.020652	0.033445	mg/kg	61.8		50 - 130		
Pyrene	B[J0320-BS1	LCS	0.035585	0.033445	mg/kg	106		50 - 130		
Nitrobenzene-d5 (Surrogate)	B[J0320-BS1	LCS	0.078478	0.13378	mg/kg	58.7		30 - 110		
2-Fluorobiphenyl (Surrogate)	B[J0320-BS1	LCS	0.071171	0.13378	mg/kg	53.2		40 - 120		
p-Terphenyl-d14 (Surrogate)	B[J0320-BS1	LCS	0.083880	0.13378	mg/kg	62.7		30 - 120		

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## Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J0320]		Used client sample: N									
Acenaphthene	MS	1724840-81	ND	0.027997	0.033113	mg/kg		84.6		50 - 130	
	MSD	1724840-81	ND	0.026316	0.032895	mg/kg	6.2	80.0	30	50 - 130	
Acenaphthylene	MS	1724840-81	ND	0.029255	0.033113	mg/kg		88.3		50 - 130	
	MSD	1724840-81	ND	0.028289	0.032895	mg/kg	3.4	86.0	30	50 - 130	
Anthracene	MS	1724840-81	ND	0.029884	0.033113	mg/kg		90.2		50 - 130	
	MSD	1724840-81	ND	0.028618	0.032895	mg/kg	4.3	87.0	30	50 - 130	
Benzo[a]anthracene	MS	1724840-81	ND	0.032715	0.033113	mg/kg		98.8		50 - 130	
	MSD	1724840-81	ND	0.036842	0.032895	mg/kg	11.9	112	30	50 - 130	
Benzo[b]fluoranthene	MS	1724840-81	ND	0.036490	0.033113	mg/kg		110		40 - 130	
	MSD	1724840-81	ND	0.051316	0.032895	mg/kg	33.8	156	30	40 - 130	Q02,Q03
Benzo[k]fluoranthene	MS	1724840-81	ND	0.036490	0.033113	mg/kg		110		40 - 130	
	MSD	1724840-81	ND	0.039145	0.032895	mg/kg	7.0	119	30	40 - 130	
Benzo[a]pyrene	MS	1724840-81	ND	0.029884	0.033113	mg/kg		90.2		40 - 130	
	MSD	1724840-81	ND	0.030263	0.032895	mg/kg	1.3	92.0	30	40 - 130	
Benzo[g,h,i]perylene	MS	1724840-81	ND	0.030513	0.033113	mg/kg		92.1		40 - 130	
	MSD	1724840-81	ND	0.027632	0.032895	mg/kg	9.9	84.0	30	40 - 130	
Chrysene	MS	1724840-81	ND	0.029570	0.033113	mg/kg		89.3		40 - 130	
	MSD	1724840-81	ND	0.028618	0.032895	mg/kg	3.3	87.0	30	40 - 130	
Dibenzo[a,h]anthracene	MS	1724840-81	ND	0.025166	0.033113	mg/kg		76.0		40 - 130	
	MSD	1724840-81	ND	0.023026	0.032895	mg/kg	8.9	70.0	30	40 - 130	
Fluoranthene	MS	1724840-81	ND	0.032715	0.033113	mg/kg		98.8		40 - 130	
	MSD	1724840-81	ND	0.032237	0.032895	mg/kg	1.5	98.0	30	40 - 130	
Fluorene	MS	1724840-81	ND	0.028940	0.033113	mg/kg		87.4		40 - 130	
	MSD	1724840-81	ND	0.028289	0.032895	mg/kg	2.3	86.0	30	40 - 130	
Indeno[1,2,3-cd]pyrene	MS	1724840-81	ND	0.029255	0.033113	mg/kg		88.3		30 - 130	
	MSD	1724840-81	ND	0.026316	0.032895	mg/kg	10.6	80.0	30	30 - 130	
Naphthalene	MS	1724840-81	ND	0.027368	0.033113	mg/kg		82.6		50 - 130	
	MSD	1724840-81	ND	0.027632	0.032895	mg/kg	1.0	84.0	30	50 - 130	
Phenanthrene	MS	1724840-81	ND	0.022964	0.033113	mg/kg		69.3		40 - 130	
	MSD	1724840-81	ND	0.022368	0.032895	mg/kg	2.6	68.0	30	40 - 130	
Pyrene	MS	1724840-81	ND	0.038377	0.033113	mg/kg		116		40 - 130	
	MSD	1724840-81	ND	0.038816	0.032895	mg/kg	1.1	118	30	40 - 130	
Nitrobenzene-d5 (Surrogate)	MS	1724840-81	ND	0.10444	0.13245	mg/kg		78.9		30 - 110	
	MSD	1724840-81	ND	0.10691	0.13158	mg/kg	2.3	81.3		30 - 110	
2-Fluorobiphenyl (Surrogate)	MS	1724840-81	ND	0.090281	0.13245	mg/kg		68.2		40 - 120	
	MSD	1724840-81	ND	0.089145	0.13158	mg/kg	1.3	67.7		40 - 120	

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**Reported:** 04/02/2018 11:13  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

### Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits		
									RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J0320		Used client sample: N									
p-Terphenyl-d14 (Surrogate)	MS	1724840-81	ND	0.090596	0.13245	mg/kg		68.4		30 - 120	
	MSD	1724840-81	ND	0.091776	0.13158	mg/kg	1.3	69.7		30 - 120	





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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J0322</b>						
TPH - Gasoline	B[J0322-BLK1	ND	mg/kg	20	5.0	
TPH - Diesel (FFP)	B[J0322-BLK1	ND	mg/kg	10	1.2	
TPH - Motor Oil	B[J0322-BLK1	ND	mg/kg	20	6.5	
<b>Tetracosane (Surrogate)</b>	<b>B[J0322-BLK1</b>	<b>93.3</b>	<b>%</b>	<b>20 - 145 (LCL - UCL)</b>		



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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: B[J0322										
TPH - Diesel (FFP)	B[J0322-BS1	LCS	81.696	84.746	mg/kg	96.4		64 - 124		
Tetracosane (Surrogate)	B[J0322-BS1	LCS	3.4634	3.3912	mg/kg	102		20 - 145		



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## Total Petroleum Hydrocarbons

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J0322		Used client sample: Y - Description: HA-28-3, 09/25/2017 07:50									
TPH - Diesel (FFP)	MS	1727086-01	ND	68.174	84.746	mg/kg		80.4		52 - 131	
	MSD	1727086-01	ND	45.948	82.508	mg/kg	39.0	55.7	30	52 - 131	Q02
Tetracosane (Surrogate)	MS	1727086-01	ND	2.9273	3.3912	mg/kg		86.3		20 - 145	
	MSD	1727086-01	ND	1.9536	3.3017	mg/kg	39.9	59.2		20 - 145	

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**Project Manager:** Kirk Henning

## Chemical Analysis

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J0027]</b>						
Total Cyanide	B[J0027-BLK1	ND	mg/kg	0.50	0.15	
<b>QC Batch ID: B[J0223]</b>						
pH	B[J0223-BLK1	ND	pH Units	0.05	0.05	
pH Measurement Temperature	B[J0223-BLK1	ND	C	0.1	0.1	

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Project Manager: Kirk Henning

## Chemical Analysis

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: B[J0027										
Total Cyanide	B[J0027-BS1	LCS	14.296	14.423	mg/kg	99.1		80 - 120		
QC Batch ID: B[J0223										
pH	B[J0223-BS1	LCS	6.9600	7.0000	pH Units	99.4		95 - 105		

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## Chemical Analysis

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J0027]		Used client sample: Y - Description: HA-37-8, 09/20/2017 11:50									
Total Cyanide	DUP	1726918-05	ND	ND		mg/kg			20		
	MS	1726918-05	ND	9.3974	9.6154	mg/kg		97.7		80 - 120	
	MSD	1726918-05	ND	9.5980	9.8039	mg/kg	2.1	97.9	20	80 - 120	
QC Batch ID: B[J0223]		Used client sample: Y - Description: HA-37-8, 09/20/2017 11:50									
pH	DUP	1726918-05	7.5950	7.6190		pH Units	0.3		20		

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**Project Manager:** Kirk Henning

## Total Concentrations (TTLC)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J0037]</b>						
Total Hexavalent Chromium	B[J0037-BLK1	ND	mg/kg	1.0	0.30	
<b>QC Batch ID: B[J0196]</b>						
Mercury	B[J0196-BLK1	ND	mg/kg	0.16	0.019	
<b>QC Batch ID: B[J0797]</b>						
Antimony	B[J0797-BLK1	ND	mg/kg	5.0	0.33	
Arsenic	B[J0797-BLK1	ND	mg/kg	1.0	0.40	
Barium	B[J0797-BLK2	ND	mg/kg	0.50	0.18	
Beryllium	B[J0797-BLK1	ND	mg/kg	0.50	0.047	
Cadmium	B[J0797-BLK1	ND	mg/kg	0.50	0.052	
Chromium	B[J0797-BLK2	ND	mg/kg	0.50	0.050	
Cobalt	B[J0797-BLK1	ND	mg/kg	2.5	0.098	
<b>Copper</b>	<b>B[J0797-BLK2</b>	<b>0.078530</b>	<b>mg/kg</b>	<b>1.0</b>	<b>0.050</b>	<b>J</b>
Lead	B[J0797-BLK2	ND	mg/kg	2.5	0.28	
Molybdenum	B[J0797-BLK2	ND	mg/kg	2.5	0.050	
Nickel	B[J0797-BLK2	ND	mg/kg	0.50	0.15	
Selenium	B[J0797-BLK1	ND	mg/kg	1.0	0.98	
Silver	B[J0797-BLK1	ND	mg/kg	0.50	0.067	
Thallium	B[J0797-BLK2	ND	mg/kg	5.0	0.64	
Vanadium	B[J0797-BLK1	ND	mg/kg	0.50	0.11	
<b>Zinc</b>	<b>B[J0797-BLK1</b>	<b>0.21105</b>	<b>mg/kg</b>	<b>2.5</b>	<b>0.087</b>	<b>J</b>
<b>QC Batch ID: B006519</b>						
Mercury	B006519-BLK1	ND	mg/kg	0.16	0.019	
<b>QC Batch ID: B006562</b>						
Antimony	B006562-BLK1	ND	mg/kg	5.0	0.33	
Arsenic	B006562-BLK1	ND	mg/kg	1.0	0.40	
Barium	B006562-BLK1	ND	mg/kg	0.50	0.18	
Beryllium	B006562-BLK1	ND	mg/kg	0.50	0.047	
Cadmium	B006562-BLK1	ND	mg/kg	0.50	0.052	
<b>Chromium</b>	<b>B006562-BLK1</b>	<b>0.15707</b>	<b>mg/kg</b>	<b>0.50</b>	<b>0.050</b>	<b>J</b>
Cobalt	B006562-BLK1	ND	mg/kg	2.5	0.098	
Copper	B006562-BLK1	ND	mg/kg	1.0	0.050	
Lead	B006562-BLK1	ND	mg/kg	2.5	0.28	

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## Total Concentrations (TTLC)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B006562</b>						
Molybdenum	B006562-BLK1	0.058736	mg/kg	2.5	0.050	J
Nickel	B006562-BLK1	ND	mg/kg	0.50	0.15	
Selenium	B006562-BLK1	ND	mg/kg	1.0	0.98	
Silver	B006562-BLK1	ND	mg/kg	0.50	0.067	
Thallium	B006562-BLK1	ND	mg/kg	5.0	0.64	
Vanadium	B006562-BLK1	ND	mg/kg	0.50	0.11	
Zinc	B006562-BLK1	1.1125	mg/kg	2.5	0.087	J
<b>QC Batch ID: B006616</b>						
Total Hexavalent Chromium	B006616-BLK1	ND	mg/kg	1.0	0.30	

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**Project Manager:** Kirk Henning

## Total Concentrations (TTLC)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab Quals
								Percent Recovery	RPD	
QC Batch ID: B[J0037										
Total Hexavalent Chromium	B[J0037-BS1	LCS	42.234	40.000	mg/kg	106		80 - 120		
QC Batch ID: B[J0196										
Mercury	B[J0196-BS1	LCS	0.79888	0.80000	mg/kg	99.9		80 - 120		
QC Batch ID: B[J0797										
Antimony	B[J0797-BS1	LCS	91.367	100.00	mg/kg	91.4		75 - 125		
Arsenic	B[J0797-BS1	LCS	8.2275	10.000	mg/kg	82.3		75 - 125		
Barium	B[J0797-BS2	LCS	105.87	100.00	mg/kg	106		75 - 125		
Beryllium	B[J0797-BS1	LCS	8.7437	10.000	mg/kg	87.4		75 - 125		
Cadmium	B[J0797-BS1	LCS	8.7402	10.000	mg/kg	87.4		75 - 125		
Chromium	B[J0797-BS2	LCS	109.48	100.00	mg/kg	109		75 - 125		
Cobalt	B[J0797-BS1	LCS	89.923	100.00	mg/kg	89.9		75 - 125		
Copper	B[J0797-BS2	LCS	94.896	100.00	mg/kg	94.9		75 - 125		
Lead	B[J0797-BS2	LCS	102.93	100.00	mg/kg	103		75 - 125		
Molybdenum	B[J0797-BS2	LCS	102.75	100.00	mg/kg	103		75 - 125		
Nickel	B[J0797-BS2	LCS	112.92	100.00	mg/kg	113		75 - 125		
Selenium	B[J0797-BS1	LCS	8.4091	10.000	mg/kg	84.1		75 - 125		
Silver	B[J0797-BS1	LCS	8.6660	10.000	mg/kg	86.7		75 - 125		
Thallium	B[J0797-BS2	LCS	112.70	100.00	mg/kg	113		75 - 125		
Vanadium	B[J0797-BS1	LCS	97.217	100.00	mg/kg	97.2		75 - 125		
Zinc	B[J0797-BS1	LCS	88.808	100.00	mg/kg	88.8		75 - 125		
QC Batch ID: B006519										
Mercury	B006519-BS1	LCS	0.80624	0.80000	mg/kg	101		80 - 120		
QC Batch ID: B006562										
Antimony	B006562-BS1	LCS	102.63	100.00	mg/kg	103		75 - 125		
Arsenic	B006562-BS1	LCS	9.4294	10.000	mg/kg	94.3		75 - 125		
Barium	B006562-BS1	LCS	102.36	100.00	mg/kg	102		75 - 125		
Beryllium	B006562-BS1	LCS	9.9327	10.000	mg/kg	99.3		75 - 125		
Cadmium	B006562-BS1	LCS	9.8321	10.000	mg/kg	98.3		75 - 125		
Chromium	B006562-BS1	LCS	105.80	100.00	mg/kg	106		75 - 125		
Cobalt	B006562-BS1	LCS	102.51	100.00	mg/kg	103		75 - 125		
Copper	B006562-BS1	LCS	98.262	100.00	mg/kg	98.3		75 - 125		
Lead	B006562-BS1	LCS	101.72	100.00	mg/kg	102		75 - 125		
Molybdenum	B006562-BS1	LCS	101.20	100.00	mg/kg	101		75 - 125		

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**Project Manager:** Kirk Henning

## Total Concentrations (TTLC)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: B006562										
Nickel	B006562-BS1	LCS	103.96	100.00	mg/kg	104		75 - 125		
Selenium	B006562-BS1	LCS	8.6322	10.000	mg/kg	86.3		75 - 125		
Silver	B006562-BS1	LCS	9.3710	10.000	mg/kg	93.7		75 - 125		
Thallium	B006562-BS1	LCS	114.14	100.00	mg/kg	114		75 - 125		
Vanadium	B006562-BS1	LCS	103.83	100.00	mg/kg	104		75 - 125		
Zinc	B006562-BS1	LCS	98.961	100.00	mg/kg	99.0		75 - 125		
QC Batch ID: B006616										
Total Hexavalent Chromium	B006616-BS1	LCS	41.778	40.000	mg/kg	104		80 - 120		

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Project Manager: Kirk Henning

## Total Concentrations (TTLC)

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J0037]		Used client sample: N									
Total Hexavalent Chromium	DUP	1727341-20	1.2560	1.2600		mg/kg	0.3		20		
	MS	1727341-20	1.2560	42.298	40.000	mg/kg		103		75 - 125	
	MSD	1727341-20	1.2560	42.794	40.000	mg/kg	1.2	104	20	75 - 125	
QC Batch ID: B[J0196]		Used client sample: N									
Mercury	DUP	1727741-01	0.021846	0.075231		mg/kg	110		20		J,A02
	MS	1727741-01	0.021846	0.82631	0.76923	mg/kg		105		80 - 120	
	MSD	1727741-01	0.021846	0.79200	0.76923	mg/kg	4.2	100	20	80 - 120	
QC Batch ID: B[J0797]		Used client sample: N									
Antimony	DUP	1727681-09	ND	ND		mg/kg			20		
	MS	1727681-09	ND	27.244	100.00	mg/kg		27.2		16 - 119	
	MSD	1727681-09	ND	29.472	100.00	mg/kg	7.9	29.5	20	16 - 119	
Arsenic	DUP	1727681-09	2.9958	3.6795		mg/kg	20.5		20		A02
	MS	1727681-09	2.9958	11.739	10.000	mg/kg		87.4		75 - 125	
	MSD	1727681-09	2.9958	12.906	10.000	mg/kg	9.5	99.1	20	75 - 125	
Barium	DUP	1727681-09	90.045	107.01		mg/kg	17.2		20		
	MS	1727681-09	90.045	176.57	100.00	mg/kg		86.5		75 - 125	
	MSD	1727681-09	90.045	174.92	100.00	mg/kg	0.9	84.9	20	75 - 125	
Beryllium	DUP	1727681-09	0.24731	0.26124		mg/kg	5.5		20		J
	MS	1727681-09	0.24731	8.5017	10.000	mg/kg		82.5		75 - 125	
	MSD	1727681-09	0.24731	9.2929	10.000	mg/kg	8.9	90.5	20	75 - 125	
Cadmium	DUP	1727681-09	2.3928	2.7269		mg/kg	13.1		20		
	MS	1727681-09	2.3928	10.751	10.000	mg/kg		83.6		75 - 125	
	MSD	1727681-09	2.3928	11.885	10.000	mg/kg	10.0	94.9	20	75 - 125	
Chromium	DUP	1727681-09	18.275	16.167		mg/kg	12.2		20		
	MS	1727681-09	18.275	98.930	100.00	mg/kg		80.7		75 - 125	
	MSD	1727681-09	18.275	109.21	100.00	mg/kg	9.9	90.9	20	75 - 125	
Cobalt	DUP	1727681-09	3.3761	3.2725		mg/kg	3.1		20		
	MS	1727681-09	3.3761	81.580	100.00	mg/kg		78.2		75 - 125	
	MSD	1727681-09	3.3761	88.185	100.00	mg/kg	7.8	84.8	20	75 - 125	
Copper	DUP	1727681-09	13.075	12.070		mg/kg	8.0		20		
	MS	1727681-09	13.075	93.402	100.00	mg/kg		80.3		75 - 125	
	MSD	1727681-09	13.075	104.50	100.00	mg/kg	11.2	91.4	20	75 - 125	
Lead	DUP	1727681-09	5.7674	5.4407		mg/kg	5.8		20		
	MS	1727681-09	5.7674	85.591	100.00	mg/kg		79.8		75 - 125	
	MSD	1727681-09	5.7674	92.802	100.00	mg/kg	8.1	87.0	20	75 - 125	
Molybdenum	DUP	1727681-09	5.6990	4.9977		mg/kg	13.1		20		
	MS	1727681-09	5.6990	79.371	100.00	mg/kg		73.7		75 - 125	Q03
	MSD	1727681-09	5.6990	88.456	100.00	mg/kg	10.8	82.8	20	75 - 125	

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 04/02/2018 11:13  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Concentrations (TTLC)

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J0797		Used client sample: N									
Nickel	DUP	1727681-09	23.200	21.671		mg/kg	6.8		20		
	MS	1727681-09	23.200	100.35	100.00	mg/kg		77.2		75 - 125	
	MSD	1727681-09	23.200	110.42	100.00	mg/kg	9.6	87.2	20	75 - 125	
Selenium	DUP	1727681-09	ND	ND		mg/kg			20		
	MS	1727681-09	ND	7.5909	10.000	mg/kg		75.9		75 - 125	
	MSD	1727681-09	ND	7.7652	10.000	mg/kg	2.3	77.7	20	75 - 125	
Silver	DUP	1727681-09	ND	ND		mg/kg			20		
	MS	1727681-09	ND	7.6659	10.000	mg/kg		76.7		75 - 125	
	MSD	1727681-09	ND	8.4600	10.000	mg/kg	9.8	84.6	20	75 - 125	
Thallium	DUP	1727681-09	ND	ND		mg/kg			20		
	MS	1727681-09	ND	81.010	100.00	mg/kg		81.0		75 - 125	
	MSD	1727681-09	ND	88.200	100.00	mg/kg	8.5	88.2	20	75 - 125	
Vanadium	DUP	1727681-09	41.278	44.267		mg/kg	7.0		20		
	MS	1727681-09	41.278	137.07	100.00	mg/kg		95.8		75 - 125	
	MSD	1727681-09	41.278	149.12	100.00	mg/kg	8.4	108	20	75 - 125	
Zinc	DUP	1727681-09	48.516	51.081		mg/kg	5.2		20		
	MS	1727681-09	48.516	138.66	100.00	mg/kg		90.1		75 - 125	
	MSD	1727681-09	48.516	149.18	100.00	mg/kg	7.3	101	20	75 - 125	
QC Batch ID: B006519		Used client sample: N									
Mercury	DUP	1806528-01	ND	ND		mg/kg			20		
	MS	1806528-01	ND	0.76046	0.76923	mg/kg		98.9		80 - 120	
	MSD	1806528-01	ND	0.75415	0.76923	mg/kg	0.8	98.0	20	80 - 120	
QC Batch ID: B006562		Used client sample: Y - Description: HA-26-3, 09/25/2017 09:50									
Antimony	DUP	1727086-09	ND	ND		mg/kg			20		
	MS	1727086-09	ND	43.321	100.00	mg/kg		43.3		16 - 119	
	MSD	1727086-09	ND	43.436	100.00	mg/kg	0.3	43.4	20	16 - 119	
Arsenic	DUP	1727086-09	1.8491	1.9970		mg/kg	7.7		20		
	MS	1727086-09	1.8491	11.450	10.000	mg/kg		96.0		75 - 125	
	MSD	1727086-09	1.8491	10.762	10.000	mg/kg	6.2	89.1	20	75 - 125	
Barium	DUP	1727086-09	15.199	14.837		mg/kg	2.4		20		
	MS	1727086-09	15.199	116.95	100.00	mg/kg		102		75 - 125	
	MSD	1727086-09	15.199	106.59	100.00	mg/kg	9.3	91.4	20	75 - 125	
Beryllium	DUP	1727086-09	0.12619	0.11818		mg/kg	6.6		20		J
	MS	1727086-09	0.12619	9.5686	10.000	mg/kg		94.4		75 - 125	
	MSD	1727086-09	0.12619	9.3158	10.000	mg/kg	2.7	91.9	20	75 - 125	
Cadmium	DUP	1727086-09	0.20526	0.23397		mg/kg	13.1		20		J
	MS	1727086-09	0.20526	9.5803	10.000	mg/kg		93.8		75 - 125	
	MSD	1727086-09	0.20526	9.2790	10.000	mg/kg	3.2	90.7	20	75 - 125	

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

Reported: 04/02/2018 11:13  
Project: Former Northern Landfill  
Project Number: 185850429.300.0006  
Project Manager: Kirk Henning

## Total Concentrations (TTLC)

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B006562		Used client sample: Y - Description: HA-26-3, 09/25/2017 09:50									
Chromium	DUP	1727086-09	8.7689	10.117		mg/kg	14.3		20		
	MS	1727086-09	8.7689	110.59	100.00	mg/kg		102		75 - 125	
	MSD	1727086-09	8.7689	108.25	100.00	mg/kg	2.1	99.5	20	75 - 125	
Cobalt	DUP	1727086-09	1.2854	1.4551		mg/kg	12.4		20		J
	MS	1727086-09	1.2854	96.730	100.00	mg/kg		95.4		75 - 125	
	MSD	1727086-09	1.2854	96.139	100.00	mg/kg	0.6	94.9	20	75 - 125	
Copper	DUP	1727086-09	2.4479	2.7428		mg/kg	11.4		20		
	MS	1727086-09	2.4479	96.584	100.00	mg/kg		94.1		75 - 125	
	MSD	1727086-09	2.4479	92.927	100.00	mg/kg	3.9	90.5	20	75 - 125	
Lead	DUP	1727086-09	2.3324	2.7673		mg/kg	17.1		20		
	MS	1727086-09	2.3324	104.31	100.00	mg/kg		102		75 - 125	
	MSD	1727086-09	2.3324	96.345	100.00	mg/kg	7.9	94.0	20	75 - 125	
Molybdenum	DUP	1727086-09	2.7621	3.7865		mg/kg	31.3		20		A02
	MS	1727086-09	2.7621	94.873	100.00	mg/kg		92.1		75 - 125	
	MSD	1727086-09	2.7621	93.832	100.00	mg/kg	1.1	91.1	20	75 - 125	
Nickel	DUP	1727086-09	7.6138	17.564		mg/kg	79.0		20		A02
	MS	1727086-09	7.6138	104.77	100.00	mg/kg		97.2		75 - 125	
	MSD	1727086-09	7.6138	103.39	100.00	mg/kg	1.3	95.8	20	75 - 125	
Selenium	DUP	1727086-09	ND	ND		mg/kg			20		
	MS	1727086-09	ND	8.9597	10.000	mg/kg		89.6		75 - 125	
	MSD	1727086-09	ND	8.8997	10.000	mg/kg	0.7	89.0	20	75 - 125	
Silver	DUP	1727086-09	ND	ND		mg/kg			20		
	MS	1727086-09	ND	8.6293	10.000	mg/kg		86.3		75 - 125	
	MSD	1727086-09	ND	8.4972	10.000	mg/kg	1.5	85.0	20	75 - 125	
Thallium	DUP	1727086-09	ND	ND		mg/kg			20		
	MS	1727086-09	ND	101.50	100.00	mg/kg		102		75 - 125	
	MSD	1727086-09	ND	99.397	100.00	mg/kg	2.1	99.4	20	75 - 125	
Vanadium	DUP	1727086-09	13.863	32.126		mg/kg	79.4		20		Q01
	MS	1727086-09	13.863	117.08	100.00	mg/kg		103		75 - 125	
	MSD	1727086-09	13.863	114.85	100.00	mg/kg	1.9	101	20	75 - 125	
Zinc	DUP	1727086-09	14.650	15.496		mg/kg	5.6		20		
	MS	1727086-09	14.650	108.99	100.00	mg/kg		94.3		75 - 125	
	MSD	1727086-09	14.650	108.47	100.00	mg/kg	0.5	93.8	20	75 - 125	
QC Batch ID: B006616		Used client sample: N									
Total Hexavalent Chromium	DUP	1806115-20	0.51400	0.49000		mg/kg	4.8		20		J
	MS	1806115-20	0.51400	40.804	40.000	mg/kg		101		75 - 125	
	MSD	1806115-20	0.51400	40.360	40.000	mg/kg	1.1	99.6	20	75 - 125	

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**EMSL Analytical, Inc.**

464 McCormick Street San Leandro, CA 94577  
Tel/Fax: (510) 895-3675 / (510) 895-3680  
<http://www.EMSL.com / sanleandrolab@emsl.com>

EMSL Order: 091719319  
Customer ID: BCLA50  
Customer PO: 1727086  
Project ID:

Attention: Molly Meyers  
BC Laboratories, Inc.  
4100 Atlas Court  
Bakersfield, CA 93308

Phone: (661) 327-4911  
Fax: (661) 327-1918  
Received Date: 10/02/2017 10:15 AM  
Analysis Date: 10/09/2017  
Collected Date: 09/25/2017

Project: 1727086

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020  
Method(s) using Polarized Light Microscopy**

Sample	Description	Appearance	% Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
1727086-01		Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<1% Chrysotile
091719319-0001	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727086-02		Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<1% Chrysotile
091719319-0002	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727086-03		Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
091719319-0003	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727086-04		Brown/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<1% Chrysotile
091719319-0004	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727086-05		Brown/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<1% Chrysotile
091719319-0005	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727086-06		Brown/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
091719319-0006	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727086-07		Tan/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<1% Chrysotile
091719319-0007	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727086-08		Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<1% Chrysotile
091719319-0008	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727086-09		Brown/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<1% Chrysotile
091719319-0009	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727086-10		Brown/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<1% Chrysotile
091719319-0010	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727086-11		Tan/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<1% Chrysotile
091719319-0011	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727086-12		Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<1% Chrysotile
091719319-0012	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				

Initial report from: 10/09/2017 12:57:44

ASB\_PLM\_0008\_0001 - 1.78 Printed: 10/9/2017 12:57 PM

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**EMSL Analytical, Inc.**

464 McCormick Street San Leandro, CA 94577

Tel/Fax: (510) 895-3675 / (510) 895-3680

<http://www.EMSL.com> / [sanleandro@emsl.com](mailto:sanleandro@emsl.com)

EMSL Order: 091719319

Customer ID: BCLA50

Customer PO: 1727086

Project ID:

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020  
Method(s) using Polarized Light Microscopy**

Sample	Description	Appearance	Non-Asbestos		Asbestos % Type
			% Fibrous	% Non-Fibrous	
1727086-13		Brown/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<1% Chrysotile
091719319-0013 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1727086-14		Brown/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<1% Chrysotile
091719319-0014 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1727086-15		Tan/Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<1% Chrysotile
091719319-0015 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1727086-16		Black Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<1% Amosite
091719319-0016 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1727086-17		Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<1% Amosite
091719319-0017 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1727086-18		Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<1% Amosite
091719319-0018 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					

Analyst(s)

Oscar Merino (18)



Matthew Batongbacal  
or Other Approved Signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The limit of detection as stated in the method is 1%. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The test results contained within this report meet the requirements of NELAC unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from: 10/09/2017 12:57:44

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October 17, 2017

**FAL Project ID: 10977**

Ms. Molly Meyers  
BC Laboratories  
4100 Atlas Court  
Bakersfield, CA 93308

Dear Ms. Meyers,

The following results are associated with Frontier Analytical Laboratory project **10977**. This corresponds to your subcontract order number **1727086**. One solid sample was received on 10/6/2017. This sample was extracted and analyzed by EPA Method 8290 for tetra through octa chlorinated dibenzo dioxins and furans. The Toxic Equivalency (TEQ) for your sample has been calculated using the 2005 World Health Organization's (WHO's) toxic equivalency factors (TEFs). BC Laboratories requested a turnaround time of fifteen business days for project **10977**.

The following report consists of an Analytical Data section and a Sample Receipt section. The Analytical Data section contains our sample tracking log, and the analytical results. The Sample Receipt section contains your chain of custody, our sample login form and a sample photo. The attached results are specifically for the sample referenced in this report only. These results meet all National Environmental Laboratory Accreditation Program (NELAP) requirements and shall not be reproduced except in full. Frontier Analytical Laboratory's State of Oregon NELAP certificate number is **4041** and our State of California ELAP certificate number is **2934**. This report has been emailed to you as a portable document format (PDF) file. A hardcopy of this report will not be sent to you unless specifically requested.

If you have any questions regarding project **10977**, please contact me at (916) 934-0900. Thank you for choosing Frontier Analytical Laboratory for your analytical testing needs.

Sincerely,

Bradley B. Silverbush  
Director of Operations

**FRONTIER ANALYTICAL LABORATORY**  
5172 Hillsdale Circle \* El Dorado Hills, CA 95762  
Tel (916) 934-0900 \* Fax (916) 934-0999  
[www.frontieranalytical.com](http://www.frontieranalytical.com)

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## Frontier Analytical Laboratory

### Sample Tracking Log

FAL Project ID: 10977

Received on: 10/06/2017

Project Due: 10/30/2017

Storage: R3

FAL Sample ID	Dup	Client Project ID	Client Sample ID	Requested Method	Matrix	Sampling Date	Sampling Time	Hold Time Due Date
10977-001-SA	0	1727086	1727086-08	EPA 8290 D/F	Solid	09/25/2017	09:45 am	10/25/2017

000002 of 000008

5172 Hillside Circle \* El Dorado Hills, CA 95762 \* Tel (916) 934-0900 \* Fax (916) 934-0999 \* www.frontieranalytical.com

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EPA Method 8290  
PCDD/FFAL ID: 10977-001-MB  
Client ID: Method Blank  
Matrix: Solid  
Batch No: X4265Date Extracted: 10-09-2017  
Date Received: NA  
Amount: 5.00 gICal: PCDDFAL4-9-18-17  
GC Column: DB5MS  
Units: pg/gAcquired: 10-10-2017  
2005 WHO TEQ: 0.0  
Basis: Dry Weight

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.193	-	-	0.0273				
1,2,3,7,8-PeCDD	ND	0.459	-	-	0.0570				
1,2,3,4,7,8-HxCDD	ND	0.636	-	-	0.0793				
1,2,3,6,7,8-HxCDD	ND	0.654	-	-	0.0940	Total TCDD	ND	0.193	
1,2,3,7,8,9-HxCDD	ND	0.595	-	-	0.0823	Total PeCDD	ND	0.459	
1,2,3,4,6,7,8-HpCDD	ND	0.691	-	-	0.0842	Total HxCDD	ND	0.654	
OCDD	ND	0.948	-	-	0.172	Total HpCDD	ND	0.691	
2,3,7,8-TCDF	ND	0.169	-	-	0.0269				
1,2,3,7,8-PeCDF	ND	0.420	-	-	0.0449				
2,3,4,7,8-PeCDF	ND	0.445	-	-	0.0468				
1,2,3,4,7,8-HxCDF	ND	0.316	-	-	0.0437				
1,2,3,6,7,8-HxCDF	ND	0.333	-	-	0.0417				
2,3,4,6,7,8-HxCDF	ND	0.335	-	-	0.0574				
1,2,3,7,8,9-HxCDF	ND	0.456	-	-	0.0657	Total TCDF	ND	0.169	
1,2,3,4,6,7,8-HpCDF	ND	0.332	-	-	0.0747	Total PeCDF	ND	0.445	
1,2,3,4,7,8,9-HpCDF	ND	0.443	-	-	0.0883	Total HxCDF	ND	0.456	
OCDF	ND	0.831	-	-	0.170	Total HpCDF	ND	0.443	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	89.2	40.0 - 135	
13C-1,2,3,7,8-PeCDD	95.9	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	96.0	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	91.1	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	102	40.0 - 135	
13C-OCDD	89.9	40.0 - 135	
13C-2,3,7,8-TCDF	85.0	40.0 - 135	
13C-1,2,3,7,8-PeCDF	84.1	40.0 - 135	
13C-2,3,4,7,8-PeCDF	88.0	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	103	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	95.6	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	101	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	107	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	110	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	123	40.0 - 135	
13C-OCDF	109	40.0 - 135	

## Cleanup Surrogate

37Cl-2,3,7,8-TCDD 106 50.0 - 150

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1  
B Analyte is present in Method Blank  
C Chemical Interference  
D Presence of Diphenyl Ethers  
DNQ Analyte concentration is below calibration range  
E Analyte concentration is above calibration range  
F Analyte confirmation on secondary column  
J Analyte concentration is below calibration range  
M Maximum possible concentration  
ND Analyte Not Detected at Detection Limit Level  
NP Not Provided  
P Pre-filtered through a Whatman 0.7um GF/F filter  
S Sample acceptance criteria not met  
X Matrix interferences  
\* Result taken from dilution or reinjection

Analyst: 

Date: 10/17/2017

Reviewed By: 

Date: 10/17/2017

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5172 Hillside Circle \* El Dorado Hills, CA 95762 \* Tel (916) 934-0900 \* Fax (916) 934-0999 \* www.frontieranalytical.com

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EPA Method 8290  
PCDD/FFAL ID: 10977-001-OPR  
Client ID: OPR  
Matrix: Solid  
Batch No: X4265Date Extracted: 10-09-2017  
Date Received: NA  
Amount: 5.00 gICal: PCDDFAL4-9-18-17  
GC Column: DB5MS  
Units: ng/mlAcquired: 10-10-2017  
2005 WHO TEQ: NA

Compound	Conc	QC Limits	Qual
2,3,7,8-TCDD	11.6	7.00 - 13.0	
1,2,3,7,8-PeCDD	59.0	35.0 - 65.0	
1,2,3,4,7,8-HxCDD	58.1	35.0 - 65.0	
1,2,3,6,7,8-HxCDD	56.4	35.0 - 65.0	
1,2,3,7,8,9-HxCDD	54.2	35.0 - 65.0	
1,2,3,4,6,7,8-HpCDD	58.3	35.0 - 65.0	
OCDD	116	70.0 - 130	
2,3,7,8-TCDF	11.8	7.00 - 13.0	
1,2,3,7,8-PeCDF	59.6	35.0 - 65.0	
2,3,4,7,8-PeCDF	58.9	35.0 - 65.0	
1,2,3,4,7,8-HxCDF	56.9	35.0 - 65.0	
1,2,3,6,7,8-HxCDF	56.6	35.0 - 65.0	
2,3,4,6,7,8-HxCDF	57.6	35.0 - 65.0	
1,2,3,7,8,9-HxCDF	55.3	35.0 - 65.0	
1,2,3,4,6,7,8-HpCDF	57.5	35.0 - 65.0	
1,2,3,4,7,8,9-HpCDF	57.6	35.0 - 65.0	
OCDF	114	70.0 - 130	
Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	71.9	40.0 - 135	
13C-1,2,3,7,8-PeCDD	70.6	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	74.7	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	75.2	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	69.6	40.0 - 135	
13C-OCDD	63.0	40.0 - 135	
13C-2,3,7,8-TCDF	70.6	40.0 - 135	
13C-1,2,3,7,8-PeCDF	70.1	40.0 - 135	
13C-2,3,4,7,8-PeCDF	69.9	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	87.0	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	84.1	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	80.9	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	80.2	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	74.9	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	85.5	40.0 - 135	
13C-OCDF	75.7	40.0 - 135	
Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	85.6	50.0 - 150	

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- \* Result taken from dilution or reinjection

Analyst: 

Date: 10/17/2017

Reviewed By: 

Date: 10/17/2017

000004 of 000008

5172 Hillside Circle \* El Dorado Hills, CA 95762 \* Tel (916) 934-0900 \* Fax (916) 934-0999 \* www.frontieranalytical.com

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EPA Method 8290  
PCDD/FFAL ID: 10977-001-SA  
Client ID: 1727086-08  
Matrix: Solid  
Batch No: X4265Date Extracted: 10-09-2017  
Date Received: 10-06-2017  
Amount: 5.03 g  
% Solids: 93.19ICal: PCDDFAL4-9-18-17  
GC Column: DB5MS  
Units: pg/gAcquired: 10-11-2017  
2005 WHO TEQ: 61.8  
Basis: Dry Weight

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	6.34	-		6.34	0.0273				
1,2,3,7,8-PeCDD	14.4	-		14.4	0.0570				
1,2,3,4,7,8-HxCDD	8.05	-		0.805	0.0793				
1,2,3,6,7,8-HxCDD	42.4	-		4.24	0.0940	Total TCDD	24.9	-	
1,2,3,7,8,9-HxCDD	21.8	-		2.18	0.0823	Total PeCDD	68.8	-	
1,2,3,4,6,7,8-HpCDD	1940	-		19.4	0.0842	Total HxCDD	266	-	
OCDD	31600	-		9.48	0.172	Total HpCDD	3900	-	
2,3,7,8-TCDF	0.575	-	J	0.0575	0.0269				
1,2,3,7,8-PeCDF	1.04	-	J	0.0312	0.0449				
2,3,4,7,8-PeCDF	1.47	-	J	0.441	0.0468				
1,2,3,4,7,8-HxCDF	5.35	-		0.535	0.0437				
1,2,3,6,7,8-HxCDF	4.52	-	J	0.452	0.0417				
2,3,4,6,7,8-HxCDF	6.85	-		0.685	0.0574				
1,2,3,7,8,9-HxCDF	ND	0.799		-	0.0657	Total TCDF	9.48	-	
1,2,3,4,6,7,8-HpCDF	218	-		2.18	0.0747	Total PeCDF	29.9	-	
1,2,3,4,7,8,9-HpCDF	14.9	-		0.149	0.0883	Total HxCDF	200	-	
OCDF	1510	-		0.453	0.170	Total HpCDF	1060	-	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	92.3	40.0 - 135	
13C-1,2,3,7,8-PeCDD	84.9	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	95.9	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	70.2	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	91.1	40.0 - 135	
13C-OCDD	86.0	40.0 - 135	
13C-2,3,7,8-TCDF	74.5	40.0 - 135	
13C-1,2,3,7,8-PeCDF	74.4	40.0 - 135	
13C-2,3,4,7,8-PeCDF	65.1	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	90.7	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	68.4	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	80.0	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	86.1	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	81.9	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	96.8	40.0 - 135	
13C-OCDF	92.0	40.0 - 135	

## Cleanup Surrogate

37Cl-2,3,7,8-TCDD 109 50.0 - 150

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- \* Result taken from dilution or reinjection

Analyst: 

Date: 10/17/2017

Reviewed By: 

Date: 10/17/2017

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5172 Hillside Circle \* El Dorado Hills, CA 95762 \* Tel (916) 934-0900 \* Fax (916) 934-0999 \* www.frontieranalytical.com

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



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**SUBCONTRACT ORDER**

BC Laboratories  
1727086

10977  
002

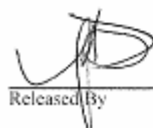
**SENDING LABORATORY:**

BC Laboratories  
4100 Atlas Ct  
Bakersfield, CA 93308  
Phone: 661-327-4911  
Fax: 661-327-1918  
Project Manager: Molly Meyers

**RECEIVING LABORATORY:**

Frontier Analytical Laboratory \$FRNTL-EINV  
5172 Hillside Circle  
El Dorado Hills, CA 95762  
Phone : (916) 934-0900  
Fax: (916) 934-0999

Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: 1727086-08	Solids	Sampled:09/25/17 09:45		
og8290s Full Scan FRNTL	10/09/17 17:00	10/25/17 09:45		
Containers Supplied:				

Released By	Date	Received By	Date
	10.5.17	Kathy Zapp	10.6.17 1100
Released By	Date	Received By	Date

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Page 1 of 1

**Frontier Analytical Laboratory****Sample Login Form**FAL Project ID: **10977**

Client:	BC Laboratories, Inc
Client Project ID:	1727086
Date Received:	10/06/2017
Time Received:	11:00 am
Received By:	KZ
Logged In By:	KZ
# of Samples Received:	1
Duplicates:	0
Storage Location:	R3

Method of Delivery:	California Overnight
Tracking Number:	C11235900269629
Shipping Container Received Intact	Yes
Custody seals(s) present?	No
Custody seals(s) intact?	No
Sample Arrival Temperature (C)	0
Cooling Method	Ice
Chain Of Custody Present?	Yes
Return Shipping Container To Client	Yes
Test aqueous sample for residual Chlorine	No
Sodium Thiosulfate Added	No
Adequate Sample Volume	Yes
Appropriate Sample Container	No
pH Range of Aqueous Sample	N/A
Anomalies or additional comments:	
Please note that the sample was received in a clear glass jar. NELAP requires samples be received in amber glass bottles or jars. Although this anomaly will not affect your results, we are required by NELAP to make a note of it. We will proceed with analysis unless directed otherwise by you.	

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



Subcontract Report for 1727086 PDF File Name: wo\_1727086\_sub\_FRNTL.pdf Page 8 of 8



10977-001-08

**SUBCONTRACT ORDER**  
BC Laboratories  
1727086

**RECEIVING LABORATORY:**  
Frontier Analytical Laboratory SFRNTL-EINV  
5172 Hillside Circle  
El Dorado Hills, CA 95762  
Phone: (916) 934-0900  
Fax: (916) 934-0999

**SENDING LABORATORY:**  
BC Laboratories  
4100 Atlas Ct  
Bakersfield, CA 93308  
Phone: 661-327-4911  
Fax: 661-327-1918  
Project Manager: Molly Meyers

Analysis	Due	Expires	Laboratory ID	Comments
Sample ID: 1727086-08 ogK290s Full Scan FRNTL Containers Supplied	Solids 10/09/17 17:50	Sampled 09/25/17 09:45 10/25/17 09:45		

Frontier Analytical Laboratory  
10977-001-SA  
Client ID: 1727086-08  
Storage: R3 (01 of 01)  
1727086-08 E  
HA-26-1  
X12: Clear Glass 250 ml (8 oz)

10.5.17  
10.6.17  
11.0.17

Released by  
Received by  
Released by  
Received by

2017/10/06

000008 of 000008

5172 Hillside Circle \* El Dorado Hills, CA 95762 \* Tel (916) 934-0900 \* Fax (916) 934-0999 \* www.frontieranalytical.com

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March 30, 2018

Ms. Molly Meyers  
BC Laboratories  
4100 Atlas Court  
Bakersfield, CA 93308

Dear Ms. Meyers,

The following results are associated with Frontier Analytical Laboratory project **11342**. This corresponds to your subcontract order **1727086**. One solid sample was received on 03/02/2018 in good condition. This sample was extracted and analyzed by EPA Method 8290 for tetra through octa chlorinated dibenzo dioxin and furans. The Toxic Equivalency (TEQ) for your sample has been calculated using the 2005 World Health Organization's (WHO's) toxic equivalency factors (TEFs). BC Laboratories requested a turnaround time of fifteen business days for project **11342**.

Please note that this sample was received past the method recommended hold time of thirty days. However EPA Method 8290 states, (Section 6.4); "Storage and holding times-All samples, except fish and adipose tissue samples, must be stored at 4°C in the dark, and should be extracted within 30 days and completely analyzed within 45 days of extraction. Note: The holding times listed in Sec. 6.4 are recommendations. PCDDs and PCDFs are very stable in a variety of matrices, and holding times under the conditions listed in Sec. 6.4 may be as high as a year for certain matrices." We can confirm your sample has been stored at the required method conditions since its receipt on 03/02/2018.

The following report consists of an Analytical Data section and a Sample Receipt section. The Analytical Data section contains our sample tracking log and the analytical results. The Sample Receipt section contains your chain of custody, our sample login form and a sample photo. The enclosed results are specifically for the sample referenced in this report only. These results shall not be reproduced except in full. Frontier Analytical Laboratory's State of Oregon NELAP certificate number is **4041**. Our State of California ELAP certificate number is **2934**. This report has been emailed to you. A hardcopy of this report will not be sent to you unless specifically requested.

If you have any questions regarding project **11342**, please feel free to contact me at 916-934-0900. Thank you for choosing Frontier Analytical Laboratory for your analytical testing needs.

Sincerely,

Thomas C. Crabtree  
Director

**FRONTIER ANALYTICAL LABORATORY**  
5172 Hillsdale Circle \* El Dorado Hills, CA 95762  
Tel (916) 934-0900 \* Fax (916) 934-0999  
www.frontieranalytical.com

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## Frontier Analytical Laboratory

### Sample Tracking Log

FAL Project ID: 11342

Received on: 03/02/2018

Project Due: 03/26/2018

Storage: R-3

FAL Sample ID	Dup	Client Project ID	Client Sample ID	Requested Method	Matrix	Sampling Date	Sampling Time	Hold Time Due Date
11342-001-SA	0	1727086	1727086-09	EPA 8290 D/F	Solid	09/25/2017	09:50 am	10/25/2017

FAL Sample ID	Notes
------------------	-------

11342-001-SA	'Please note that the sample was received past its hold time. We will proceed with analysis unless directed otherwise by you.'
--------------	--

000002 of 000008

5172 Hillside Circle \* El Dorado Hills, CA 95762 \* Tel (916) 934-0900 \* Fax (916) 934-0999 \* www.frontieranalytical.com

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EPA Method 8290  
PCDD/FFAL ID: 11342-001-MB  
Client ID: Method Blank  
Matrix: Solid  
Batch No: X4449Date Extracted: 03-24-2018  
Date Received: NA  
Amount: 5.00 gICal: PCDDFAL4-12-20-17  
GC Column: DB5MS  
Units: pg/gAcquired: 03-26-2018  
2005 WHO TEQ: 0.0  
Basis: Dry Weight

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.173	-	-	0.0273				
1,2,3,7,8-PeCDD	ND	0.317	-	-	0.0570				
1,2,3,4,7,8-HxCDD	ND	0.494	-	-	0.0793				
1,2,3,6,7,8-HxCDD	ND	0.488	-	-	0.0940	Total TCDD	ND	0.173	
1,2,3,7,8,9-HxCDD	ND	0.450	-	-	0.0823	Total PeCDD	ND	0.317	
1,2,3,4,6,7,8-HpCDD	ND	0.638	-	-	0.0842	Total HxCDD	ND	0.494	
OCDD	ND	0.933	-	-	0.172	Total HpCDD	ND	0.638	
2,3,7,8-TCDF	ND	0.135	-	-	0.0269				
1,2,3,7,8-PeCDF	ND	0.230	-	-	0.0449				
2,3,4,7,8-PeCDF	ND	0.226	-	-	0.0468				
1,2,3,4,7,8-HxCDF	ND	0.330	-	-	0.0437				
1,2,3,6,7,8-HxCDF	ND	0.385	-	-	0.0417				
2,3,4,6,7,8-HxCDF	ND	0.380	-	-	0.0574				
1,2,3,7,8,9-HxCDF	ND	0.427	-	-	0.0657	Total TCDF	ND	0.135	
1,2,3,4,6,7,8-HpCDF	ND	0.359	-	-	0.0747	Total PeCDF	ND	0.230	
1,2,3,4,7,8,9-HpCDF	ND	0.347	-	-	0.0883	Total HxCDF	ND	0.427	
OCDF	ND	0.402	-	-	0.170	Total HpCDF	ND	0.359	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	78.7	40.0 - 135	
13C-1,2,3,7,8-PeCDD	84.5	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	78.7	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	82.5	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	77.2	40.0 - 135	
13C-OCDD	72.0	40.0 - 135	
13C-2,3,7,8-TCDF	82.3	40.0 - 135	
13C-1,2,3,7,8-PeCDF	78.8	40.0 - 135	
13C-2,3,4,7,8-PeCDF	81.3	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	75.8	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	75.7	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	75.1	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	78.1	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	76.4	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	79.3	40.0 - 135	
13C-OCDF	70.9	40.0 - 135	

## Cleanup Surrogate

37Cl-2,3,7,8-TCDD 73.3 50.0 - 150

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1  
B Analyte is present in Method Blank  
C Chemical Interference  
D Presence of Diphenyl Ethers  
DNQ Analyte concentration is below calibration range  
E Analyte concentration is above calibration range  
F Analyte confirmation on secondary column  
J Analyte concentration is below calibration range  
M Maximum possible concentration  
ND Analyte Not Detected at Detection Limit Level  
NP Not Provided  
P Pre-filtered through a Whatman 0.7um GF/F filter  
S Sample acceptance criteria not met  
X Matrix interferences  
\* Result taken from dilution or reinjection

Analyst:

Date: 3/28/2018

Reviewed By:

Date: 3/30/2018

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5172 Hillside Circle \* El Dorado Hills, CA 95762 \* Tel (916) 934-0900 \* Fax (916) 934-0999 \* www.frontieranalytical.com

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EPA Method 8290  
PCDD/FFAL ID: 11342-001-OPR  
Client ID: OPR  
Matrix: Solid  
Batch No: X4449Date Extracted: 03-24-2018  
Date Received: NA  
Amount: 5.00 gICal: PCDDFAL4-12-20-17  
GC Column: DB5MS  
Units: ng/mlAcquired: 03-26-2018  
2005 WHO TEQ: NA

Compound	Conc	QC Limits	Qual
2,3,7,8-TCDD	10.5	7.00 - 13.0	
1,2,3,7,8-PeCDD	53.6	35.0 - 65.0	
1,2,3,4,7,8-HxCDD	49.1	35.0 - 65.0	
1,2,3,6,7,8-HxCDD	50.6	35.0 - 65.0	
1,2,3,7,8,9-HxCDD	48.2	35.0 - 65.0	
1,2,3,4,6,7,8-HpCDD	51.8	35.0 - 65.0	
OCDD	96.4	70.0 - 130	
2,3,7,8-TCDF	10.4	7.00 - 13.0	
1,2,3,7,8-PeCDF	49.3	35.0 - 65.0	
2,3,4,7,8-PeCDF	49.0	35.0 - 65.0	
1,2,3,4,7,8-HxCDF	51.2	35.0 - 65.0	
1,2,3,6,7,8-HxCDF	49.9	35.0 - 65.0	
2,3,4,6,7,8-HxCDF	50.7	35.0 - 65.0	
1,2,3,7,8,9-HxCDF	51.2	35.0 - 65.0	
1,2,3,4,6,7,8-HpCDF	50.8	35.0 - 65.0	
1,2,3,4,7,8,9-HpCDF	51.9	35.0 - 65.0	
OCDF	99.5	70.0 - 130	
Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	65.1	40.0 - 135	
13C-1,2,3,7,8-PeCDD	67.8	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	67.9	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	70.4	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	64.3	40.0 - 135	
13C-OCDD	56.2	40.0 - 135	
13C-2,3,7,8-TCDF	68.6	40.0 - 135	
13C-1,2,3,7,8-PeCDF	66.4	40.0 - 135	
13C-2,3,4,7,8-PeCDF	65.6	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	64.1	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	67.8	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	64.0	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	63.4	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	64.0	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	64.9	40.0 - 135	
13C-OCDF	55.6	40.0 - 135	
Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	61.3	50.0 - 150	

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- \* Result taken from dilution or reinjection

Analyst:   
Date: 3/28/2018Reviewed By:   
Date: 3/30/2018

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5172 Hillside Circle \* El Dorado Hills, CA 95762 \* Tel (916) 934-0900 \* Fax (916) 934-0999 \* www.frontieranalytical.com

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EPA Method 8290  
PCDD/FFAIL ID: 11342-001-SA  
Client ID: 1727086-09  
Matrix: Solid  
Batch No: X4449Date Extracted: 03-24-2018  
Date Received: 03-02-2018  
Amount: 5.03 g  
% Solids: 97.77ICal: PCDDFAL4-12-20-17  
GC Column: DB5MS  
Units: pg/gAcquired: 03-27-2018  
2005 WHO TEQ: 6.55  
Basis: Dry Weight

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	0.636	-	J	0.636	0.0273				
1,2,3,7,8-PeCDD	1.50	-	J	1.50	0.0570				
1,2,3,4,7,8-HxCDD	0.857	-	J	0.0857	0.0793				
1,2,3,6,7,8-HxCDD	4.61	-	J	0.461	0.0940	Total TCDD	1.40	-	M
1,2,3,7,8,9-HxCDD	2.82	-	J	0.282	0.0823	Total PeCDD	7.37	-	
1,2,3,4,6,7,8-HpCDD	215	-		2.15	0.0842	Total HxCDD	28.6	-	
OCDD	3090	-		0.927	0.172	Total HpCDD	428	-	
2,3,7,8-TCDF	ND	0.134		-	0.0269				
1,2,3,7,8-PeCDF	ND	0.217		-	0.0449				
2,3,4,7,8-PeCDF	ND	0.243		-	0.0468				
1,2,3,4,7,8-HxCDF	0.616	-	J	0.0616	0.0437				
1,2,3,6,7,8-HxCDF	0.540	-	J	0.0540	0.0417				
2,3,4,6,7,8-HxCDF	0.814	-	J	0.0814	0.0574				
1,2,3,7,8,9-HxCDF	ND	0.325		-	0.0657	Total TCDF	0.493	-	J
1,2,3,4,6,7,8-HpCDF	24.7	-		0.247	0.0747	Total PeCDF	2.61	-	J
1,2,3,4,7,8,9-HpCDF	1.73	-	J	0.0173	0.0883	Total HxCDF	20.9	-	
OCDF	161	-		0.0483	0.170	Total HpCDF	115	-	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	86.2	40.0 - 135	
13C-1,2,3,7,8-PeCDD	92.5	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	91.9	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	86.2	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	85.8	40.0 - 135	
13C-OCDD	80.7	40.0 - 135	
13C-2,3,7,8-TCDF	89.1	40.0 - 135	
13C-1,2,3,7,8-PeCDF	87.0	40.0 - 135	
13C-2,3,4,7,8-PeCDF	89.3	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	82.2	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	82.3	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	81.1	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	81.8	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	83.3	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	87.7	40.0 - 135	
13C-OCDF	77.9	40.0 - 135	

## Cleanup Surrogate

37Cl-2,3,7,8-TCDD 82.8 50.0 - 150

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- \* Result taken from dilution or reinjection

Analyst:   
Date: 3/28/2018Reviewed By:   
Date: 3/30/2018

000005 of 000008

5172 Hillside Circle \* El Dorado Hills, CA 95762 \* Tel (916) 934-0900 \* Fax (916) 934-0999 \* www.frontieranalytical.com



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



Subcontract Report for 1727086 PDF File Name: wo\_1727086\_sub\_FRNTL\_addn.pdf Page 6 of 8

**SUBCONTRACT ORDER**

BC Laboratories

1727086

11342  
00c

**SENDING LABORATORY:**

BC Laboratories  
4100 Atlas Ct  
Bakersfield, CA 93308  
Phone: 661-327-4911  
Fax: 661-327-1918  
Project Manager: Molly Meyers

**RECEIVING LABORATORY:**

Frontier Analytical Laboratory \$FRNTL-EINV  
5172 Hillsdale Circle  
El Dorado Hills, CA 95762  
Phone : (916) 934-0900  
Fax: (916) 934-0999

Analysis	Due	Expires	Laboratory ID	Comments
----------	-----	---------	---------------	----------

[REDACTED]				
[REDACTED]				

Containers Supplied:

Sample ID: 1727086-09	Solids	Sampled: 09/25/17 09:50	[REDACTED]	metals, dioxin, Cr6 added per Kirk. mm 3/1
og8290s Full Scan FRNTL	03/15/18 17:00	10/25/17 09:50		

Containers Supplied:

Released By	Date	Received By	Date
[Signature]	3.1.18	Kathy Zipp	3/2/2018 1000

Released By	Date	Received By	Date

000006 of 000008  
Page 1 of 1

**Frontier Analytical Laboratory****Sample Login Form**FAL Project ID: **11342**

Client:	BC Laboratories, Inc
Client Project ID:	1727086
Date Received:	03/02/2018
Time Received:	10:10 am
Received By:	KZ
Logged In By:	SC
# of Samples Received:	1
Duplicates:	0
Storage Location:	R-3

Method of Delivery:	Golden State Overnight
Tracking Number:	47057030118371811893
Shipping Container Received Intact	Yes
Custody seals(s) present?	No
Custody seals(s) intact?	No
Sample Arrival Temperature (C)	0
Cooling Method	Ice
Chain Of Custody Present?	Yes
Return Shipping Container To Client	Yes
Test aqueous sample for residual Chlorine	No
Sodium Thiosulfate Added	No
Adequate Sample Volume	Yes
Appropriate Sample Container	No
pH Range of Aqueous Sample	N/A
Anomalies or additional comments:	
Please note that the sample was received in a clear glass jar. NELAP requires samples be received in amber glass bottles or jars. Although this anomaly will not affect your results, we are required by NELAP to make a note of it. We will proceed with analysis unless directed otherwise by you.	

000007 of 000008

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11342  
Ooc

**SUBCONTRACT ORDER**  
BC Laboratories  
1727086

**RECEIVING LABORATORY:**  
Frontier Analytical Laboratory SFRNTL-EINV  
5172 Hillside Circle  
El Dorado Hills, CA 95762  
Phone: (916) 934-0900  
Fax: (916) 934-0999

**SENDING LABORATORY:**  
BC Laboratories  
4100 Atlas Ct  
Bakersfield, CA 93308  
Phone: 661-327-4911  
Fax: 661-327-1918  
Project Manager: Molly Meyers

Analysis	Due	Expires	Laboratory ID	Comments
metals, dioxins, Cr6 added per Kirk. mm		7 09:50 7 09:50		

11342-001-SA  
Client ID: 1727086-09  
Storage: R-3 (01 of 01)

1727086-09 D  
HA-26-3  
X12: Clear Glass 250 ml (8 oz)

3.18  
3/12/2018  
Kathleen Zipp  
Received By  
Date  
Released By  
Date  
Released By  
Date

000008 of 000008

5172 Hillside Circle \* El Dorado Hills, CA 95762 \* Tel (916) 934-0900 \* Fax (916) 934-0999 \* www.frontieranalytical.com

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 04/02/2018 11:13  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit
A01	Detection and quantitation limits are raised due to sample dilution.
A02	The difference between duplicate readings is less than the quantitation limit.
A10	Detection and quantitation limits were raised due to matrix interference.
pH1:1	pH result reported on a 1:1 dilution of sample
Q01	Sample precision is not within the control limits.
Q02	Matrix spike precision is not within the control limits.
Q03	Matrix spike recovery(s) is(are) not within the control limits.
S05	The sample holding time was exceeded.
S09	The surrogate recovery on the sample for this compound was not within the control limits.

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



Date of Report: 01/04/2018

Kirk Henning

Stantec - SLO

3437 Empresa Drive, Suite A

Suite A

San Luis Obispo, CA 93401

Client Project: 185850429.300.0006

BCL Project: Former Northern Landfill

BCL Work Order: 1727087

Invoice ID: B281752

Enclosed are the results of analyses for samples received by the laboratory on 9/25/2017. If you have any questions concerning this report, please feel free to contact me.

Revised Report: This report supercedes Report ID 1000658042

Sincerely,

Contact Person: Molly Meyers  
Client Service Rep

Stuart Buttram  
Technical Director

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

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<b>1727087-02 - HA-31-1.5</b>	
Total Petroleum Hydrocarbons.....	12
<b>1727087-03 - HA-31-3</b>	
Total Petroleum Hydrocarbons.....	13
<b>1727087-04 - HA-31-5</b>	
Total Petroleum Hydrocarbons.....	14
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Total Petroleum Hydrocarbons.....	15
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Total Petroleum Hydrocarbons.....	18
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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1727087 Page 1 of 3

# Chain of Custody Form

Client: Starter		Project #: 185850429.300.0006		Analysis Requested		Comments: Will call for analyses	
Attn: Kirk Henning		Project Name: P66 Former Northern		Please refer to the back of this page for completion instructions and method legend.			
Street Address: 9437 Empress Drive, Suite A		City, State, Zip: San Luis Obispo, CA 93401		Sampler(s): Jim Raney			
Phone: (805) 250-2854 Fax:		Email: Kirk.Henning@starter.com		Work Order #:			
Sample #	Description	Date Sampled	Time Sampled	Sample Matrix	Result Request	**Surcharge	Notes
1	HA-33-8	09/22/17	08:15	Soil	<input type="checkbox"/> STD <input type="checkbox"/> 5 Day** <input type="checkbox"/> 2 Day** <input type="checkbox"/> 1 Day**		
2	HA-31-5		08:50	Soil			
3	HA-31-3		09:35	Soil			
4	HA-31-5		09:40	Soil			
5	HA-31-8		10:00	Soil			
6	HA-30-1		10:15	Soil			
7	HA-30-3		10:20	Soil			
8	HA-30-5		10:25	Soil			
9	HA-30-8		10:45	Soil			
10	HA-29-1		12:37	Soil			
11	HA-29-3		12:42	Soil			
12	HA-29-6		12:47	Soil			
13	HA-29-8		12:52	Soil			
14	HA-28-1		13:20	Soil			

Billing		EDF Required? Geotracker		Global ID (Needed for EDF)		System # (Needed for EDF)	
Client: Use P66 Rates	Same as above	<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	1. Relinquished By	2. Relinquished By	1. Received By	2. Received By
Address:							
City:							
State:							
Zip:							
Attn:							
P.O. #:							

BC Laboratories, Inc. - 4100 Atlas Ct. - Bakersfield, CA 93308 - 661.327.4911 - Fax: 661.327.1918 - www.bclabs.com

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1727087 Page 2 of 3

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page 1 of 2							
Submission #: 17-27087				mc 926 2							
<b>SHIPPING INFORMATION</b>		<b>SHIPPING CONTAINER</b>		<b>FREE LIQUID</b>							
Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/>		Ice Chest <input checked="" type="checkbox"/> None <input type="checkbox"/> Box <input type="checkbox"/>		YES <input type="checkbox"/> NO <input type="checkbox"/>							
BC Lab Field Service <input checked="" type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		Other <input type="checkbox"/> (Specify) _____		W / S							
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: _____											
Custody Seals: Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments: _____											
Intact? Yes <input type="checkbox"/> No <input type="checkbox"/> Intact? Yes <input type="checkbox"/> No <input type="checkbox"/>											
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											
COC Received <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Emissivity: 0.98 Container: glass Thermometer ID: 208		Date/Time: 9/25/2012							
Temperature: (A) 1.0 °C / (C) 6.7 °C				Analyst Init: MSP							
<b>SAMPLE CONTAINERS</b>		<b>SAMPLE NUMBERS</b>									
		1	2	3	4	5	6	7	8	9	10
QT PE UNPRES											
4oz / 8oz / 16oz PE UNPRES											
2oz Cr <sup>4+</sup>											
QT INORGANIC CHEMICAL METALS											
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz											
PT CYANIDE											
PT NITROGEN FORMS											
PT TOTAL SULFIDE											
2oz. NITRATE / NITRITE											
PT TOTAL ORGANIC CARBON											
PT CHEMICAL OXYGEN DEMAND											
PLA PHENOLICS											
40ml VOA VIAL TRAVEL BLANK											
40ml VOA VIAL											
QT EPA 1664											
PT ODOR											
RADIOLOGICAL											
BACTERIOLOGICAL											
40 ml VOA VIAL- 504											
QT EPA 503/603/803											
QT EPA 515.1/8150											
QT EPA 525											
QT EPA 525 TRAVEL BLANK											
40ml EPA 547											
40ml EPA 531.1											
8oz EPA 548											
QT EPA 549											
QT EPA 8015M											
QT EPA 8270											
8oz / 16oz / 32oz AMBER											
8oz / 16oz / 32oz JAR		A	A	A	A	A	A	A	A	A	A
SOIL SLEEVE											
PCB VIAL											
PLASTIC BAG											
TEDLAR BAG											
FERROUS IRON											
INCORE											
SMART KIT											
SUMMA CANISTER											
Comments: _____											
Sample Numbering Completed By: JPL Date/Time: 9-26-12 MSP											
= Actual / C = Corrected											
Rev 21 05/23/2016 [S:\WP\Declined\Perfor\CLAB_DOCS\FORMS\SUSAN\REC\rev 21]											

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1727087 Page 3 of 3

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page 2 of 3							
Submission #: 17-27087				1727087							
<b>SHIPPING INFORMATION</b>		<b>SHIPPING CONTAINER</b>		<b>FREE LIQUID</b>							
Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/> BC Lab Field Service <input checked="" type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		Ice Chest <input checked="" type="checkbox"/> None <input type="checkbox"/> Box <input type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		YES <input type="checkbox"/> NO <input type="checkbox"/> W / S							
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: _____											
Custody Seals: Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments: _____											
Intact? Yes <input type="checkbox"/> No <input type="checkbox"/> Intact? Yes <input type="checkbox"/> No <input type="checkbox"/>											
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											
COC Received <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Emissivity: 0.98 Container: coloss Thermometer ID: 208		Date/Time: 9/25/2012							
		Temperature: (A) 1.0 °C / (C) 6.7 °C		Analyst Init: KSP							
<b>SAMPLE CONTAINERS</b>		<b>SAMPLE NUMBERS</b>									
		1	2	3	4	5	6	7	8	9	10
IT PE UNPRES											
oz / 8oz / 16oz PE UNPRES											
oz Cr <sup>4</sup>											
IT INORGANIC CHEMICAL METALS											
NORGANIC CHEMICAL METALS 4oz / 8oz / 16oz											
T CYANIDE											
T NITROGEN FORMS											
T TOTAL SULFIDE											
oz NITRATE / NITRITE											
T TOTAL ORGANIC CARBON											
T CHEMICAL OXYGEN DEMAND											
1A PHENOLICS											
0ml VOA VIAL TRAVEL BLANK											
0ml VOA VIAL											
T EPA 1664											
T ODOR											
ADIOLOGICAL											
ACTERIOLOGICAL											
0 ml VOA VIAL- 504											
T EPA 508/608/8080											
T EPA 515.1/8150											
T EPA 525											
T EPA 525 TRAVEL BLANK											
1ml EPA 547											
1ml EPA 531.1											
12 EPA 548											
T EPA 549											
T EPA 8015M											
T EPA 8270											
12 / 16oz / 32oz AMBER											
12 / 16oz / 32oz CLEAR		A	A	A	A						
OIL SLEEVE											
CB VIAL											
ASTIC BAG											
EDLAR BAG											
IRROUS IRON											
SCORE											
AART KIT											
MMA CANISTER											
Comments: _____											
Sample Numbering Completed By: JPL Date/Time: 9-26-17											
= Actual / C = Corrected											
Rev 21 05/23/2016											
[S:\WP\Doc\WordPerfect\LAB_DOCS\FORMS\15\AMR\Cre 200											

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/04/2018 13:21  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1727087-01	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727087-01	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-33-8
1727087-01	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/25/2017 21:12
1727087-01	<b>Sampling Date:</b>	09/22/2017 08:15
	<b>Sample Depth:</b>	---
1727087-01	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727087-01	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727087-01	<b>Location ID (FieldPoint):</b>	HA-33
	<b>Matrix:</b>	SO
1727087-01	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727087-02	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727087-02	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-31-1.5
1727087-02	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/25/2017 21:12
1727087-02	<b>Sampling Date:</b>	09/22/2017 08:50
	<b>Sample Depth:</b>	---
1727087-02	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727087-02	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727087-02	<b>Location ID (FieldPoint):</b>	HA-31
	<b>Matrix:</b>	SO
1727087-02	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727087-03	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727087-03	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-31-3
1727087-03	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/25/2017 21:12
1727087-03	<b>Sampling Date:</b>	09/22/2017 09:35
	<b>Sample Depth:</b>	---
1727087-03	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727087-03	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727087-03	<b>Location ID (FieldPoint):</b>	HA-31
	<b>Matrix:</b>	SO
1727087-03	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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**Reported:** 01/04/2018 13:21  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1727087-04	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727087-04	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-31-5
1727087-04	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/25/2017 21:12
1727087-04	<b>Sampling Date:</b>	09/22/2017 09:40
	<b>Sample Depth:</b>	---
1727087-04	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727087-04	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727087-04	<b>Location ID (FieldPoint):</b>	HA-31
	<b>Matrix:</b>	SO
1727087-04	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727087-05	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727087-05	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-31-8
1727087-05	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/25/2017 21:12
1727087-05	<b>Sampling Date:</b>	09/22/2017 10:00
	<b>Sample Depth:</b>	---
1727087-05	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727087-05	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727087-05	<b>Location ID (FieldPoint):</b>	HA-31
	<b>Matrix:</b>	SO
1727087-05	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727087-06	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727087-06	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-30-1
1727087-06	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/25/2017 21:12
1727087-06	<b>Sampling Date:</b>	09/22/2017 10:15
	<b>Sample Depth:</b>	---
1727087-06	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727087-06	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727087-06	<b>Location ID (FieldPoint):</b>	HA-30
	<b>Matrix:</b>	SO
1727087-06	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
1727087-07	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/25/2017 21:12
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/22/2017 10:20
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-30-3	<b>Lab Matrix:</b> Solids
	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-30
			Matrix: SO
			Sample QC Type (SACode): CS
1727087-08	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/25/2017 21:12
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/22/2017 10:25
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-30-5	<b>Lab Matrix:</b> Solids
	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-30
			Matrix: SO
			Sample QC Type (SACode): CS
1727087-09	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/25/2017 21:12
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/22/2017 10:45
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-30-8	<b>Lab Matrix:</b> Solids
	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-30
			Matrix: SO
			Sample QC Type (SACode): CS

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**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1727087-10	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727087-10	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-29-1
1727087-10	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/25/2017 21:12
1727087-10	<b>Sampling Date:</b>	09/22/2017 12:37
	<b>Sample Depth:</b>	---
1727087-10	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727087-10	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727087-10	<b>Location ID (FieldPoint):</b>	HA-29
	<b>Matrix:</b>	SO
1727087-10	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727087-11	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727087-11	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-29-3
1727087-11	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/25/2017 21:12
1727087-11	<b>Sampling Date:</b>	09/22/2017 12:42
	<b>Sample Depth:</b>	---
1727087-11	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727087-11	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727087-11	<b>Location ID (FieldPoint):</b>	HA-29
	<b>Matrix:</b>	SO
1727087-11	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727087-12	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727087-12	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-29-6
1727087-12	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/25/2017 21:12
1727087-12	<b>Sampling Date:</b>	09/22/2017 12:47
	<b>Sample Depth:</b>	---
1727087-12	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727087-12	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727087-12	<b>Location ID (FieldPoint):</b>	HA-29
	<b>Matrix:</b>	SO
1727087-12	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1727087-13	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727087-13	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-29-8
1727087-13	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/25/2017 21:12
1727087-13	<b>Sampling Date:</b>	09/22/2017 12:52
	<b>Sample Depth:</b>	---
1727087-13	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727087-13	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727087-13	<b>Location ID (FieldPoint):</b>	HA-29
	<b>Matrix:</b>	SO
1727087-13	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727087-14	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727087-14	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-28-1
1727087-14	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/25/2017 21:12
1727087-14	<b>Sampling Date:</b>	09/22/2017 13:20
	<b>Sample Depth:</b>	---
1727087-14	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727087-14	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727087-14	<b>Location ID (FieldPoint):</b>	HA-28
	<b>Matrix:</b>	SO
1727087-14	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727087-01	<b>Client Sample Name:</b>	Former Northern Landfill, HA-33-8, 9/22/2017 8:15:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	86.0	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 12:40	10/05/17 21:24	AS1	GC-13	0.993	B[J]0158

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**Reported:** 01/04/2018 13:21  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727087-02	<b>Client Sample Name:</b>	Former Northern Landfill, HA-31-1.5, 9/22/2017 8:50:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	380	94	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	190	22	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>2600</b>	<b>mg/kg</b>	<b>380</b>	<b>120</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	85.0	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 12:40	10/06/17 14:47	AS1	GC-13	18.750	BJ0158

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**Reported:** 01/04/2018 13:21  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727087-03	<b>Client Sample Name:</b>	Former Northern Landfill, HA-31-3, 9/22/2017 9:35:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	1700	420	EPA-8015B/FFP	ND	A01	1
TPH - Diesel (FFP)	ND	mg/kg	830	100	EPA-8015B/FFP	ND	A01	1
<b>TPH - Motor Oil</b>	<b>7300</b>	<b>mg/kg</b>	<b>1700</b>	<b>540</b>	<b>EPA-8015B/FFP</b>	ND	<b>A01</b>	1
Tetracosane (Surrogate)	65.7	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		A01	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 12:40	10/06/17 03:24	AS1	GC-13	83.333	BJ0158

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**Reported:** 01/04/2018 13:21  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727087-04	<b>Client Sample Name:</b>	Former Northern Landfill, HA-31-5, 9/22/2017 9:40:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>180</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	70.1	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 12:40	10/06/17 02:16	AS1	GC-13	1.003	BJ0158

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727087-05	<b>Client Sample Name:</b>	Former Northern Landfill, HA-31-8, 9/22/2017 10:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>170</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	80.7	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 12:40	10/06/17 01:53	AS1	GC-13	1.017	BJ0158

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**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727087-06	<b>Client Sample Name:</b>	Former Northern Landfill, HA-30-1, 9/22/2017 10:15:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	430	110	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	210	26	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>1500</b>	<b>mg/kg</b>	<b>430</b>	<b>140</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	86.0	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 12:40	10/06/17 01:30	AS1	GC-13	21.429	BJ0158

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727087-07	<b>Client Sample Name:</b>	Former Northern Landfill, HA-30-3, 9/22/2017 10:20:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	460	120	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	230	28	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>3200</b>	<b>mg/kg</b>	<b>460</b>	<b>150</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	89.3	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 12:40	10/06/17 15:10	AS1	GC-13	23.077	BJ0158

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727087-08	<b>Client Sample Name:</b>	Former Northern Landfill, HA-30-5, 9/22/2017 10:25:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>18</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND	<b>J</b>	<b>1</b>
Tetracosane (Surrogate)	81.4	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 12:40	10/05/17 22:08	AS1	GC-13	1.007	B[J]0158

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/04/2018 13:21  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727087-09	<b>Client Sample Name:</b>	Former Northern Landfill, HA-30-8, 9/22/2017 10:45:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>23</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	92.9	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 12:40	10/05/17 22:53	AS1	GC-13	1.003	BJ0158

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/04/2018 13:21  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727087-10	<b>Client Sample Name:</b>	Former Northern Landfill, HA-29-1, 9/22/2017 12:37:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	320	79	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	160	19	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>420</b>	<b>mg/kg</b>	<b>320</b>	<b>100</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	76.6	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 12:40	10/05/17 23:15	AS1	GC-13	15.789	BJ0158

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/04/2018 13:21  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727087-11	<b>Client Sample Name:</b>	Former Northern Landfill, HA-29-3, 9/22/2017 12:42:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>73</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	84.3	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 12:40	10/06/17 01:07	AS1	GC-13	1.010	BJ0158

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San Luis Obispo, CA 93401

**Reported:** 01/04/2018 13:21  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727087-12	<b>Client Sample Name:</b>	Former Northern Landfill, HA-29-6, 9/22/2017 12:47:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>42</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	73.7	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 12:40	10/06/17 00:45	AS1	GC-13	1.007	B[J]0158

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3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/04/2018 13:21  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727087-13	<b>Client Sample Name:</b>	Former Northern Landfill, HA-29-8, 9/22/2017 12:52:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>16</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND	<b>J</b>	<b>1</b>
Tetracosane (Surrogate)	86.0	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 12:40	10/05/17 22:31	AS1	GC-13	1.014	B[J]0158

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3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/04/2018 13:21  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727087-14	<b>Client Sample Name:</b>	Former Northern Landfill, HA-28-1, 9/22/2017 1:20:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	56.7	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	09/29/17 12:40	10/05/17 21:46	AS1	GC-13	1.003	BJ0158

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/04/2018 13:21  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J0158</b>						
TPH - Gasoline	B[J0158-BLK1	ND	mg/kg	20	5.0	
TPH - Diesel (FFP)	B[J0158-BLK1	ND	mg/kg	10	1.2	
TPH - Motor Oil	B[J0158-BLK1	ND	mg/kg	20	6.5	
<b>Tetracosane (Surrogate)</b>	<b>B[J0158-BLK1</b>	<b>89.4</b>	<b>%</b>	<b>20 - 145 (LCL - UCL)</b>		

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3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/04/2018 13:21  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: B[J0158										
TPH - Diesel (FFP)	B[J0158-BS1	LCS	73.972	83.333	mg/kg	88.8		64 - 124		
Tetracosane (Surrogate)	B[J0158-BS1	LCS	2.9820	3.3347	mg/kg	89.4		20 - 145		



**Laboratories, Inc.**

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/04/2018 13:21  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J0158]		Used client sample: Y - Description: HA-29-8, 09/22/2017 12:52									
TPH - Diesel (FFP)	MS	1727087-13	ND	80.367	84.746	mg/kg		94.8		52 - 131	
	MSD	1727087-13	ND	62.110	83.893	mg/kg	25.6	74.0	30	52 - 131	
Tetracosane (Surrogate)	MS	1727087-13	ND	3.2856	3.3912	mg/kg		96.9		20 - 145	
	MSD	1727087-13	ND	2.5107	3.3570	mg/kg	26.7	74.8		20 - 145	

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### EMSL Analytical, Inc.

464 McCormick Street San Leandro, CA 94577  
Tel/Fax: (510) 895-3675 / (510) 895-3680  
<http://www.EMSL.com> / [sanleandro@emsl.com](mailto:sanleandro@emsl.com)

EMSL Order: 091719288

Customer ID: BCLA50

Customer PO: 1727087

Project ID:

Attention: Molly Meyers  
BC Laboratories, Inc.  
4100 Atlas Court  
Bakersfield, CA 93308

Phone: (661) 327-4911

Fax: (661) 327-1918

Received Date: 10/02/2017 10:15 AM

Analysis Date: 10/09/2017

Collected Date: 09/22/2017

Project: 1727087

### Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy

Sample	Description	Appearance	% Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
1727087-01		Tan Non-Fibrous Homogeneous		50% Quartz 50% Non-fibrous (Other)	None Detected
091719288-0001	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep.				
1727087-02		Brown Non-Fibrous Homogeneous		50% Quartz 50% Non-fibrous (Other)	<1% Chrysotile
091719288-0002	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep.				
1727087-03		Black Non-Fibrous Homogeneous		50% Quartz 15% Matrix 35% Non-fibrous (Other)	<1% Chrysotile
091719288-0003	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep.				
1727087-04		Tan Non-Fibrous Homogeneous		50% Quartz 50% Non-fibrous (Other)	<1% Chrysotile
091719288-0004	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep.				
1727087-05		Tan Non-Fibrous Homogeneous		50% Quartz 5% Matrix 45% Non-fibrous (Other)	<1% Chrysotile
091719288-0005	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep.				
1727087-06		Tan Non-Fibrous Homogeneous		50% Quartz 50% Non-fibrous (Other)	<1% Chrysotile
091719288-0006	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep.				
1727087-07		Tan Non-Fibrous Homogeneous		30% Quartz 15% Ca Carbonate 20% Gypsum 35% Non-fibrous (Other)	<1% Chrysotile
091719288-0007	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep.				
1727087-08		Tan Non-Fibrous Homogeneous		50% Quartz 6% Matrix 44% Non-fibrous (Other)	<1% Chrysotile
091719288-0008	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep.				
1727087-09		Tan Non-Fibrous Homogeneous		50% Quartz 10% Matrix 40% Non-fibrous (Other)	<1% Chrysotile
091719288-0009	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep.				
1727087-10		Tan Non-Fibrous Homogeneous		50% Quartz 10% Matrix 40% Non-fibrous (Other)	<1% Chrysotile
091719288-0010	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep.				
1727087-11		Brown Non-Fibrous Homogeneous		50% Quartz 10% Matrix 40% Non-fibrous (Other)	<1% Chrysotile
091719288-0011	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep.				
1727087-12		Tan Non-Fibrous Homogeneous		50% Quartz 5% Matrix 45% Non-fibrous (Other)	<1% Chrysotile
091719288-0012	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep.				

Initial report from: 10/09/2017 11:44:03

ASB\_PLM\_0008\_0001 - 1.78 Printed: 10/9/2017 11:44 AM

Page 1 of 2

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**EMSL Analytical, Inc.**

464 McCormick Street San Leandro, CA 94577

Tel/Fax: (510) 895-3675 / (510) 895-3680

<http://www.EMSL.com / sanleandrolab@emsl.com>

EMSL Order: 091719288

Customer ID: BCLA50

Customer PO: 1727087

Project ID:

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020  
Method(s) using Polarized Light Microscopy**

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
1727087-13		Tan		50% Quartz	<1% Chrysotile
		Non-Fibrous		10% Matrix	
091719288-0013		Homogeneous		40% Non-fibrous (Other)	
Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1727087-14		Tan		50% Quartz	<1% Chrysotile
		Non-Fibrous		50% Non-fibrous (Other)	
091719288-0014		Homogeneous			
Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					

Analyst(s)

Shane Heisser (14)

Matthew Batongbacal  
or Other Approved Signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The limit of detection as stated in the method is 1%. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The test results contained within this report meet the requirements of NELAC unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from: 10/09/2017 11:44:03

ASB\_PLM\_0008\_0001 - 1.78 Printed: 10/9/2017 11:44 AM

Page 2 of 2

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/04/2018 13:21  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

### Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit
A01	Detection and quantitation limits are raised due to sample dilution.



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



Date of Report: 01/19/2018

Kirk Henning

Stantec - SLO

3437 Empresa Drive, Suite A

Suite A

San Luis Obispo, CA 93401

Client Project: 185850429.300.0006

BCL Project: Former Northern Landfill

BCL Work Order: 1727448

Invoice ID: B282322, B289256

Enclosed are the results of analyses for samples received by the laboratory on 9/26/2017. If you have any questions concerning this report, please feel free to contact me.

Revised Report: This report supercedes Report ID 1000691037

Sincerely,

Contact Person: Molly Meyers

Client Service Rep

Stuart Buttram

Technical Director

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

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## Chain of Custody Form

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## Analysis Requested

Comments:

Please refer to the back of this page for completion instructions and method legend.

Report To: Client: <b>Stantec</b>		Project #: <b>18585H423_200006</b>	
Attn: <b>Kirk Henning</b>		Project Name: <b>Former Northern Landfill</b>	
Street Address: <b>3423 Empressa Drive, Suite A</b>			
City, State, Zip: <b>San Luis Obispo, CA 93401</b>		Sample(s): <b>Jim Raney</b>	
Phone: <b>(805) 250-2854</b> Fax:			
Email: <b>Kirk.Henning@stantec.com</b>			
Work Order #: <b>17-21448</b>			
Sample #	Description	Date Sampled	Time Sampled
-1	HA-24-8	09/26/17	07:30
-2	HA-23-1		07:45
-3	HA-23-3		07:50
-4	HA-23-5		07:55
-5	HA-23-8		08:05
-6	HA-22-1		08:30
-7	HA-22-3		08:45
-8	HA-22-5		08:50
-9	HA-22-8		09:00
-10	HA-21-1		10:30
-11	HA-21-3		10:35
-12	HA-21-5		10:39
-13	HA-21-8	N	10:45
-14	HA-20-1	09/26/17	11:10 AM
<b>Billing</b>		Global ID (Reserved for EDF)	
Same as above <input checked="" type="checkbox"/>		EDF Required? Geotracker	
Client:		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Address:		1. Requisitioned	
City:		2. Relinquished	
State		3. Relinquished	
Zip		Send Copy to State of CA? (EDT)	
Attn:		<input type="checkbox"/> Yes <input type="checkbox"/> No	
P.O. #:			

BC Laboratories, Inc. - 4100 Atlas Ct. - Bakersfield, CA 93308 - 661.327.4911 - Fax: 661.327.1918 - [www.bclabs.com](http://www.bclabs.com)

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Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1727448 Page 2 of 7

# Chain of Custody Form

Page 2 of 2

## Analysis Requested

Comments:

Please refer to the back of this page for completion instructions and method legend.

Sample Matrix

Sludge  
Drinking Water  
Ground Water  
Waste Water  
Other

Result Request "Surcharge"

☐ STD ☐ 5 Day\*\* ☐ 2 Day\*\* ☐ 1 Day\*\*  
(18 hrs)

Notes

Report To: **Client: Stattec**  
Project #: **10850429.300.0006**  
Attn: **Kirk Henning**  
Project Name: **Alto Farmer Northland**  
Street Address: **3437 Empress Drive, Suite A**  
City, State, Zip: **San Luis Obispo, CA 93401**  
Phone: **(805) 250-2854** Fax:  
Email: **Kirk.Henning@stattec.com**  
Work Order #: **17-27448**

Sample #	Description	Date Sampled	Time Sampled
-15	HA-20-3	09/26/17	11:15
-16	HA-20-5		11:20
-17	HA-20-8		11:30
-18	HA-36-1		13:10
-19	HA-36-3		13:15
-20	HA-36-5		13:20
-21	HA-36-8		13:30

## Billing

Client:

Address:

City:

State:

Zip:

Attn:

P.O. #:

☒ Same as above

EDF Required?  
Geotracker

☐ Yes ☐ No

Send Copy to  
State of CA? (EDT)

☐ Yes ☐ No

Global ID  
(Needed for EDF)

1. Relinquished By

2. Relinquished By

3. Relinquished By

System #  
(Needed for EDT)

1. Received By

2. Received By

3. Received By

Date

Time

Date

Time

Date

Time

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## Chain of Custody Form

[illegible]

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Chain of Custody Form



Client Information		Project Information		Analysis Requested		Comments	
Client:	Project #:	Project Name:	Project Name:	Analysis Requested	Comments	Analysis Requested	Comments
Street Address:		Sampler(s):		Sample Matrix		Result Request **Surcharge	
City, State, Zip:		Phone:		Waste Water		<input type="checkbox"/> STD <input type="checkbox"/> 5 Day** <input type="checkbox"/> 2 Day** <input type="checkbox"/> 1 Day**	
Fax:		Email:		Ground Water		Notes	
Work Order #: 17-27448		Description		Drinking Water			
Sample #	Date Sampled	Time Sampled		Sludge			
-15	HA-20-3			Soil			
-16	HA-20-5						
-17	HA-20-8						
-18	HA-36-1						
-19	HA-36-3						
-20	HA-36-5						
-21	HA-36-8						

Billing		EDF Required?		Global ID		System #	
Client:	Same as above	Geotracker	Global ID	1. Relinquished By	1. Received By	2. Relinquished By	2. Received By
Address:	<input checked="" type="checkbox"/> Use Above Rates	<input type="checkbox"/> Yes <input type="checkbox"/> No	(Needed for EDT)	Date	Date	Date	Date
City:	State	Send Copy to State of CA? (EDT)		Time	Time	Time	Time
Attn:		<input type="checkbox"/> Yes <input type="checkbox"/> No					
P.O. #:							

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1727448 Page 5 of 7

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page 1 of 3							
Submission #: <b>17-27448</b>											
<b>SHIPPING INFORMATION</b> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/> BC Lab Field Service <input checked="" type="checkbox"/> Other <input type="checkbox"/> (Specify) _____			<b>SHIPPING CONTAINER</b> Ice Chest <input checked="" type="checkbox"/> None <input type="checkbox"/> Box <input type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		<b>FREE LIQUID</b> YES <input type="checkbox"/> NO <input type="checkbox"/> W / S						
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: _____											
Custody Seals: Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments: <b>2</b>											
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match CDC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											
<b>COC Received</b> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Emissivity: <b>0.98</b> Container: <b>16oz</b> Thermometer ID: <b>208</b> Temperature: (A) <b>1.8</b> °C / (C) <b>1.5</b> °C		Date/Time: <b>9/26/2020</b> Analyst Init: <b>GSP</b>							
<b>SAMPLE CONTAINERS</b>		<b>SAMPLE NUMBERS</b>									
		1	2	3	4	5	6	7	8	9	10
QT PE UNPRES											
4oz / 8oz / 16oz PE UNPRES											
2oz Cr <sup>4</sup>											
QT INORGANIC CHEMICAL METALS											
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz											
PT CYANIDE											
PT NITROGEN FORMS											
PT TOTAL SULFIDE											
2oz NITRATE / NITRITE											
PT TOTAL ORGANIC CARBON											
PT CHEMICAL OXYGEN DEMAND											
P4A PHENOLICS											
40ml VOA VIAL TRAVEL BLANK											
40ml VOA VIAL											
QT EPA 1664											
PT ODOR											
RADIOLOGICAL											
BACTERIOLOGICAL											
40 ml VOA VIAL- 504											
QT EPA 508/508/508											
QT EPA 515.1/515											
QT EPA 525											
QT EPA 525 TRAVEL BLANK											
40ml EPA 547											
40ml EPA 531.1											
8oz EPA 548											
QT EPA 549											
QT EPA 8015M											
QT EPA 8270											
8oz / 16oz / 32oz AMBER		A	A	A	A	A	A	A	A	A	A
8oz / 16oz / 32oz JAR											
SOIL SLEEVE											
PCB VIAL											
PLASTIC BAG											
TEDLAR BAG											
FERROUS IRON											
ENCORE											
SMART KIT											
SUMMA CANISTER											

Comments:

Sample Numbering Completed By: **kjs**

Date/Time: **9-28-17 1300**

Rev 21 06/23/2016

A = Actual / C = Corrected

IS:\WPDoc\WardPerfectLAB\_DOC5\FORMS\15AMRECrev 201

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1727448 Page 6 of 7

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page <u>2</u> Of <u>3</u>							
Submission #: <u>17-27448</u>											
SHIPPING INFORMATION			SHIPPING CONTAINER		FREE LIQUID						
Fed Ex <input type="checkbox"/>	UPS <input type="checkbox"/>	Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/>	Ice Chest <input checked="" type="checkbox"/>	None <input type="checkbox"/> Box <input type="checkbox"/>	YES <input type="checkbox"/> NO <input type="checkbox"/>						
BC Lab Field Service <input checked="" type="checkbox"/> Other <input type="checkbox"/> (Specify) _____			Other <input type="checkbox"/> (Specify) _____		W / S						
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: _____											
Custody Seals Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments: <u>2</u>											
Intact? Yes <input type="checkbox"/> No <input type="checkbox"/> Intact? Yes <input type="checkbox"/> No <input type="checkbox"/>											
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											
COC Received		Emissivity: <u>0.98</u>	Container: <u>11/12/13</u>	Thermometer ID: <u>208</u>	Date/Time <u>9/26/2010</u>						
<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Temperature: (A) <u>1.8</u> °C (C) <u>1.5</u> °C	Analyst Init <u>GSP</u>								
SAMPLE CONTAINERS		SAMPLE NUMBERS									
		1	2	3	4	5	6	7	8	9	10
QT PE UNPRES											
4oz / 8oz / 16oz PE UNPRES											
2oz Cr <sup>6+</sup>											
QT INORGANIC CHEMICAL METALS											
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz											
PT CYANIDE											
PT NITROGEN FORMS											
PT TOTAL SULFIDE											
2oz NITRATE / NITRITE											
PT TOTAL ORGANIC CARBON											
PT CHEMICAL OXYGEN DEMAND											
PIA PHENOLICS											
40ml VOA VIAL TRAVEL BLANK											
40ml VOA VIAL											
QT EPA 1664											
PT ODOR											
RADIOLOGICAL											
BACTERIOLOGICAL											
40 ml VOA VIAL - 504											
QT EPA 505/608/8080											
QT EPA 515.1/8150											
QT EPA 525											
QT EPA 525 TRAVEL BLANK											
40ml EPA 547											
40ml EPA 531.1											
8oz EPA 548											
QT EPA 549											
QT EPA 8015M											
QT EPA 8270											
8oz / 16oz / 32oz JAR		A	A	A							
8oz / 16oz / 32oz JAR											
SOIL SLEEVE											
PCB VIAL											
PLASTIC BAG											
TEDLAR BAG											
FERROUS IRON											
ENCORE											
SMART KIT											
SUMMA CANISTER											

Comments: \_\_\_\_\_  
Sample Numbering Completed By: KJG Date/Time: 9-28-17 1301 Rev 21 05/23/2016  
A = Actual / C = Corrected [S:\WPDoc\WordPerfect\LAB\_DOC\FORMS\SAMRECRev 21]

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1727448 Page 7 of 7

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page 3 Of 3	
Submission #: <b>17-27448</b>					
<b>SHIPPING INFORMATION</b>			<b>SHIPPING CONTAINER</b>		<b>FREE LIQUID</b>
Fed Ex <input type="checkbox"/>	UPS <input type="checkbox"/>	Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/>	Ice Chest <input checked="" type="checkbox"/>	None <input type="checkbox"/> Box <input type="checkbox"/>	YES <input type="checkbox"/> NO <input type="checkbox"/>
BC Lab Field Service <input checked="" type="checkbox"/> Other <input type="checkbox"/> (Specify) _____			Other <input type="checkbox"/> (Specify) _____		W / S
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: _____					
Custody Seals: Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments: _____					
Intact? Yes <input type="checkbox"/> No <input type="checkbox"/> Intact? Yes <input type="checkbox"/> No <input type="checkbox"/>					
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>					
COC Received		Emissivity: <b>0.98</b>	Container: <b>Amber</b>	Thermometer ID: <b>208</b>	Date/Time: <b>7/26/2020</b>
<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Temperature: (A) <b>6.8</b> °C / <b>101.0</b> °F		Analyst Init: <b>GSP</b>	
SAMPLE CONTAINERS		SAMPLE NUMBERS			
		<b>14, 15, 16, 17, 18, 19, 20, 21</b>			
QT PE UNPRES					
4oz / 8oz / 16oz PE UNPRES					
2oz Cr <sup>14</sup>					
QT INORGANIC CHEMICAL METALS					
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz					
PT CYANIDE					
PT NITROGEN FORMS					
PT TOTAL SULFIDE					
2oz NITRATE / NITRITE					
PT TOTAL ORGANIC CARBON					
PT CHEMICAL OXYGEN DEMAND					
PIA PHENOLICS					
40ml VOA VIAL TRAVEL BLANK					
40ml VOA VIAL					
QT EPA 1664					
PT ODOR					
RADIOLOGICAL					
BACTERIOLOGICAL					
40 ml VOA VIAL- 504					
QT EPA 505/608/8080					
QT EPA 515.1/8150					
QT EPA 525					
QT EPA 525 TRAVEL BLANK					
40ml EPA 547					
40ml EPA 531.1					
8oz EPA 548					
QT EPA 549					
QT EPA 8015M					
QT EPA 8270					
8oz / 16oz / 32oz AMBER		<b>A A A A A A A A A</b>			
8oz / 16oz / 32oz JAR					
SOIL SLEEVE					
PCB VIAL					
PLASTIC BAG					
TEDLAR BAG					
FERROUS IRON					
ENCORE					
SMART KIT					
SUMMA CANISTER					

Comments:

Sample Numbering Completed By: **KJS**

Date/Time: **7-28-17 1300**

Rev 21 05/23/2016

(S:\WPDoc\WordPerfect\LAB\_SDCS\FORMS\SAMRSCDev 20)

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 11:05  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1727448-01	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727448-01	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-24-8
1727448-01	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/26/2017 21:20
1727448-01	<b>Sampling Date:</b>	09/26/2017 07:30
	<b>Sample Depth:</b>	---
1727448-01	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727448-01	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727448-01	<b>Location ID (FieldPoint):</b>	HA-24-8
	<b>Matrix:</b>	W
1727448-01	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727448-02	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727448-02	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-23-1
1727448-02	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/26/2017 21:20
1727448-02	<b>Sampling Date:</b>	09/26/2017 07:45
	<b>Sample Depth:</b>	---
1727448-02	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727448-02	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727448-02	<b>Location ID (FieldPoint):</b>	HA-23-1
	<b>Matrix:</b>	W
1727448-02	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727448-03	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727448-03	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-23-3
1727448-03	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/26/2017 21:20
1727448-03	<b>Sampling Date:</b>	09/26/2017 07:50
	<b>Sample Depth:</b>	---
1727448-03	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727448-03	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727448-03	<b>Location ID (FieldPoint):</b>	HA-23-3
	<b>Matrix:</b>	W
1727448-03	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 11:05  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1727448-04	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727448-05	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-23-5
1727448-06	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/26/2017 21:20
1727448-04	<b>Sampling Date:</b>	09/26/2017 07:55
	<b>Sample Depth:</b>	---
1727448-05	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727448-06	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727448-04	<b>Location ID (FieldPoint):</b>	HA-23-5
	<b>Matrix:</b>	W
1727448-05	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727448-06	<b>Receive Date:</b>	09/26/2017 21:20
	<b>Sampling Date:</b>	09/26/2017 08:05
1727448-04	<b>Sample Depth:</b>	---
	<b>Lab Matrix:</b>	Solids
1727448-05	<b>Sample Type:</b>	Soil
	<b>Delivery Work Order:</b>	
1727448-06	<b>Global ID:</b>	
	<b>Location ID (FieldPoint):</b>	HA-23-8
1727448-04	<b>Matrix:</b>	W
	<b>Sample QC Type (SACode):</b>	CS
1727448-05	<b>Cooler ID:</b>	
	<b>Receive Date:</b>	09/26/2017 21:20
1727448-06	<b>Sampling Date:</b>	09/26/2017 08:30
	<b>Sample Depth:</b>	---
1727448-04	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727448-05	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727448-06	<b>Location ID (FieldPoint):</b>	HA-22-1
	<b>Matrix:</b>	W
1727448-04	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 11:05  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1727448-07	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727448-07	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-22-3
1727448-07	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/26/2017 21:20
1727448-07	<b>Sampling Date:</b>	09/26/2017 08:45
	<b>Sample Depth:</b>	---
1727448-07	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727448-07	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727448-07	<b>Location ID (FieldPoint):</b>	HA-22-3
	<b>Matrix:</b>	W
1727448-07	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727448-08	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727448-08	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-22-5
1727448-08	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/26/2017 21:20
1727448-08	<b>Sampling Date:</b>	09/26/2017 08:50
	<b>Sample Depth:</b>	---
1727448-08	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727448-08	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727448-08	<b>Location ID (FieldPoint):</b>	HA-22-5
	<b>Matrix:</b>	W
1727448-08	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727448-09	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727448-09	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-22-8
1727448-09	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/26/2017 21:20
1727448-09	<b>Sampling Date:</b>	09/26/2017 09:00
	<b>Sample Depth:</b>	---
1727448-09	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727448-09	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727448-09	<b>Location ID (FieldPoint):</b>	HA-22-8
	<b>Matrix:</b>	W
1727448-09	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 11:05  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
1727448-10	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/26/2017 21:20
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/26/2017 10:30
1727448-10	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-21-1	<b>Lab Matrix:</b> Solids
1727448-10	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-21-1
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:
1727448-11	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/26/2017 21:20
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/26/2017 10:35
1727448-11	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-21-3	<b>Lab Matrix:</b> Solids
1727448-11	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-21-3
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:
1727448-12	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/26/2017 21:20
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/26/2017 10:39
1727448-12	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-21-5	<b>Lab Matrix:</b> Solids
1727448-12	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-21-5
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:

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**Reported:** 01/19/2018 11:05  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1727448-13	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727448-13	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-21-8
1727448-13	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/26/2017 21:20
1727448-13	<b>Sampling Date:</b>	09/26/2017 10:45
	<b>Sample Depth:</b>	---
1727448-13	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727448-13	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727448-13	<b>Location ID (FieldPoint):</b>	HA-21-8
	<b>Matrix:</b>	W
1727448-13	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727448-14	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727448-14	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-20-1
1727448-14	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/26/2017 21:20
1727448-14	<b>Sampling Date:</b>	09/26/2017 11:10
	<b>Sample Depth:</b>	---
1727448-14	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727448-14	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727448-14	<b>Location ID (FieldPoint):</b>	HA-20-1
	<b>Matrix:</b>	W
1727448-14	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727448-15	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727448-15	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-20-3
1727448-15	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/26/2017 21:20
1727448-15	<b>Sampling Date:</b>	09/26/2017 11:15
	<b>Sample Depth:</b>	---
1727448-15	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727448-15	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727448-15	<b>Location ID (FieldPoint):</b>	HA-20-3
	<b>Matrix:</b>	W
1727448-15	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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**Reported:** 01/19/2018 11:05  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
1727448-16	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/26/2017 21:20
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/26/2017 11:20
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-20-5	<b>Lab Matrix:</b> Solids
	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-20-5
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:
1727448-17	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/26/2017 21:20
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/26/2017 11:30
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-20-8	<b>Lab Matrix:</b> Solids
	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-20-8
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:
1727448-18	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/26/2017 21:20
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/26/2017 13:10
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-36-1	<b>Lab Matrix:</b> Solids
	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-36-1
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:

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**Project:** Former Northern Landfill  
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**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
1727448-19	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/26/2017 21:20
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/26/2017 13:15
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-36-3	<b>Lab Matrix:</b> Solids
	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-36-3
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:
1727448-20	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/26/2017 21:20
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/26/2017 13:20
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-36-5	<b>Lab Matrix:</b> Solids
	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-36-5
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:
1727448-21	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/26/2017 21:20
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/26/2017 13:30
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-36-8	<b>Lab Matrix:</b> Solids
	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-36-8
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:

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**EMSL Analytical, Inc.**

464 McCormick Street San Leandro, CA 94577  
Tel/Fax: (510) 895-3675 / (510) 895-3680  
<http://www.EMSL.com/sanleandrolab@emsl.com>

EMSL Order: 091800322  
Customer ID: BCLA50  
Customer PO: 1727448  
Project ID:

Attention: Molly Meyers  
BC Laboratories, Inc.  
4100 Atlas Court  
Bakersfield, CA 93308

Phone: (661) 327-4911  
Fax: (661) 327-1918  
Received Date: 01/04/2018 9:30 AM  
Analysis Date: 01/09/2018  
Collected Date:

Project: 1727448

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020  
Method(s) using Polarized Light Microscopy**

Sample	Description	Appearance	% Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
1727448-04		Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
091800322-0001	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727448-12		Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
091800322-0002	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727448-16		Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
091800322-0003	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727448-20		Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
091800322-0004	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				

Analyst(s)  
Adam C. Fink (4)

  
Matthew Batongbacal  
or Other Approved Signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The limit of detection as stated in the method is 1%. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The test results contained within this report meet the requirements of NELAC unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from: 01/10/2018 02:57:54

ASB\_PLM\_0008\_0001 - 1.78 Printed: 1/9/2018 11:57 PM

Page 1 of 1

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Environmental Testing Laboratory Since 1949



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**Reported:** 01/19/2018 11:05  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727448-01	<b>Client Sample Name:</b>	Former Northern Landfill, HA-24-8, 9/26/2017 7:30:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>20</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	97.0	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/05/17 11:00	10/08/17 11:33	AS1	GC-13	0.984	BJ0639

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**Reported:** 01/19/2018 11:05  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727448-02	<b>Client Sample Name:</b>	Former Northern Landfill, HA-23-1, 9/26/2017 7:45:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>92</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	89.0	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/05/17 11:00	10/08/17 15:11	AS1	GC-13	0.993	BJ0639

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**Reported:** 01/19/2018 11:05  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727448-03	<b>Client Sample Name:</b>	Former Northern Landfill, HA-23-3, 9/26/2017 7:50:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>19</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND	<b>J</b>	<b>1</b>
Tetracosane (Surrogate)	94.0	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/05/17 11:00	10/08/17 11:10	AS1	GC-13	1.003	BJ0639

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**Reported:** 01/19/2018 11:05  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727448-05	<b>Client Sample Name:</b>	Former Northern Landfill, HA-23-8, 9/26/2017 8:05:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>10</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND	<b>J</b>	<b>1</b>
Tetracosane (Surrogate)	81.3	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/05/17 11:00	10/08/17 06:56	AS1	GC-13	1.007	BJ0639

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**Reported:** 01/19/2018 11:05  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727448-06	<b>Client Sample Name:</b>	Former Northern Landfill, HA-22-1, 9/26/2017 8:30:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	40	10	EPA-8015B/FFP	ND	A01	1
TPH - Diesel (FFP)	ND	mg/kg	20	2.4	EPA-8015B/FFP	ND	A01	1
<b>TPH - Motor Oil</b>	<b>480</b>	<b>mg/kg</b>	<b>40</b>	<b>13</b>	<b>EPA-8015B/FFP</b>	ND	<b>A01</b>	1
Tetracosane (Surrogate)	59.7	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		A01	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/05/17 11:00	10/11/17 00:32	AS1	GC-13	1.967	BJ0639

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**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727448-07	<b>Client Sample Name:</b>	Former Northern Landfill, HA-22-3, 9/26/2017 8:45:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>280</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	76.6	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/05/17 11:00	10/09/17 03:04	AS1	GC-13	1.003	BJ0639

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727448-08	<b>Client Sample Name:</b>	Former Northern Landfill, HA-22-5, 9/26/2017 8:50:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>65</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	65.5	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/05/17 11:00	10/08/17 12:42	AS1	GC-13	0.993	BJ0639

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727448-09	<b>Client Sample Name:</b>	Former Northern Landfill, HA-22-8, 9/26/2017 9:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>22</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	98.9	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/05/17 11:00	10/08/17 11:56	AS1	GC-13	0.990	BJ0639

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**Reported:** 01/19/2018 11:05  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727448-10	<b>Client Sample Name:</b>	Former Northern Landfill, HA-21-1, 9/26/2017 10:30:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>190</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	83.4	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/05/17 11:00	10/09/17 02:18	AS1	GC-13	0.990	BJ0639

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Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 11:05  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727448-11	<b>Client Sample Name:</b>	Former Northern Landfill, HA-21-3, 9/26/2017 10:35:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>190</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	37.9	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/05/17 11:00	10/08/17 15:34	AS1	GC-13	1.007	BJ0639

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**Reported:** 01/19/2018 11:05  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727448-13	<b>Client Sample Name:</b>	Former Northern Landfill, HA-21-8, 9/26/2017 10:45:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>25</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	92.3	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/05/17 11:00	10/08/17 12:19	AS1	GC-13	0.984	BJ0639

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**Reported:** 01/19/2018 11:05  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

BCL Sample ID: 1727448-14		Client Sample Name: Former Northern Landfill, HA-20-1, 9/26/2017 11:10:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	68.2	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/05/17 11:00	10/08/17 07:19	AS1	GC-13	0.997	BJ0639

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**Reported:** 01/19/2018 11:05  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727448-15	<b>Client Sample Name:</b>	Former Northern Landfill, HA-20-3, 9/26/2017 11:15:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>7.0</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND	<b>J,A57</b>	1
Tetracosane (Surrogate)	74.2	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/05/17 11:00	10/08/17 10:24	AS1	GC-13	1.017	BJ0639

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**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727448-17	<b>Client Sample Name:</b>	Former Northern Landfill, HA-20-8, 9/26/2017 11:30:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>6.6</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND	<b>J,A57</b>	1
Tetracosane (Surrogate)	63.2	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/05/17 11:00	10/08/17 10:47	AS1	GC-13	1.010	BJ0639

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**Reported:** 01/19/2018 11:05  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727448-18	<b>Client Sample Name:</b>	Former Northern Landfill, HA-36-1, 9/26/2017 1:10:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	40	10	EPA-8015B/FFP	ND	A01	1
TPH - Diesel (FFP)	ND	mg/kg	20	2.4	EPA-8015B/FFP	ND	A01	1
<b>TPH - Motor Oil</b>	<b>310</b>	<b>mg/kg</b>	<b>40</b>	<b>13</b>	<b>EPA-8015B/FFP</b>	ND	<b>A01</b>	1
Tetracosane (Surrogate)	38.4	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		A01	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/05/17 11:00	10/11/17 00:55	AS1	GC-13	2.007	BJ0639

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**Reported:** 01/19/2018 11:05  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727448-19	<b>Client Sample Name:</b>	Former Northern Landfill, HA-36-3, 9/26/2017 1:15:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>28</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND	<b>A57</b>	1
Tetracosane (Surrogate)	91.0	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/05/17 11:00	10/08/17 14:48	AS1	GC-13	1.017	BJ0639

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727448-21	<b>Client Sample Name:</b>	Former Northern Landfill, HA-36-8, 9/26/2017 1:30:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>7.4</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND	<b>J</b>	<b>1</b>
Tetracosane (Surrogate)	74.4	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/05/17 11:00	10/08/17 21:41	AS1	GC-13	1.017	BJ0639

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**Reported:** 01/19/2018 11:05  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J0639</b>						
TPH - Gasoline	B[J0639-BLK1	ND	mg/kg	20	5.0	
TPH - Diesel (FFP)	B[J0639-BLK1	ND	mg/kg	10	1.2	
TPH - Motor Oil	B[J0639-BLK1	ND	mg/kg	20	6.5	
<b>Tetracosane (Surrogate)</b>	<b>B[J0639-BLK1</b>	<b>93.4</b>	<b>%</b>	<b>20 - 145 (LCL - UCL)</b>		



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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: B[J0639										
TPH - Diesel (FFP)	B[J0639-BS1	LCS	78.698	81.967	mg/kg	96.0		64 - 124		
Tetracosane (Surrogate)	B[J0639-BS1	LCS	3.4325	3.2800	mg/kg	105		20 - 145		



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**Reported:** 01/19/2018 11:05  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Precision & Accuracy

Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	Control Limits		
									RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J0639		Used client sample: Y - Description: HA-24-8, 09/26/2017 07:30									
TPH - Diesel (FFP)	MS	1727448-01	ND	88.611	83.056	mg/kg		107		52 - 131	
	MSD	1727448-01	ND	34.170	82.781	mg/kg	88.7	41.3	30	52 - 131	Q02,Q 03
Tetracosane (Surrogate)	MS	1727448-01	ND	3.4827	3.3236	mg/kg		105		20 - 145	
	MSD	1727448-01	ND	1.4929	3.3126	mg/kg	80.0	45.1		20 - 145	



**EMSL Analytical, Inc.**

464 McCormick Street San Leandro, CA 94577  
Tel/Fax: (510) 895-3675 / (510) 895-3680  
<http://www.EMSL.com> / [sanleandro@emsl.com](mailto:sanleandro@emsl.com)

EMSL Order: 091719447  
Customer ID: BCLA50  
Customer PO: 1727448  
Project ID:

Attention: Molly Meyers  
BC Laboratories, Inc.  
4100 Atlas Court  
Bakersfield, CA 93308

Phone: (661) 327-4911  
Fax: (661) 327-1918  
Received Date: 10/04/2017 10:00 AM  
Analysis Date: 10/11/2017  
Collected Date: 09/26/2017

Project: 1727448

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020  
Method(s) using Polarized Light Microscopy**

Sample	Description	Appearance	% Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
1727448-01		Brown Non-Fibrous Homogeneous		35% Quartz 65% Non-fibrous (Other)	None Detected
091719447-0001 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1727448-02		Brown Non-Fibrous Homogeneous		30% Quartz 70% Non-fibrous (Other)	None Detected
091719447-0002 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1727448-03		Brown Non-Fibrous Homogeneous		35% Quartz 65% Non-fibrous (Other)	None Detected
091719447-0003 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1727448-05		Brown Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	None Detected
091719447-0004 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1727448-06		Brown Non-Fibrous Homogeneous		35% Quartz 63% Non-fibrous (Other)	2% Amosite
091719447-0005 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1727448-07		Brown Non-Fibrous Homogeneous		40% Quartz 57% Non-fibrous (Other)	3% Amosite
091719447-0006 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1727448-08		Brown Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	<1% Amosite
091719447-0007 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1727448-09		Brown Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	<1% Amosite
091719447-0008 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1727448-10		Brown Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	<1% Amosite
091719447-0009 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1727448-11		Brown Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	None Detected
091719447-0010 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1727448-13		Brown Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	None Detected
091719447-0011 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1727448-14		Brown Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	None Detected
091719447-0012 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					

Initial report from: 10/11/2017 11:11:15

ASB\_PLM\_0008\_0001 - 1.78 Printed: 10/11/2017 11:11 AM

Page 1 of 2



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484 McCormick Street San Leandro, CA 94577

Tel/Fax: (510) 895-3675 / (510) 895-3680

<http://www.EMSL.com / sanleandrolab@emsl.com>

EMSL Order: 091719447

Customer ID: BCLA50

Customer PO: 1727448

Project ID:

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020  
Method(s) using Polarized Light Microscopy**

Sample	Description	Appearance	Non-Asbestos		Asbestos % Type
			% Fibrous	% Non-Fibrous	
1727448-15		Brown Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	None Detected
091719447-0013 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1727448-17		Brown Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	None Detected
091719447-0014					
1727448-18		Brown Non-Fibrous Homogeneous		40% Quartz 60% Non-fibrous (Other)	None Detected
091719447-0015 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1727448-19		Brown/Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	<1% Amosite
091719447-0016 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1727448-21		Brown/Tan Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
091719447-0017 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					

Analyst(s)

Beheshtia Ahadi (15)

Oscar Merino (2)



Matthew Batongbacal  
or Other Approved Signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The limit of detection as stated in the method is 1%. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The test results contained within this report meet the requirements of NELAC unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from: 10/11/2017 11:11:15

ASB\_PLM\_0008\_0001 - 1.78 Printed: 10/11/2017 11:11 AM

Page 2 of 2

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**Reported:** 01/19/2018 11:05  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit
A01	Detection and quantitation limits are raised due to sample dilution.
A57	Chromatogram not typical of motor oil.
Q02	Matrix spike precision is not within the control limits.
Q03	Matrix spike recovery(s) is(are) not within the control limits.



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



Date of Report: 01/19/2018

Kirk Henning

Stantec - SLO

3437 Empresa Drive, Suite A

Suite A

San Luis Obispo, CA 93401

Client Project: 185850429.300.0006

BCL Project: Former Northern Landfill

BCL Work Order: 1727449

Invoice ID: B282417, B289257

Enclosed are the results of analyses for samples received by the laboratory on 9/27/2017. If you have any questions concerning this report, please feel free to contact me.

Revised Report: This report supercedes Report ID 1000691038

Sincerely,

Contact Person: Molly Meyers  
Client Service Rep

Stuart Buttram  
Technical Director

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

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### Sample Results

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<b>1727449-04 - HA-40-8</b>	
Total Petroleum Hydrocarbons.....	15
<b>1727449-05 - HA-41-1</b>	
Total Petroleum Hydrocarbons.....	16
<b>1727449-06 - HA-41-3</b>	
Total Petroleum Hydrocarbons.....	17
<b>1727449-08 - HA-41-8</b>	
Total Petroleum Hydrocarbons.....	18
<b>1727449-09 - HA-35-1</b>	
Total Petroleum Hydrocarbons.....	19
<b>1727449-10 - HA-35-3</b>	
Total Petroleum Hydrocarbons.....	20
<b>1727449-11 - HA-35-5</b>	
Total Petroleum Hydrocarbons.....	21
<b>1727449-12 - HA-35-8</b>	
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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1727449 Page 1 of 4

# Chain of Custody Form

**BC LABORATORIES, INC.**

Report to:  
Client: Stantec Project #: 185350422.300.0006  
Attn: Kirk Henning Project Name: Former Northern Landfill  
Street Address: 3137 Empress Drive, Suite A  
City, State, Zip: San Luis Obispo, CA 93401 Sampler(s): Jim Raney  
Phone: (805) 250-2891 Fax:  
Email: Kirk.Henning@stantec.com  
Work Order #: 17-27449

## Analysis Requested

Please refer to the back of this page for completion instructions and method legend.

Comments:

Sample Matrix: ☐ Soil ☐ Sludge ☐ Drinking Water ☐ Ground Water ☐ Waste Water ☐ Other

Result Request: ☐ Surcharge ☐ STD ☐ 5 Day\*\* ☐ 2 Day\*\* ☐ 1 Day\*\* (to base)

Notes:

Sample #	Description	Date Sampled	Time Sampled
-1	HA-40-1	09/27/17	08:33
-2	HA-40-3		08:40
-3	HA-40-5		08:50
-4	HA-40-8		09:00
-5	HA-41-1		09:20
-6	HA-41-3		09:25
-7	HA-41-5		09:30
-8	HA-41-8		09:40
-9	HA-35-1		10:00
-10	HA-35-3		11:00
-11	HA-35-5		11:10
-12	HA-35-8		13:50
-13	HA-39-1		

DISTRIBUTION  
MAINTENANCE  
SUB-OUT

Billing: ☒ Same as above ☐ Different

Client: \_\_\_\_\_ Address: \_\_\_\_\_ City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_

EDF Required? ☐ Yes ☐ No

Global ID (Required for EDF): ☐ 1. Relinquished By ☐ 2. Relinquished By ☐ 3. Relinquished By

System # (Required for EDF): \_\_\_\_\_

1. Received By: \_\_\_\_\_ Date: 9/27/17 Time: 14:30

2. Received By: \_\_\_\_\_ Date: 9/27/17 Time: 17:30

3. Received By: \_\_\_\_\_ Date: 9/27/17 Time: 17:30

BC Laboratories, Inc. - 4100 Atlas Ct. - Bakersfield, CA 93308 - 661.327.4911 - Fax: 661.327.1918 - www.bclabs.com

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## Chain of Custody Form

[illegible]

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1727449 Page 3 of 4

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page 1 Of 2							
Submission #: <u>17-27449</u>											
<b>SHIPPING INFORMATION</b> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/> BC Lab Field Service <input checked="" type="checkbox"/> Other <input type="checkbox"/> (Specify) _____			<b>SHIPPING CONTAINER</b> Ice Chest <input checked="" type="checkbox"/> None <input type="checkbox"/> Box <input type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		<b>FREE LIQUID</b> YES <input type="checkbox"/> NO <input type="checkbox"/> W / S						
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: _____											
Custody Seals: Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments: _____ Intact? Yes <input type="checkbox"/> No <input type="checkbox"/> Intact? Yes <input type="checkbox"/> No <input type="checkbox"/>											
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											
<b>COC Received</b> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Emissivity: <u>0.98</u> Container: <u>CO/CS</u> Thermometer ID: <u>206</u> Temperature: (A) <u>1-6</u> °C / (C) <u>1-3</u> °C		Date/Time <u>9/17/17 2130</u> Analyst Init <u>KMC</u>							
<b>SAMPLE CONTAINERS</b>		<b>SAMPLE NUMBERS</b>									
		1	2	3	4	5	6	7	8	9	10
QT PE UNPRES											
4oz / 8oz / 16oz PE UNPRES											
2oz Cr <sup>6</sup>											
QT INORGANIC CHEMICAL METALS											
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz											
PT CYANIDE											
PT NITROGEN FORMS											
PT TOTAL SULFIDE											
2oz NITRATE / NITRITE											
PT TOTAL ORGANIC CARBON											
PT CHEMICAL OXYGEN DEMAND											
PIA PHENOLICS											
40ml VOA VIAL TRAVEL BLANK											
40ml VOA VIAL											
QT EPA 1664											
PT ODOR											
RADIOLOGICAL											
BACTERIOLOGICAL											
40 ml VOA VIAL- 504											
QT EPA 508/608/8080											
QT EPA 515.1/8150											
QT EPA 525											
QT EPA 525 TRAVEL BLANK											
40ml EPA 547											
40ml EPA 531.1											
8oz EPA 548											
QT EPA 549											
QT EPA 8015M											
QT EPA 8270											
8oz / 16oz / 32oz AMBER											
8oz / 16oz / 32oz JAR		A	A	A	A	A	A	A	A	A	A
SOIL SLEEVE											
PCB VIAL											
PLASTIC BAG											
TEDLAR BAG											
FERROUS IRON											
ENCORE											
SMART KIT											
SUMMA CANISTER											
Comments: _____											
Sample Numbering Completed By: <u>Kjg</u> Date/Time: <u>9-28-17 1300</u> Rev 21 05/23/2018											
= Actual / C = Corrected											

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1727449 Page 4 of 4

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page 2 Of 2							
Submission #: <u>17-27449</u>											
<b>SHIPPING INFORMATION</b>			<b>SHIPPING CONTAINER</b>		<b>FREE LIQUID</b>						
Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/>			Ice Chest <input checked="" type="checkbox"/> None <input type="checkbox"/> Box <input type="checkbox"/>		YES <input type="checkbox"/> NO <input type="checkbox"/>						
BC Lab Field Service <input checked="" type="checkbox"/> Other <input type="checkbox"/> (Specify) _____			Other <input type="checkbox"/> (Specify) _____		W / S						
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: _____											
Custody Seals: Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments: _____											
Intact? Yes <input type="checkbox"/> No <input type="checkbox"/> Intact? Yes <input type="checkbox"/> No <input type="checkbox"/>											
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											
COC Received		Emissivity: <u>0.90</u>		Container: <u>COLOS</u>							
<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Thermometer ID: <u>206</u>		Date/Time: <u>9/27/17 2:30</u>							
		Temperature: (A) <u>1-0</u> °C / (C) <u>1-3</u> °C		Analyst Init: <u>KMC</u>							
SAMPLE CONTAINERS		SAMPLE NUMBERS									
		11	12	13	4	5	6	7	8	9	10
T PE UNPRES											
12 / 8oz / 16oz PE UNPRES											
12 Cr <sup>6+</sup>											
T INORGANIC CHEMICAL METALS											
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz											
T CYANIDE											
T NITROGEN FORMS											
T TOTAL SULFIDE											
12. NITRATE / NITRITE											
T TOTAL ORGANIC CARBON											
T CHEMICAL OXYGEN DEMAND											
1A PHENOLICS											
3ml VOA VIAL TRAVEL BLANK											
3ml VOA VIAL											
T EPA 1664											
T ODOR											
ADIOLOGICAL											
ACTERIOLOGICAL											
3 ml VOA VIAL- 504											
T EPA 503/608/8080											
T EPA 515.1/8150											
T EPA 525											
T EPA 525 TRAVEL BLANK											
3ml EPA 547											
3ml EPA 531.1											
12 EPA 548											
T EPA 549											
T EPA 8015M											
T EPA 8270											
12 / 16oz / 32oz AMBER		K6	A	A	A						
12 / 16oz / 32oz IAR		910	A	A							
OIL SLEEVE											
CB VIAL											
LASTIC BAG											
EDLAR BAG											
ERROUS IRON											
NCORE											
WART KIT											
UMMA CANISTER											
Comments:											
Sample Numbering Completed By: <u>KMC</u>		Date/Time: <u>9-28-17 13:00</u>		Rev 21 05/23/2016							
= Actual / C = Corrected		G:\WPDoc\WordPerfect\LAB_DOCS\FORMS\SAWREC.docx 200									

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:23  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
1727449-01	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/27/2017 21:30
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/27/2017 08:33
1727449-01	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-40-1	<b>Lab Matrix:</b> Solids
1727449-01	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-40-1
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:
1727449-02	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/27/2017 21:30
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/27/2017 08:40
1727449-02	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-40-3	<b>Lab Matrix:</b> Solids
1727449-02	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-40-3
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:
1727449-03	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/27/2017 21:30
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/27/2017 08:50
1727449-03	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-40-5	<b>Lab Matrix:</b> Solids
1727449-03	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-40-5
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:

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Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:23  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
1727449-04	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/27/2017 21:30
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/27/2017 09:00
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-40-8	<b>Lab Matrix:</b> Solids
	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-40-8
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:
1727449-05	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/27/2017 21:30
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/27/2017 09:20
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-41-1	<b>Lab Matrix:</b> Solids
	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-41-1
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:
1727449-06	<b>COC Number:</b>	---	<b>Receive Date:</b> 09/27/2017 21:30
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 09/27/2017 09:25
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-41-3	<b>Lab Matrix:</b> Solids
	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-41-3
			Matrix: W
			Sample QC Type (SACode): CS
			Cooler ID:

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**Reported:** 01/19/2018 12:23  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1727449-07	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727449-08	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-41-5
1727449-09	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/27/2017 21:30
1727449-07	<b>Sampling Date:</b>	09/27/2017 09:30
	<b>Sample Depth:</b>	---
1727449-08	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727449-09	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727449-07	<b>Location ID (FieldPoint):</b>	HA-41-5
	<b>Matrix:</b>	W
1727449-08	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727449-09	<b>Receive Date:</b>	09/27/2017 21:30
	<b>Sampling Date:</b>	09/27/2017 09:40
1727449-07	<b>Sample Depth:</b>	---
	<b>Lab Matrix:</b>	Solids
1727449-08	<b>Sample Type:</b>	Soil
	<b>Delivery Work Order:</b>	
1727449-09	<b>Global ID:</b>	
	<b>Location ID (FieldPoint):</b>	HA-41-8
1727449-07	<b>Matrix:</b>	W
	<b>Sample QC Type (SACode):</b>	CS
1727449-08	<b>Cooler ID:</b>	
1727449-09	<b>Receive Date:</b>	09/27/2017 21:30
	<b>Sampling Date:</b>	09/27/2017 09:55
1727449-07	<b>Sample Depth:</b>	---
	<b>Lab Matrix:</b>	Solids
1727449-08	<b>Sample Type:</b>	Soil
	<b>Delivery Work Order:</b>	
1727449-09	<b>Global ID:</b>	
	<b>Location ID (FieldPoint):</b>	HA-35-1
1727449-07	<b>Matrix:</b>	W
	<b>Sample QC Type (SACode):</b>	CS
1727449-08	<b>Cooler ID:</b>	

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Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:23  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1727449-10	<b>COC Number:</b>	---	<b>Receive Date:</b>	09/27/2017 21:30
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b>	09/27/2017 10:00
1727449-10	<b>Sampling Location:</b>	---	<b>Sample Depth:</b>	---
	<b>Sampling Point:</b>	HA-35-3	<b>Lab Matrix:</b>	Solids
1727449-10	<b>Sampled By:</b>	SISL	<b>Sample Type:</b>	Soil
			<b>Delivery Work Order:</b>	
1727449-10			<b>Global ID:</b>	
			<b>Location ID (FieldPoint):</b>	HA-35-3
1727449-10			<b>Matrix:</b>	W
			<b>Sample QC Type (SACode):</b>	CS
1727449-10			<b>Cooler ID:</b>	
1727449-11	<b>COC Number:</b>	---	<b>Receive Date:</b>	09/27/2017 21:30
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b>	09/27/2017 11:00
1727449-11	<b>Sampling Location:</b>	---	<b>Sample Depth:</b>	---
	<b>Sampling Point:</b>	HA-35-5	<b>Lab Matrix:</b>	Solids
1727449-11	<b>Sampled By:</b>	SISL	<b>Sample Type:</b>	Soil
			<b>Delivery Work Order:</b>	
1727449-11			<b>Global ID:</b>	
			<b>Location ID (FieldPoint):</b>	HA-35-5
1727449-11			<b>Matrix:</b>	W
			<b>Sample QC Type (SACode):</b>	CS
1727449-11			<b>Cooler ID:</b>	
1727449-12	<b>COC Number:</b>	---	<b>Receive Date:</b>	09/27/2017 21:30
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b>	09/27/2017 11:10
1727449-12	<b>Sampling Location:</b>	---	<b>Sample Depth:</b>	---
	<b>Sampling Point:</b>	HA-35-8	<b>Lab Matrix:</b>	Solids
1727449-12	<b>Sampled By:</b>	SISL	<b>Sample Type:</b>	Soil
			<b>Delivery Work Order:</b>	
1727449-12			<b>Global ID:</b>	
			<b>Location ID (FieldPoint):</b>	HA-35-8
1727449-12			<b>Matrix:</b>	W
			<b>Sample QC Type (SACode):</b>	CS
1727449-12			<b>Cooler ID:</b>	

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Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:23  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1727449-13	<b>COC Number:</b>	---	<b>Receive Date:</b>	09/27/2017 21:30
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b>	09/27/2017 13:50
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b>	---
	<b>Sampling Point:</b>	HA-39-1	<b>Lab Matrix:</b>	Solids
	<b>Sampled By:</b>	SISL	<b>Sample Type:</b>	Soil
			<b>Delivery Work Order:</b>	
			<b>Global ID:</b>	
			<b>Location ID (FieldPoint):</b>	HA-39-1
			<b>Matrix:</b>	W
			<b>Sample QC Type (SACode):</b>	CS
			<b>Cooler ID:</b>	



**EMSL Analytical, Inc.**

464 McCormick Street San Leandro, CA 94577  
Tel/Fax: (510) 895-3675 / (510) 895-3680  
<http://www.EMSL.com> / [sanleandrolab@emsl.com](mailto:sanleandrolab@emsl.com)

EMSL Order: 091800320  
Customer ID: BCLA50  
Customer PO: 1727449  
Project ID:

Attention: Molly Meyers  
BC Laboratories, Inc.  
4100 Atlas Court  
Bakersfield, CA 93308

Phone: (661) 327-4911  
Fax: (661) 327-1918  
Received Date: 01/04/2018 9:30 AM  
Analysis Date: 01/09/2018  
Collected Date:

Project: 1727449

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020  
Method(s) using Polarized Light Microscopy**

Sample	Description	Appearance	Non-Asbestos		Asbestos % Type
			% Fibrous	% Non-Fibrous	
1727449-03		Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
091800320-0001 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1727449-07		Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
091800320-0002 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					

Analyst(s)  
Adam C. Fink (2)

  
Matthew Batongbacal  
or Other Approved Signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The limit of detection as stated in the method is 1%. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The test results contained within this report meet the requirements of NELAC unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from: 01/10/2018 02:51:12

ASB\_PLM\_0008\_0001 - 1.78 Printed: 1/9/2018 11:51 PM

Page 1 of 1

Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:23  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727449-01	<b>Client Sample Name:</b>	Former Northern Landfill, HA-40-1, 9/27/2017 8:33:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>9.1</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND	<b>J</b>	<b>1</b>
Tetracosane (Surrogate)	89.8	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/05/17 14:15	10/09/17 08:04	AS1	GC-13	0.993	BJ0709

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San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:23  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727449-02	<b>Client Sample Name:</b>	Former Northern Landfill, HA-40-3, 9/27/2017 8:40:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	96.1	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/05/17 14:15	10/09/17 08:27	AS1	GC-13	0.984	BJ0709

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Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:23  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727449-04	<b>Client Sample Name:</b>	Former Northern Landfill, HA-40-8, 9/27/2017 9:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	84.9	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/05/17 14:15	10/13/17 01:03	AS1	GC-2	0.990	BJ0709

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**Reported:** 01/19/2018 12:23  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727449-05	<b>Client Sample Name:</b>	Former Northern Landfill, HA-41-1, 9/27/2017 9:20:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>22</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	70.1	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/05/17 14:15	10/13/17 01:26	AS1	GC-2	0.997	BJ0709

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**Reported:** 01/19/2018 12:23  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727449-06	<b>Client Sample Name:</b>	Former Northern Landfill, HA-41-3, 9/27/2017 9:25:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	64.9	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/05/17 14:15	10/11/17 16:53	AS1	GC-13	1.017	BJ0709

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



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**Reported:** 01/19/2018 12:23  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727449-08	<b>Client Sample Name:</b>	Former Northern Landfill, HA-41-8, 9/27/2017 9:40:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	67.6	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/05/17 14:15	10/13/17 01:48	AS1	GC-2	1.017	BJ0709

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**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727449-09	<b>Client Sample Name:</b>	Former Northern Landfill, HA-35-1, 9/27/2017 9:55:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	74.9	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/05/17 14:15	10/13/17 02:10	AS1	GC-2	0.984	BJ0709

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**Reported:** 01/19/2018 12:23  
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**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727449-10	<b>Client Sample Name:</b>	Former Northern Landfill, HA-35-3, 9/27/2017 10:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	60.4	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/05/17 14:15	10/13/17 03:18	AS1	GC-2	1.017	BJ0709

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**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727449-11	<b>Client Sample Name:</b>	Former Northern Landfill, HA-35-5, 9/27/2017 11:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	71.6	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/05/17 14:15	10/13/17 03:40	AS1	GC-2	0.997	BJ0709

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San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:23  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

BCL Sample ID: 1727449-12		Client Sample Name: Former Northern Landfill, HA-35-8, 9/27/2017 11:10:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	94.8	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/05/17 14:15	10/13/17 04:03	AS1	GC-2	1.017	BJ0709

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727449-13	<b>Client Sample Name:</b>	Former Northern Landfill, HA-39-1, 9/27/2017 1:50:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	800	200	EPA-8015B/FFP	ND	A01	1
TPH - Diesel (FFP)	ND	mg/kg	400	48	EPA-8015B/FFP	ND	A01	1
<b>TPH - Motor Oil</b>	<b>6900</b>	<b>mg/kg</b>	<b>800</b>	<b>260</b>	<b>EPA-8015B/FFP</b>	ND	<b>A01</b>	1
Tetracosane (Surrogate)	74.3	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		A01	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/05/17 14:15	10/13/17 04:25	AS1	GC-2	40	BJ0709

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J0709</b>						
TPH - Gasoline	B[J0709-BLK1	ND	mg/kg	20	5.0	
TPH - Diesel (FFP)	B[J0709-BLK1	ND	mg/kg	10	1.2	
TPH - Motor Oil	B[J0709-BLK1	ND	mg/kg	20	6.5	
<b>Tetracosane (Surrogate)</b>	<b>B[J0709-BLK1</b>	<b>81.6</b>	<b>%</b>	<b>20 - 145 (LCL - UCL)</b>		

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: B[J0709										
TPH - Diesel (FFP)	B[J0709-BS1	LCS	61.262	82.237	mg/kg	74.5		64 - 124		
Tetracosane (Surrogate)	B[J0709-BS1	LCS	2.4512	3.2908	mg/kg	74.5		20 - 145		



Stantec - SLO  
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**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J0709]		Used client sample: Y - Description: HA-41-3, 09/27/2017 09:25									
TPH - Diesel (FFP)	MS	1727449-06	ND	73.929	83.056	mg/kg		89.0		52 - 131	
	MSD	1727449-06	ND	79.530	82.781	mg/kg	7.3	96.1	30	52 - 131	
Tetracosane (Surrogate)	MS	1727449-06	ND	3.0522	3.3236	mg/kg		91.8		20 - 145	
	MSD	1727449-06	ND	3.3906	3.3126	mg/kg	10.5	102		20 - 145	

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**EMSL Analytical, Inc.**

464 McCormick Street San Leandro, CA 94577  
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<http://www.EMSL.com> / [sanleandro@emsl.com](mailto:sanleandro@emsl.com)

EMSL Order: 091719448  
Customer ID: BCLA50  
Customer PO: 1727449  
Project ID:

Attention: Molly Meyers  
BC Laboratories, Inc.  
4100 Atlas Court  
Bakersfield, CA 93308

Phone: (661) 327-4911  
Fax: (661) 327-1918  
Received Date: 10/04/2017 10:00 AM  
Analysis Date: 10/11/2017  
Collected Date: 09/27/2017

Project: 1727449

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020  
Method(s) using Polarized Light Microscopy**

Sample	Description	Appearance	% Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
1727449-01		Brown Non-Fibrous Homogeneous		50% Quartz 50% Non-fibrous (Other)	None Detected
091719448-0001	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727449-02		Brown Non-Fibrous Homogeneous		50% Quartz 50% Non-fibrous (Other)	None Detected
091719448-0002	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727449-04		Brown Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
091719448-0003	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727449-05		Brown Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
091719448-0004	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727449-06		Brown Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
091719448-0005	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727449-08		Brown Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
091719448-0006	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727449-09		Brown Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
091719448-0007	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727449-10		Brown Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
091719448-0008	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727449-11		Brown Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
091719448-0009	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727449-12		Brown Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
091719448-0010	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727449-13		Brown/Black Non-Fibrous Homogeneous		40% Quartz 58% Non-fibrous (Other)	<1% Amosite 2% Chrysotile
091719448-0011	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				

Initial report from: 10/11/2017 10:38:47

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Page 1 of 2



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Environmental Testing Laboratory Since 1949



Subcontract Report for 1727449 PDF File Name: wo\_1727449\_sub\_all.pdf Page 2 of 2



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EMSL Order: 091719448

Customer ID: BCLA50

Customer PO: 1727449

Project ID:

Analyst(s)

Cecilia Yu (11)

Matthew Batongbacal  
or Other Approved Signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The limit of detection as stated in the method is 1%. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The test results contained within this report meet the requirements of NELAP unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from: 10/11/2017 10:38:47

ASB\_PLM\_0008\_0001 - 1.78 Printed: 10/11/2017 10:38 AM

Page 2 of 2

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:23  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit
A01	Detection and quantitation limits are raised due to sample dilution.



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



Date of Report: 01/19/2018

Kirk Henning

Stantec - SLO

3437 Empresa Drive, Suite A

Suite A

San Luis Obispo, CA 93401

Client Project: 185850429.300.0006

BCL Project: Former Northern Landfill

BCL Work Order: 1727760

Invoice ID: B282552, B289258

Enclosed are the results of analyses for samples received by the laboratory on 9/29/2017. If you have any questions concerning this report, please feel free to contact me.

Revised Report: This report supercedes Report ID 1000691039

Sincerely,

Contact Person: Molly Meyers

Client Service Rep

Stuart Buttram

Technical Director

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

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Total Petroleum Hydrocarbons.....	18
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<b>1727760-03 - HA-39-8</b>	
Total Petroleum Hydrocarbons.....	20
<b>1727760-04 - HA-42-1</b>	
Total Petroleum Hydrocarbons.....	21
<b>1727760-05 - HA-42-3</b>	
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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1727760 Page 1 of 7

# Chain of Custody Form

**BC LABORATORIES, INC.**  
17-27760

Report to: Client: _____		Project #: _____		Page 1 of 2	
Attn: _____		Project Name: _____		Analysis Requested	
Street Address: _____		Sampler(s): _____		Comments:	
City, State, Zip: _____		Phone: _____		Sample Matrix	
Fax: _____		Email: _____		Sludge	
Work Order #: _____		Description		Drinking Water	
Sample #	Date Sampled	Time Sampled		Ground Water	
1	09/28/17	17	HA-39-3	Waste Water	
2			HA-39-5	Other	
3			HA-39-8		
4			HA-42-1		
5			HA-42-3		
6			HA-42-5		
7			HA-42-8		
8			HA-43-1		
9			HA-43-3		
10			HA-43-5		
11			HA-43-8		
12			HA-44-1		
13			HA-44-3		
14			HA-44-5		
Billing			Result Request "Surcharge"		
Client: _____			<input type="checkbox"/> STD <input type="checkbox"/> 5 Day** <input type="checkbox"/> 2 Day** <input type="checkbox"/> 1 Day**		
Address: _____			(if any)		
City: _____ State: _____ Zip: _____			Notes		
Attn: _____					
P.O. #: _____					
Global ID (Needed for EDF)			System # (Needed for EDF)		
1. Relinquished By			1. Received By		
Date			Date		
Time			Time		
2. Relinquished By			2. Received By		
Date			Date		
Time			Time		
3. Relinquished By			3. Received By		
Date			Date		
Time			Time		

BC Laboratories, Inc. - 4100 Atlas Ct. - Bakersfield, CA 93308 - 661.327.4911 - Fax: 661.327.1918 - www.bclabs.com

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**Chain of Custody Form**

Page 2 of 7

**Analysis Requested**

Comments: TPH, GLO, Acheson by Method 600

**Result Request \*\*Surcharge**

☐ STD ☐ 5 Day\*\* ☐ 2 Day\*\* ☐ 1 D (above)

**Sample Matrix**

☐ Waste Water ☐ Other

☐ Ground Water ☐ Drinking Water

☐ Sludge ☐ Soil

**Notes**

**Client Information**

Client: BC LABORATORIES, INC.

Project #: 17-27760

Project Name:

Street Address:

City, State, Zip:

Phone:  Fax:

Email:

Work Order #:

**Sample Information**

Sample #	Description	Date Sampled	Time Sampled
15	HA-44-8	11/11	11:11
16	HA-46-1	11/11	11:11
17	HA-46-3	11/11	11:11
18	HA-46-5	11/11	11:11
19	HA-46-8	11/11	11:11

**EDF Required?**

☒ Same as above

☐ Yes ☐ No

**Global ID**

☐ Yes ☐ No

**Send Copy to State of CA? (EDT)**

☐ Yes ☐ No

**Relinquished By**

1. Relinquished By  Date 11/29 Time 11:29

2. Relinquished By  Date  Time

3. Relinquished By  Date  Time

**System #**

☐ (Needed for EDT)

**Client Information**

Client:

Address:

City:  State  Zip

Attn:

P.O. #:

BC Laboratories, Inc. - 4100 Atlas Ct. - Bakersfield, CA 93308 - 661.327.4911 - Fax: 661.327.1918 - www.bclabs.com

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1727760 Page 4 of 7

Client: Stattec		Project #: 185850429.300.0006	
Attn: Kirk Henning		Project Name: F60	
Street Address: 3437 Empress Drive, Suite A		City, State, Zip: San Luis Obispo, CA 93401	
Phone: (805) 250-2854		Fax: (805) 250-2854	
Email: kirk.henning@stattec.com		Work Order #:	
Sample #	Description	Date Sampled	Time Sampled
15	HA-44-8	09/28/17	11:05
16	HA-46-1		13:10
17	HA-46-3		13:15
18	HA-46-5		13:20
19	HA-46-8		13:30

**Analysis Requested**

Please refer to the back of this page for completion instructions and method legend.

Sample Matrix	Result Request "Surcharge"
<input type="checkbox"/> STD <input type="checkbox"/> 5 Day** <input type="checkbox"/> 2 Day** <input type="checkbox"/> 1 Day**	

Notes

**Comments:**

HA-44-8

**Billing**

Client: Stattec

Address: 3437 Empress Drive, Suite A

City: San Luis Obispo, CA 93401

State: CA Zip: 93401

Phone: (805) 250-2854

Fax: (805) 250-2854

Work Order #: 17-27760

**Global ID** (Needed for EDT)

1. Relinquished By: [Signature] Date: 9/29/17 Time: 13:50

2. Relinquished By: [Signature] Date: 9/29/17 Time: 16:30

3. Relinquished By: [Signature] Date: 9/29/17 Time: 16:35

**EDF Required?** Geotracker ☐ Yes ☐ No

**Send Copy to State of CA? (EDT)** ☐ Yes ☐ No

**System #** (Needed for EDT)

1. Relinquished By: [Signature] Date: 9/29/17 Time: 13:50

2. Relinquished By: [Signature] Date: 9/29/17 Time: 16:30

3. Relinquished By: [Signature] Date: 9/29/17 Time: 16:35

BC Laboratories, Inc. - 4100 Atlas Ct. - Bakersfield, CA 93308 - 661.327.4911 - Fax: 661.327.1918 - www.bclabs.com



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1727760 Page 5 of 7

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page 1 of 2							
Submission #: 17-27760											
<b>SHIPPING INFORMATION</b> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/> BC Lab Field Service <input checked="" type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		<b>SHIPPING CONTAINER</b> Ice Chest <input checked="" type="checkbox"/> None <input type="checkbox"/> Box <input type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		<b>FREE LIQUID</b> YES <input type="checkbox"/> NO <input type="checkbox"/> W / S							
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: _____											
Custody Seals: Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments: _____ Intact? Yes <input type="checkbox"/> No <input type="checkbox"/> Intact? Yes <input type="checkbox"/> No <input type="checkbox"/>											
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											
COC Received YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		Emissivity: 0.98 Container: Glass Jar Thermometer ID: TH1274 Temperature: (A) 0.7 °C / (C) 0.4 °C		Date/Time: 09/29/17 16:35 Analyst Init: JMD							
<b>SAMPLE CONTAINERS</b>		<b>SAMPLE NUMBERS</b>									
		1	2	3	4	5	6	7	8	9	10
QT PE UNPRES											
4oz / 8oz / 16oz PE UNPRES											
2oz Cr <sup>6+</sup>											
QT INORGANIC CHEMICAL METALS											
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz											
PT CYANIDE											
PT NITROGEN FORMS											
PT TOTAL SULFIDE											
2oz. NITRATE / NITRITE											
PT TOTAL ORGANIC CARBON											
PT CHEMICAL OXYGEN DEMAND											
PA PHENOLICS											
40ml VOA VIAL TRAVEL BLANK											
40ml VOA VIAL											
QT EPA 1664											
PT ODOR											
RADIOLOGICAL											
BACTERIOLOGICAL											
40 ml VOA VIAL- 504											
QT EPA 508/608/8080											
QT EPA 515.1/8150											
QT EPA 525											
QT EPA 525 TRAVEL BLANK											
40ml EPA 547											
40ml EPA 531.1											
8oz EPA 548											
QT EPA 549											
QT EPA 8015M											
QT EPA 8270											
8oz / 16oz / 32oz AMBER											
8oz / 16oz / 32oz JAR		A	A	A	A	A					
SOIL SLEEVE											
PCB VIAL											
PLASTIC BAG											
TEDLAR BAG											
FERROUS IRON											
ENCORE											
SMART KIT											
SUMMA CANISTER											

Comments:

Sample Numbering Completed By: JMD

Date/Time: 10-2-17

1500

Rev 21 05/23/2016

A = Actual / C = Corrected

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1727760 Page 6 of 7

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page <u>2</u> of <u>3</u>							
Submission #: <u>17-27760</u>											
SHIPPING INFORMATION			SHIPPING CONTAINER		FREE LIQUID						
Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/>			Ice Chest <input checked="" type="checkbox"/> None <input type="checkbox"/> Box <input type="checkbox"/>		YES <input type="checkbox"/> NO <input type="checkbox"/>						
BC Lab Field Service <input checked="" type="checkbox"/> Other <input type="checkbox"/> (Specify) _____			Other <input type="checkbox"/> (Specify) _____		W / S						
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: _____											
Custody Seals Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments: _____											
Intact? Yes <input type="checkbox"/> No <input type="checkbox"/> Intact? Yes <input type="checkbox"/> No <input type="checkbox"/>											
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											
COC Received <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Emissivity: <u>0.98</u> Container: <u>Glass Jar</u> Thermometer ID: <u>TH-74</u>		Date/Time <u>09/29/17</u> <u>1630</u>							
		Temperature: (A) <u>0.8</u> °C / (C) <u>0.5</u> °C		Analyst Init <u>Y.M.</u>							
SAMPLE CONTAINERS		SAMPLE NUMBERS									
		<u>12 15 16 17 18 19 110 111 112 113</u>									
QT PE UNPRES											
4oz / 8oz / 16oz PE UNPRES											
2oz Cr <sup>6+</sup>											
QT INORGANIC CHEMICAL METALS											
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz											
PT CYANIDE											
PT NITROGEN FORMS											
PT TOTAL SULFIDE											
2oz NITRATE / NITRITE											
PT TOTAL ORGANIC CARBON											
PT CHEMICAL OXYGEN DEMAND											
PA PHENOLICS											
40ml VOA VIAL TRAVEL BLANK											
40ml VOA VIAL											
QT EPA 1664											
PT ODOR											
RADIOLOGICAL											
BACTERIOLOGICAL											
40 ml VOA VIAL- 504											
QT EPA 505/608/6080											
QT EPA 515.1/8150											
QT EPA 525											
QT EPA 525 TRAVEL BLANK											
40ml EPA 547											
40ml EPA 531.1											
8oz EPA 548											
QT EPA 549											
QT EPA 8015M											
QT EPA 8270											
8oz / 16oz / 32oz AMBER											
8oz / 16oz / 32oz JAR		<u>A A A A A A A A A A</u>									
SOIL SLEEVE											
PCB VIAL											
PLASTIC BAG											
TEDLAR BAG											
FERROUS IRON											
ENCORE											
SMART KIT											
SUMMA CANISTER											

Comments:

Sample Numbering Completed By: JM

Date/Time: 10-2-17 1500

A = Actual / C = Corrected

Rev 21 05/23/2016

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1727760 Page 7 of 7

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page 5 of 5							
Submission #: 17-27760											
<b>SHIPPING INFORMATION</b> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/> BC Lab Field Service <input checked="" type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		<b>SHIPPING CONTAINER</b> Ice Chest <input checked="" type="checkbox"/> None <input type="checkbox"/> Box <input type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		<b>FREE LIQUID</b> YES <input type="checkbox"/> NO <input type="checkbox"/> W / S							
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: _____											
Custody Seals: Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments: _____ Intact? Yes <input type="checkbox"/> No <input type="checkbox"/> Intact? Yes <input type="checkbox"/> No <input type="checkbox"/>											
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											
COC Received <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Emissivity: 0.98 Container: Glass Jar Thermometer ID: TH234		Date/Time: 09/29/17 1620							
		Temperature: (A) 0.8 °C / (C) 0.5 °C		Analyst Init: YMD							
<b>SAMPLE CONTAINERS</b>		<b>SAMPLE NUMBERS</b>									
		1	2	3	4	5	6	7	8	9	10
QT PE UNPRES											
4oz / 8oz / 16oz PE UNPRES											
2oz Cr <sup>6+</sup>											
QT INORGANIC CHEMICAL METALS											
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz											
PT CYANIDE											
PT NITROGEN FORMS											
PT TOTAL SULFIDE											
2oz. NITRATE / NITRITE											
PT TOTAL ORGANIC CARBON											
PT CHEMICAL OXYGEN DEMAND											
PMA PHENOLICS											
40ml VOA VIAL TRAVEL BLANK											
40ml VOA VIAL											
QT EPA 1664											
PT ODOR											
RADIOLOGICAL											
BACTERIOLOGICAL											
40 ml VOA VIAL- 504											
QT EPA 508/608/8080											
QT EPA 515.1/8150											
QT EPA 525											
QT EPA 525 TRAVEL BLANK											
40ml EPA 547											
40ml EPA 531.1											
5oz EPA 548											
QT EPA 549											
QT EPA 5015M											
QT EPA 6270											
8oz / 16oz / 32oz AMBER											
8oz / 16oz / 32oz JAR		A	A	A							
SOIL SLEEVE											
PCB VIAL											
PLASTIC BAG											
TEDLAR BAG											
FERROUS IRON											
ENCORE											
SMART KIT											
SUMMA CANISTER											
Comments:		JDL Date/Time: 10-2-17 1500									
Sample Numbering Completed By:		Rev 21 05/23/2016									
A = Actual / C = Corrected		(S:\WPDec\WordPerfect\LAB_DOCS\FORMS\CHAINRECrev 20)									

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:23  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1727760-01	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727760-01	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-39-3
1727760-01	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/29/2017 16:35
1727760-01	<b>Sampling Date:</b>	09/28/2017 07:45
	<b>Sample Depth:</b>	---
1727760-01	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727760-01	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727760-01	<b>Location ID (FieldPoint):</b>	HA-39
	<b>Matrix:</b>	SO
1727760-01	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727760-02	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727760-02	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-39-5
1727760-02	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/29/2017 16:35
1727760-02	<b>Sampling Date:</b>	09/28/2017 07:50
	<b>Sample Depth:</b>	---
1727760-02	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727760-02	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727760-02	<b>Location ID (FieldPoint):</b>	HA-39
	<b>Matrix:</b>	SO
1727760-02	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727760-03	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727760-03	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-39-8
1727760-03	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/29/2017 16:35
1727760-03	<b>Sampling Date:</b>	09/28/2017 08:00
	<b>Sample Depth:</b>	---
1727760-03	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727760-03	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727760-03	<b>Location ID (FieldPoint):</b>	HA-39
	<b>Matrix:</b>	SO
1727760-03	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:23  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1727760-04	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727760-05	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-42-1
1727760-06	<b>Sampled By:</b>	SISL
	<b>Sampling Point:</b>	HA-42-3
1727760-07	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-42-5
1727760-08	<b>Sampled By:</b>	SISL
	<b>Sampling Point:</b>	HA-42-5

**Receive Date:** 09/29/2017 16:35  
**Sampling Date:** 09/28/2017 08:25  
**Sample Depth:** ---  
**Lab Matrix:** Solids  
**Sample Type:** Soil  
Delivery Work Order:  
Global ID:  
Location ID (FieldPoint): HA-42  
Matrix: SO  
Sample QC Type (SACode): CS  
Cooler ID:

**Receive Date:** 09/29/2017 16:35  
**Sampling Date:** 09/28/2017 08:33  
**Sample Depth:** ---  
**Lab Matrix:** Solids  
**Sample Type:** Soil  
Delivery Work Order:  
Global ID:  
Location ID (FieldPoint): HA-42  
Matrix: SO  
Sample QC Type (SACode): CS  
Cooler ID:

**Receive Date:** 09/29/2017 16:35  
**Sampling Date:** 09/28/2017 08:37  
**Sample Depth:** ---  
**Lab Matrix:** Solids  
**Sample Type:** Soil  
Delivery Work Order:  
Global ID:  
Location ID (FieldPoint): HA-42  
Matrix: SO  
Sample QC Type (SACode): CS  
Cooler ID:

Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:23  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1727760-07	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727760-08	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-42-8
1727760-09	<b>Sampled By:</b>	SISL
	<b>Sampling Point:</b>	HA-43-1
1727760-07	<b>Receive Date:</b>	09/29/2017 16:35
	<b>Sampling Date:</b>	09/28/2017 08:45
1727760-08	<b>Sample Depth:</b>	---
	<b>Lab Matrix:</b>	Solids
1727760-09	<b>Sample Type:</b>	Soil
	<b>Delivery Work Order:</b>	
1727760-07	<b>Global ID:</b>	
	<b>Location ID (FieldPoint):</b>	HA-42
1727760-08	<b>Matrix:</b>	SO
	<b>Sample QC Type (SACode):</b>	CS
1727760-09	<b>Cooler ID:</b>	
1727760-07	<b>Receive Date:</b>	09/29/2017 16:35
	<b>Sampling Date:</b>	09/28/2017 09:40
1727760-08	<b>Sample Depth:</b>	---
	<b>Lab Matrix:</b>	Solids
1727760-09	<b>Sample Type:</b>	Soil
	<b>Delivery Work Order:</b>	
1727760-07	<b>Global ID:</b>	
	<b>Location ID (FieldPoint):</b>	HA-43
1727760-08	<b>Matrix:</b>	SO
	<b>Sample QC Type (SACode):</b>	CS
1727760-09	<b>Cooler ID:</b>	

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**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1727760-10	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727760-10	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-43-5
1727760-10	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/29/2017 16:35
1727760-10	<b>Sampling Date:</b>	09/28/2017 10:15
	<b>Sample Depth:</b>	---
1727760-10	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727760-10	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727760-10	<b>Location ID (FieldPoint):</b>	HA-43
	<b>Matrix:</b>	SO
1727760-10	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727760-11	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727760-11	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-43-8
1727760-11	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/29/2017 16:35
1727760-11	<b>Sampling Date:</b>	09/28/2017 10:23
	<b>Sample Depth:</b>	---
1727760-11	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727760-11	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727760-11	<b>Location ID (FieldPoint):</b>	HA-43
	<b>Matrix:</b>	SO
1727760-11	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727760-12	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727760-12	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-44-1
1727760-12	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/29/2017 16:35
1727760-12	<b>Sampling Date:</b>	09/28/2017 10:45
	<b>Sample Depth:</b>	---
1727760-12	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727760-12	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727760-12	<b>Location ID (FieldPoint):</b>	HA-44
	<b>Matrix:</b>	SO
1727760-12	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1727760-13	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727760-14	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-44-3
1727760-15	<b>Sampled By:</b>	SISL
	<b>Sampling Point:</b>	HA-44-5
1727760-16	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-44-8
1727760-17	<b>Sampled By:</b>	SISL
	<b>Sampling Point:</b>	HA-44-8

**Receive Date:** 09/29/2017 16:35  
**Sampling Date:** 09/28/2017 10:50  
**Sample Depth:** ---  
**Lab Matrix:** Solids  
**Sample Type:** Soil  
Delivery Work Order:  
Global ID:  
Location ID (FieldPoint): HA-44  
Matrix: SO  
Sample QC Type (SACode): CS  
Cooler ID:

**Receive Date:** 09/29/2017 16:35  
**Sampling Date:** 09/28/2017 10:50  
**Sample Depth:** ---  
**Lab Matrix:** Solids  
**Sample Type:** Soil  
Delivery Work Order:  
Global ID:  
Location ID (FieldPoint): HA-44  
Matrix: SO  
Sample QC Type (SACode): CS  
Cooler ID:

**Receive Date:** 09/29/2017 16:35  
**Sampling Date:** 09/28/2017 11:05  
**Sample Depth:** ---  
**Lab Matrix:** Solids  
**Sample Type:** Soil  
Delivery Work Order:  
Global ID:  
Location ID (FieldPoint): HA-44  
Matrix: SO  
Sample QC Type (SACode): CS  
Cooler ID:

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**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1727760-16	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727760-16	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-46-1
1727760-16	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/29/2017 16:35
1727760-16	<b>Sampling Date:</b>	09/28/2017 13:10
	<b>Sample Depth:</b>	---
1727760-16	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727760-16	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727760-16	<b>Location ID (FieldPoint):</b>	HA-46
	<b>Matrix:</b>	SO
1727760-16	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727760-17	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727760-17	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-46-3
1727760-17	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/29/2017 16:35
1727760-17	<b>Sampling Date:</b>	09/28/2017 13:15
	<b>Sample Depth:</b>	---
1727760-17	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727760-17	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727760-17	<b>Location ID (FieldPoint):</b>	HA-46
	<b>Matrix:</b>	SO
1727760-17	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727760-18	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727760-18	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-46-5
1727760-18	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/29/2017 16:35
1727760-18	<b>Sampling Date:</b>	09/28/2017 13:20
	<b>Sample Depth:</b>	---
1727760-18	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727760-18	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727760-18	<b>Location ID (FieldPoint):</b>	HA-46
	<b>Matrix:</b>	SO
1727760-18	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1727760-19	<b>COC Number:</b>	---	<b>Receive Date:</b>	09/29/2017 16:35
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b>	09/28/2017 13:30
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b>	---
	<b>Sampling Point:</b>	HA-46-8	<b>Lab Matrix:</b>	Solids
	<b>Sampled By:</b>	SISL	<b>Sample Type:</b>	Soil
			<b>Delivery Work Order:</b>	
			<b>Global ID:</b>	
			<b>Location ID (FieldPoint):</b>	HA-46
			<b>Matrix:</b>	SO
			<b>Sample QC Type (SACode):</b>	CS
			<b>Cooler ID:</b>	



**EMSL Analytical, Inc.**

464 McCormick Street San Leandro, CA 94577  
Tel/Fax: (510) 895-3675 / (510) 895-3680  
<http://www.EMSL.com / sanleandrolab@emsl.com>

EMSL Order: 091800328  
Customer ID: BCLA50  
Customer PO: 1727760  
Project ID:

**Attention:** Molly Meyers  
BC Laboratories, Inc.  
4100 Atlas Court  
Bakersfield, CA 93308

**Phone:** (661) 327-4911  
**Fax:** (661) 327-1918  
**Received Date:** 01/04/2018 9:30 AM  
**Analysis Date:** 01/09/2018  
**Collected Date:** 09/28/2017

**Project:** 1727760

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020  
Method(s) using Polarized Light Microscopy**

Sample	Description	Appearance	% Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
1727760-08		Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
091800328-0001	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727760-10		Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
091800328-0002	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727760-14		Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
091800328-0003	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727760-18		Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
091800328-0004	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				

Analyst(s)  
Adam C. Fink (4)

  
Matthew Batongbacal  
or Other Approved Signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The limit of detection as stated in the method is 1%. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The test results contained within this report meet the requirements of NELAC unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from: 01/10/2018 02:57:12

ASB\_PLM\_0008\_0001 - 1.78 Printed: 1/9/2018 11:57 PM

Page 1 of 1



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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727760-01	<b>Client Sample Name:</b>	Former Northern Landfill, HA-39-3, 9/28/2017 7:45:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	280	70	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	140	17	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>1600</b>	<b>mg/kg</b>	<b>280</b>	<b>91</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	94.4	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/09/17 22:30	10/14/17 01:25	AS1	GC-2	14.019	B[J]1131

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727760-02	<b>Client Sample Name:</b>	Former Northern Landfill, HA-39-5, 9/28/2017 7:50:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	290	73	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	150	17	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>1200</b>	<b>mg/kg</b>	<b>290</b>	<b>95</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	111	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/09/17 22:30	10/14/17 01:02	AS1	GC-2	14.563	B[J]1131

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## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727760-03	<b>Client Sample Name:</b>	Former Northern Landfill, HA-39-8, 9/28/2017 8:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>210</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	89.6	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/09/17 22:30	10/14/17 00:39	AS1	GC-2	1.003	BJ1131

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## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727760-04	<b>Client Sample Name:</b>	Former Northern Landfill, HA-42-1, 9/28/2017 8:25:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>22</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	85.1	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/09/17 22:30	10/13/17 23:09	AS1	GC-2	0.987	B[J]1131

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727760-05	<b>Client Sample Name:</b>	Former Northern Landfill, HA-42-3, 9/28/2017 8:33:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>36</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	96.8	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/09/17 22:30	10/16/17 12:35	AS1	GC-2	0.997	B[J]1131

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## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727760-07	<b>Client Sample Name:</b>	Former Northern Landfill, HA-42-8, 9/28/2017 8:45:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	74.5	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/09/17 22:30	10/13/17 15:29	AS1	GC-2	0.987	BJ1131

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## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727760-08	<b>Client Sample Name:</b>	Former Northern Landfill, HA-43-1, 9/28/2017 9:40:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>67</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND	<b>A57</b>	1
Tetracosane (Surrogate)	84.7	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/09/17 22:30	10/13/17 23:32	AS1	GC-2	0.993	BJ1131

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727760-09	<b>Client Sample Name:</b>	Former Northern Landfill, HA-43-3, 9/28/2017 9:15:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	78.3	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/09/17 22:30	10/13/17 06:41	AS1	GC-2	1.010	BJ1131

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:23  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727760-11	<b>Client Sample Name:</b>	Former Northern Landfill, HA-43-8, 9/28/2017 10:23:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	100	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/09/17 22:30	10/13/17 05:10	AS1	GC-2	1.010	B[J]1131

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Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:23  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727760-12	<b>Client Sample Name:</b>	Former Northern Landfill, HA-44-1, 9/28/2017 10:45:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	80.5	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/09/17 22:30	10/13/17 07:03	AS1	GC-2	1.017	BJ1131

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**Reported:** 01/19/2018 12:23  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727760-13	<b>Client Sample Name:</b>	Former Northern Landfill, HA-44-3, 9/28/2017 10:50:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	76.1	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/09/17 22:30	10/13/17 06:18	AS1	GC-2	0.984	B[J]1131

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**Reported:** 01/19/2018 12:23  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727760-15	<b>Client Sample Name:</b>	Former Northern Landfill, HA-44-8, 9/28/2017 11:05:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	75.9	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/09/17 22:30	10/13/17 05:33	AS1	GC-2	1.017	BJ1131

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**Reported:** 01/19/2018 12:23  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727760-16	<b>Client Sample Name:</b>	Former Northern Landfill, HA-46-1, 9/28/2017 1:10:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>160</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	60.3	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/09/17 22:30	10/14/17 00:17	AS1	GC-2	0.987	BJ1131

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Environmental Testing Laboratory Since 1949



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**Reported:** 01/19/2018 12:23  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727760-17	<b>Client Sample Name:</b>	Former Northern Landfill, HA-46-3, 9/28/2017 1:15:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	58.9	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/09/17 22:30	10/13/17 22:47	AS1	GC-2	1.014	BJ1131

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**Reported:** 01/19/2018 12:23  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

BCL Sample ID: 1727760-19		Client Sample Name: Former Northern Landfill, HA-46-8, 9/28/2017 1:30:00PM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	62.5	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/09/17 22:30	10/13/17 05:55	AS1	GC-2	0.990	BJ1131

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**Reported:** 01/19/2018 12:23  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J1131</b>						
TPH - Gasoline	B[J1131-BLK1	ND	mg/kg	20	5.0	
TPH - Diesel (FFP)	B[J1131-BLK1	ND	mg/kg	10	1.2	
TPH - Motor Oil	B[J1131-BLK1	ND	mg/kg	20	6.5	
<b>Tetracosane (Surrogate)</b>	<b>B[J1131-BLK1</b>	<b>72.0</b>	<b>%</b>	<b>20 - 145 (LCL - UCL)</b>		

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**Reported:** 01/19/2018 12:23  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: B[J1131										
TPH - Diesel (FFP)	B[J1131-BS1	LCS	87.163	84.746	mg/kg	103		64 - 124		
Tetracosane (Surrogate)	B[J1131-BS1	LCS	3.5903	3.3912	mg/kg	106		20 - 145		

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**Reported:** 01/19/2018 12:23  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J1131		Used client sample: Y - Description: HA-42-8, 09/28/2017 08:45									
TPH - Diesel (FFP)	MS	1727760-07	ND	75.213	83.893	mg/kg		89.7		52 - 131	
	MSD	1727760-07	ND	83.548	84.175	mg/kg	10.5	99.3	30	52 - 131	
Tetracosane (Surrogate)	MS	1727760-07	ND	2.8587	3.3570	mg/kg		85.2		20 - 145	
	MSD	1727760-07	ND	3.5114	3.3684	mg/kg	20.5	104		20 - 145	

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# **EMSL Analytical, Inc.**

464 McCormick Street San Leandro, CA 94577  
Tel/Fax: (510) 895-3675 / (510) 895-3680  
<http://www.EMSL.com> / [sanleandro@emsl.com](mailto:sanleandro@emsl.com)

EMSL Order: 091719467  
Customer ID: BCLA50  
Customer PO: 1727760  
Project ID:

Attention: Molly Meyers  
BC Laboratories, Inc.  
4100 Atlas Court  
Bakersfield, CA 93308

Phone: (661) 327-4911  
Fax: (661) 327-1918  
Received Date: 10/06/2017 10:45 AM  
Analysis Date: 10/13/2017  
Collected Date: 09/28/2017

Project: 1727760

## **Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy**

Sample	Description	Appearance	% Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
1727760-01		Tan/Black Non-Fibrous Homogeneous		50% Quartz 6% Matrix 44% Non-fibrous (Other)	<1% Chrysotile
091719467-0001	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727760-02		Tan/Black Non-Fibrous Homogeneous		50% Quartz 5% Matrix 45% Non-fibrous (Other)	<1% Chrysotile
091719467-0002	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727760-03		Tan/Black Non-Fibrous Homogeneous		50% Quartz 5% Matrix 45% Non-fibrous (Other)	<1% Chrysotile
091719467-0003	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727760-04		Tan/Black Non-Fibrous Homogeneous		50% Quartz 3% Matrix 47% Non-fibrous (Other)	<1% Chrysotile
091719467-0004	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727760-05		Tan/Black Non-Fibrous Homogeneous		50% Quartz 5% Matrix 45% Non-fibrous (Other)	<1% Chrysotile
091719467-0005	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727760-07		Tan Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
091719467-0006	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727760-08		Tan/Black Non-Fibrous Homogeneous		50% Quartz 5% Matrix 45% Non-fibrous (Other)	<1% Chrysotile
091719467-0007	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727760-09		Tan Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	<1% Chrysotile
091719467-0008	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727760-11		Tan/Black Non-Fibrous Homogeneous		60% Quartz 2% Matrix 38% Non-fibrous (Other)	<1% Chrysotile
091719467-0009	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727760-12		Tan/Black Non-Fibrous Homogeneous		50% Quartz 2% Matrix 48% Non-fibrous (Other)	<1% Chrysotile
091719467-0010	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727760-13		Tan Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	<1% Chrysotile
091719467-0011	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727760-15		Tan Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
091719467-0012	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				

Initial report from: 10/13/2017 12:44:53

ASB\_PLM\_0008\_0001 - 1.78 Printed: 10/13/2017 12:54 PM

Page 1 of 2



**EMSL Analytical, Inc.**

484 McCormick Street San Leandro, CA 94577

Tel/Fax: (510) 895-3675 / (510) 895-3680

<http://www.EMSL.com / sanleandrolab@emsl.com>

EMSL Order: 091719467

Customer ID: BCLA50

Customer PO: 1727760

Project ID:

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020  
Method(s) using Polarized Light Microscopy**

Sample	Description	Appearance	Non-Asbestos		Asbestos % Type
			% Fibrous	% Non-Fibrous	
1727760-16		Tan/Black Non-Fibrous Homogeneous		50% Quartz 5% Matrix 45% Non-fibrous (Other)	<1% Chrysotile
091719467-0013 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1727760-17		Tan Non-Fibrous Homogeneous		50% Quartz 50% Non-fibrous (Other)	<1% Chrysotile
091719467-0014 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1727760-19		Tan/Black Non-Fibrous Homogeneous		60% Quartz 2% Matrix 38% Non-fibrous (Other)	<1% Chrysotile
091719467-0015 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					

Analyst(s)

Shane Heisser (15)



Matthew Batongbacal  
or Other Approved Signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The limit of detection as stated in the method is 1%. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The test results contained within this report meet the requirements of NELAC unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from: 10/13/2017 12:44:53

ASB\_PLM\_0008\_0001 - 1.78 Printed: 10/13/2017 12:54 PM

Page 2 of 2

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3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:23  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

### Notes And Definitions

MDL      Method Detection Limit  
ND      Analyte Not Detected  
PQL      Practical Quantitation Limit  
A57      Chromatogram not typical of motor oil.



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



Date of Report: 07/20/2018

Kirk Henning

Stantec - SLO

3437 Empresa Drive, Suite A

Suite A

San Luis Obispo, CA 93401

Client Project: 185850429.300.0006

BCL Project: Former Northern Landfill

BCL Work Order: 1727761

Invoice ID: B282553, B289259

Enclosed are the results of analyses for samples received by the laboratory on 9/29/2017. If you have any questions concerning this report, please feel free to contact me.

Revised Report: This report supercedes Report ID 1000697615

Sincerely,

Contact Person: Molly Meyers  
Client Service Rep

Stuart Buttram  
Technical Director

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

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## Chain of Custody Form

[illegible]

BC Laboratories, Inc. - 4100 Atlas Ct. - Bakersfield, CA 93308 - 661.327.4911 - Fax: 661.327.1918 - [www.bclabs.com](http://www.bclabs.com)

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## Chain of Custody Form

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Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1727761 Page 3 of 7

# Chain of Custody Form

Page 1 of 2

## Analysis Requested

Comments:

Please refer to the back of this page for completion instructions and method legend.

Sample Matrix

Waste Water  
Ground Water  
Drinking Water  
Sludge  
Soil

Result Request "Surcharge"  
☐ STD ☐ 5 Day\*\* ☐ 2 Day\*\* ☐ 1 Day\*\*

Notes

CHK BY: [Signature]  
SUB-OUT ☒

**BC LABORATORIES, INC.**

17-27761

Client: Stantec  
Project #: 18552429.300.0006  
Project Name: Former Northern Landfill  
Street Address: 3437 Empress Drive, Suite A  
City, State, Zip: San Luis Obispo, CA 93401  
Phone: (805) 250-2851 Fax:   
Email: Kirk.Henning@stantec.com  
Work Order #:

Sample #	Description	Date Sampled	Time Sampled
1	HA-47-1	09/29/17	08:00
2	HA-47-3		08:05
3	HA-47-5		08:10
4	HA-47-8		08:20
5	HA-45-1		08:45
6	HA-45-3		08:50
7	HA-45-5		08:55
8	HA-45-8		09:05
9	HA-48-1		10:00
10	HA-48-3		10:05
11	HA-48-5		10:10
12	HA-48-8		10:21
13	HA-3201		11:00
14	HA-3203		11:15

Global ID (Needed for EDF)

EDF Required? Geotracker

☒ Same as above

1. Relinquished By

☐ Yes ☐ No

Send Copy to State of CA? (EDT)

☐ Yes ☐ No

1. Relinquished By

2. Relinquished By

☐ Yes ☐ No

3. Relinquished By

1. Received By

2. Received By

3. Received By

Date

Time

Date

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1727761 Page 5 of 7

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page 1 of 3					
Submission #: 17-27761									
<b>SHIPPING INFORMATION</b>		<b>SHIPPING CONTAINER</b>		<b>FREE LIQUID</b>					
Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/>		Ice Chest <input checked="" type="checkbox"/> None <input type="checkbox"/> Box <input type="checkbox"/>		YES <input type="checkbox"/> NO <input type="checkbox"/>					
BC Lab Field Service <input checked="" type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		Other <input type="checkbox"/> (Specify) _____		W / S					
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments:									
Custody Seals: Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments:									
Intact? Yes <input type="checkbox"/> No <input type="checkbox"/> Intact? Yes <input type="checkbox"/> No <input type="checkbox"/>									
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>									
COC Received YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		Emissivity: 0.98 Container: Glass Jar Thermometer ID: TH274		Date/Time: 09/29/17 16:35					
Temperature: (A) 0.7 °C / (C) 0.4 °C		Analyst Init: VMD							
<b>SAMPLE CONTAINERS</b>		<b>SAMPLE NUMBERS</b>							
		1 2 3 4 5 6 7 8 9 10							
QT PE UNPRES		11 12 13 14 15 16 17 18 19 20							
4oz / 8oz / 16oz PE UNPRES									
2oz Cr <sup>6+</sup>									
QT INORGANIC CHEMICAL METALS									
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz									
PT CYANIDE									
PT NITROGEN FORMS									
PT TOTAL SULFIDE									
2oz. NITRATE / NITRITE									
PT TOTAL ORGANIC CARBON									
PT CHEMICAL OXYGEN DEMAND									
PIA PHENOLICS									
40ml VOA VIAL TRAVEL BLANK									
40ml VOA VIAL									
QT EPA 1664									
PT ODOR									
RADIOLOGICAL									
BACTERIOLOGICAL									
40 ml VOA VIAL- 504									
QT EPA 508/608/808									
QT EPA 515.1/8150									
QT EPA 525									
QT EPA 525 TRAVEL BLANK									
40ml EPA 547									
40ml EPA 531.I									
8oz EPA 548									
QT EPA 549									
QT EPA 8015M									
QT EPA 8170									
8oz / 16oz / 32oz AMBER									
8oz / 16oz / 32oz JAR		A							
SOIL SLEEVE									
PCB VIAL									
PLASTIC BAG									
TEDLAR BAG									
FERROUS IRON									
ENCORE									
SMART KIT									
SUMMA CANISTER									

Comments:

Sample Numbering Completed By:

A = Actual / C = Corrected

IDL

Date/Time:

10-2-17 15:19

Rev 21 05/23/2016

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1727761 Page 6 of 7

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page <u>2</u> of <u>3</u>							
Submission #: <u>17-27761</u>											
<b>SHIPPING INFORMATION</b> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/> BC Lab Field Service <input checked="" type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		<b>SHIPPING CONTAINER</b> Ice Chest <input checked="" type="checkbox"/> None <input type="checkbox"/> Box <input type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		<b>FREE LIQUID</b> YES <input type="checkbox"/> NO <input type="checkbox"/> W / S							
Refrigerant: <u>Ice</u> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: _____											
Custody Seals <u>Ice Chest</u> <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments: _____ Intact? Yes <input type="checkbox"/> No <input type="checkbox"/> Intact? Yes <input type="checkbox"/> No <input type="checkbox"/>											
All samples received? Yes <input type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input type="checkbox"/> No <input type="checkbox"/>											
COC Received <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Emissivity: <u>0.98</u> Container: <u>glass</u> Thermometer ID: <u>TH247</u> Date/Time: <u>0929-17</u> Temperature: (A) <u>28</u> °C / (C) <u>325</u> °C Analyst Init: <u>LM</u>									
<b>SAMPLE CONTAINERS</b>		<b>SAMPLE NUMBERS</b>									
		<u>16</u>	<u>27</u>	<u>28</u>	<u>29</u>	<u>5</u>	<u>6</u>	<u>7</u>	<u>8</u>	<u>9</u>	<u>10</u>
QT PE UNPRES											
4oz / 8oz / 16oz PE UNPRES											
2oz Cr <sup>6</sup>											
QT INORGANIC CHEMICAL METALS											
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz											
PT CYANIDE											
PT NITROGEN FORMS											
PT TOTAL SULFIDE											
2oz. NITRATE / NITRITE											
PT TOTAL ORGANIC CARBON											
PT CHEMICAL OXYGEN DEMAND											
PIA PHENOLICS											
40ml VOA VIAL TRAVEL BLANK											
40ml VOA VIAL											
QT EPA 1664											
PT ODOR											
RADIOLOGICAL											
BACTERIOLOGICAL											
40 ml VOA VIAL- 504											
QT EPA 508/608/8080											
QT EPA 515.1/8150											
QT EPA 525											
QT EPA 525 TRAVEL BLANK											
40ml EPA 547											
40ml EPA 531.1											
8oz EPA 548											
QT EPA 549											
QT EPA 8015M											
QT EPA 8270											
8oz / 16oz / 32oz AMBER											
8oz / 16oz / 32oz CLEAR		<u>A</u>	<u>A</u>	<u>A</u>	<u>A</u>						
SOH. SLEEVE											
PCB VIAL											
PLASTIC BAG											
TEDLAR BAG											
FERROUS IRON											
ENCORE											
SMART KIT											
MUMMA CANISTER											
Comments: _____											
Numbering Completed By: <u>JDL</u>		Date/Time: <u>10-2-17</u> <u>1519</u>									
Initial / C = Corrected		Rev 21 05/23/2016 18:\WPDoc\WordPerfect\LAB_DOC\FORMS\GABRECrev 201									

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1727761 Page 7 of 7

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page 3 of 3	
Submission #: 17-27761					
<b>SHIPPING INFORMATION</b>			<b>SHIPPING CONTAINER</b>		<b>FREE LIQUID</b>
Fed Ex <input type="checkbox"/>	UPS <input type="checkbox"/>	Ontrac <input type="checkbox"/>	Hand Delivery <input type="checkbox"/>	Ice Chest <input checked="" type="checkbox"/>	YES <input type="checkbox"/> NO <input type="checkbox"/>
BC Lab Field Service <input checked="" type="checkbox"/>			Other (Specify) _____	Other <input type="checkbox"/> (Specify) _____	W / S
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: _____					
Custody Seals: Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments: _____					
Intact? Yes <input type="checkbox"/> No <input type="checkbox"/> Intact? Yes <input type="checkbox"/> No <input type="checkbox"/>					
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>					
COC Received		Emissivity: 0.98		Container: Glass Jar Thermometer ID: TH74	
YES <input checked="" type="checkbox"/> NO <input type="checkbox"/>		Temperature: (A) 12.8 °C / 101.0 °F		Date/Time: 09/29/17 16:30	
				Analyst Init: YML	
SAMPLE CONTAINERS		SAMPLE NUMBERS			
		12 15 16 110 111 112 113 114 117 118			
QT PE UNPRES					
4oz / 8oz / 16oz PE UNPRES					
2oz Cr <sup>4</sup>					
QT INORGANIC CHEMICAL METALS					
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz					
PT CYANIDE					
PT NITROGEN FORMS					
PT TOTAL SULFIDE					
2oz NITRATE / NITRITE					
PT TOTAL ORGANIC CARBON					
PT CHEMICAL OXYGEN DEMAND					
P/A PHENOLICS					
40ml VOA VIAL TRAVEL BLANK					
40ml VOA VIAL					
QT EPA 1664					
PT ODOR					
RADIOLOGICAL					
BACTERIOLOGICAL					
40 ml VOA VIAL- 504					
QT EPA 508/608/808					
QT EPA 515.1/8150					
QT EPA 525					
QT EPA 525 TRAVEL BLANK					
40ml EPA 547					
40ml EPA 531.1					
8oz EPA 548					
QT EPA 549					
QT EPA 8015M					
QT EPA 8270					
8oz / 16oz / 32oz AMBER		A A A A A A A A A			
8oz / 16oz / 32oz JAR					
SOIL SLEEVE					
PCB VIAL					
PLASTIC BAG					
TEDLAR BAG					
FERROUS IRON					
ENCORE					
SMART KIT					
SUMMA CANISTER					

Comments:

Sample Numbering Completed By: JML

Date/Time: 10-2-17 1519

Rev 21 06/23/2016

(S:\WPDoc\WordPerfect\LAB\_DOC\SI FORMS\ISAMRECrev 20)

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 07/20/2018 15:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1727761-01	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727761-01	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-47-1
1727761-01	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/29/2017 16:35
1727761-01	<b>Sampling Date:</b>	09/29/2017 00:00
	<b>Sample Depth:</b>	---
1727761-01	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727761-01	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727761-01	<b>Location ID (FieldPoint):</b>	HA-47
	<b>Matrix:</b>	SO
1727761-01	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727761-02	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727761-02	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-47-3
1727761-02	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/29/2017 16:35
1727761-02	<b>Sampling Date:</b>	09/29/2017 08:05
	<b>Sample Depth:</b>	---
1727761-02	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727761-02	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727761-02	<b>Location ID (FieldPoint):</b>	HA-47
	<b>Matrix:</b>	SO
1727761-02	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727761-03	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727761-03	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-47-5
1727761-03	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/29/2017 16:35
1727761-03	<b>Sampling Date:</b>	09/29/2017 08:10
	<b>Sample Depth:</b>	---
1727761-03	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727761-03	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727761-03	<b>Location ID (FieldPoint):</b>	HA-47
	<b>Matrix:</b>	SO
1727761-03	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 07/20/2018 15:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1727761-04	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727761-05	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-47-8
1727761-06	<b>Sampled By:</b>	SISL
	<b>Sampling Point:</b>	HA-45-1
1727761-06	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-45-3
1727761-06	<b>Sampled By:</b>	SISL
	<b>Sampling Point:</b>	HA-45-3

**Receive Date:** 09/29/2017 16:35  
**Sampling Date:** 09/29/2017 08:20  
**Sample Depth:** ---  
**Lab Matrix:** Solids  
**Sample Type:** Soil  
Delivery Work Order:  
Global ID:  
Location ID (FieldPoint): HA-47  
Matrix: SO  
Sample QC Type (SACode): CS  
Cooler ID:

**Receive Date:** 09/29/2017 16:35  
**Sampling Date:** 09/29/2017 08:45  
**Sample Depth:** ---  
**Lab Matrix:** Solids  
**Sample Type:** Soil  
Delivery Work Order:  
Global ID:  
Location ID (FieldPoint): HA-45  
Matrix: SO  
Sample QC Type (SACode): CS  
Cooler ID:

**Receive Date:** 09/29/2017 16:35  
**Sampling Date:** 09/29/2017 08:50  
**Sample Depth:** ---  
**Lab Matrix:** Solids  
**Sample Type:** Soil  
Delivery Work Order:  
Global ID:  
Location ID (FieldPoint): HA-45  
Matrix: SO  
Sample QC Type (SACode): CS  
Cooler ID:

Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 07/20/2018 15:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1727761-07	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727761-08	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-45-5
1727761-09	<b>Sampled By:</b>	SISL
	<b>Sampling Point:</b>	HA-45-8
1727761-07	<b>Receive Date:</b>	09/29/2017 16:35
	<b>Sampling Date:</b>	09/29/2017 08:55
1727761-08	<b>Sample Depth:</b>	---
	<b>Lab Matrix:</b>	Solids
1727761-09	<b>Sample Type:</b>	Soil
	<b>Delivery Work Order:</b>	
1727761-07	<b>Global ID:</b>	
	<b>Location ID (FieldPoint):</b>	HA-45
1727761-08	<b>Matrix:</b>	SO
	<b>Sample QC Type (SACode):</b>	CS
1727761-09	<b>Cooler ID:</b>	
1727761-07	<b>Receive Date:</b>	09/29/2017 16:35
	<b>Sampling Date:</b>	09/29/2017 09:05
1727761-08	<b>Sample Depth:</b>	---
	<b>Lab Matrix:</b>	Solids
1727761-09	<b>Sample Type:</b>	Soil
	<b>Delivery Work Order:</b>	
1727761-07	<b>Global ID:</b>	
	<b>Location ID (FieldPoint):</b>	HA-45
1727761-08	<b>Matrix:</b>	SO
	<b>Sample QC Type (SACode):</b>	CS
1727761-09	<b>Cooler ID:</b>	
1727761-07	<b>Receive Date:</b>	09/29/2017 16:35
	<b>Sampling Date:</b>	09/29/2017 10:00
1727761-08	<b>Sample Depth:</b>	---
	<b>Lab Matrix:</b>	Solids
1727761-09	<b>Sample Type:</b>	Soil
	<b>Delivery Work Order:</b>	
1727761-07	<b>Global ID:</b>	
	<b>Location ID (FieldPoint):</b>	HA-48
1727761-08	<b>Matrix:</b>	SO
	<b>Sample QC Type (SACode):</b>	CS
1727761-09	<b>Cooler ID:</b>	

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 07/20/2018 15:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1727761-10	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727761-10	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-48-3
1727761-10	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/29/2017 16:35
1727761-10	<b>Sampling Date:</b>	09/29/2017 10:05
	<b>Sample Depth:</b>	---
1727761-10	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727761-10	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727761-10	<b>Location ID (FieldPoint):</b>	HA-48
	<b>Matrix:</b>	SO
1727761-10	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727761-11	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727761-11	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-48-5
1727761-11	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/29/2017 16:35
1727761-11	<b>Sampling Date:</b>	09/29/2017 10:10
	<b>Sample Depth:</b>	---
1727761-11	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727761-11	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727761-11	<b>Location ID (FieldPoint):</b>	HA-48
	<b>Matrix:</b>	SO
1727761-11	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727761-12	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727761-12	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-48-8
1727761-12	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/29/2017 16:35
1727761-12	<b>Sampling Date:</b>	09/29/2017 10:21
	<b>Sample Depth:</b>	---
1727761-12	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727761-12	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727761-12	<b>Location ID (FieldPoint):</b>	HA-48
	<b>Matrix:</b>	SO
1727761-12	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 07/20/2018 15:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1727761-13	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727761-13	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-32(a)-1
1727761-13	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/29/2017 16:35
1727761-13	<b>Sampling Date:</b>	09/29/2017 11:00
	<b>Sample Depth:</b>	---
1727761-13	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727761-13	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727761-13	<b>Location ID (FieldPoint):</b>	HA-32
	<b>Matrix:</b>	SO
1727761-13	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727761-14	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727761-14	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-32(a)-3
1727761-14	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/29/2017 16:35
1727761-14	<b>Sampling Date:</b>	09/29/2017 00:00
	<b>Sample Depth:</b>	---
1727761-14	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727761-14	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727761-14	<b>Location ID (FieldPoint):</b>	HA-32
	<b>Matrix:</b>	SO
1727761-14	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727761-15	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727761-15	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-32(b)-3
1727761-15	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	09/29/2017 16:35
1727761-15	<b>Sampling Date:</b>	09/29/2017 12:50
	<b>Sample Depth:</b>	---
1727761-15	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727761-15	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727761-15	<b>Location ID (FieldPoint):</b>	HA-32
	<b>Matrix:</b>	SO
1727761-15	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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3437 Empresa Drive, Suite A  
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San Luis Obispo, CA 93401

**Reported:** 07/20/2018 15:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1727761-16	<b>COC Number:</b>	---	<b>Receive Date:</b>	09/29/2017 16:35
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b>	09/29/2017 13:00
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b>	---
	<b>Sampling Point:</b>	HA-32(b)-5	<b>Lab Matrix:</b>	Solids
	<b>Sampled By:</b>	SISL	<b>Sample Type:</b>	Soil
			<b>Delivery Work Order:</b>	
			<b>Global ID:</b>	
			<b>Location ID (FieldPoint):</b>	HA-32
			<b>Matrix:</b>	SO
			<b>Sample QC Type (SACode):</b>	CS
1727761-17			<b>Cooler ID:</b>	
	<b>COC Number:</b>	---	<b>Receive Date:</b>	09/29/2017 16:35
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b>	09/29/2017 13:08
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b>	---
	<b>Sampling Point:</b>	HA-32(b)-8	<b>Lab Matrix:</b>	Solids
	<b>Sampled By:</b>	SISL	<b>Sample Type:</b>	Soil
			<b>Delivery Work Order:</b>	
			<b>Global ID:</b>	
			<b>Location ID (FieldPoint):</b>	HA-32
			<b>Matrix:</b>	SO
			<b>Sample QC Type (SACode):</b>	CS
			<b>Cooler ID:</b>	





**EMSL Analytical, Inc.**

464 McCormick Street San Leandro, CA 94577  
Tel/Fax: (510) 895-3675 / (510) 895-3680  
<http://www.EMSL.com / sanleandrolab@emsl.com>

EMSL Order: 091800324  
Customer ID: BCLA50  
Customer PO: 1727761  
Project ID:

**Attention:** Molly Meyers  
BC Laboratories, Inc.  
4100 Atlas Court  
Bakersfield, CA 93308

**Phone:** (661) 327-4911  
**Fax:** (661) 327-1918  
**Received Date:** 01/04/2018 12:30 PM  
**Analysis Date:** 01/09/2018  
**Collected Date:**

**Project:** 1727761

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020  
Method(s) using Polarized Light Microscopy**

Sample	Description	Appearance	Non-Asbestos		Asbestos % Type
			% Fibrous	% Non-Fibrous	
1727761-03		Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
091800324-0001 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1727761-11		Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
091800324-0002 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					

Analyst(s)  
Adam C. Fink (2)

  
Matthew Batongbacal  
or Other Approved Signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The limit of detection as stated in the method is 1%. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The test results contained within this report meet the requirements of NELAC unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from: 01/10/2018 03:00:19

ASB\_PLM\_0008\_0001 - 1.78 Printed: 1/10/2018 12:00 AM

Page 1 of 1



Stantec - SLO  
3437 Empresa Drive, Suite A  
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**Reported:** 07/20/2018 15:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727761-01	<b>Client Sample Name:</b>	Former Northern Landfill, HA-47-1, 9/29/2017 12:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	70.3	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/09/17 13:00	10/15/17 18:55	AS1	GC-13	0.997	BJ1152

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**Reported:** 07/20/2018 15:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727761-02	<b>Client Sample Name:</b>	Former Northern Landfill, HA-47-3, 9/29/2017 8:05:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	81.6	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/09/17 13:00	10/15/17 18:09	AS1	GC-13	1	BJ1152

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**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727761-04	<b>Client Sample Name:</b>	Former Northern Landfill, HA-47-8, 9/29/2017 8:20:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	86.4	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/09/17 13:00	10/15/17 18:32	AS1	GC-13	0.990	BJ1152

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Environmental Testing Laboratory Since 1949



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**Reported:** 07/20/2018 15:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727761-05	<b>Client Sample Name:</b>	Former Northern Landfill, HA-45-1, 9/29/2017 8:45:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	58.1	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/09/17 13:00	10/15/17 19:18	AS1	GC-13	1.007	BJ1152

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**Reported:** 07/20/2018 15:51  
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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727761-06	<b>Client Sample Name:</b>	Former Northern Landfill, HA-45-3, 9/29/2017 8:50:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	64.3	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/09/17 13:00	10/15/17 19:41	AS1	GC-13	1.017	BJ1152

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**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727761-08	<b>Client Sample Name:</b>	Former Northern Landfill, HA-45-8, 9/29/2017 9:05:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>8.4</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND	<b>J</b>	<b>1</b>
Tetracosane (Surrogate)	69.3	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/09/17 13:00	10/15/17 17:46	AS1	GC-13	0.997	BJ1152

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**Reported:** 07/20/2018 15:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727761-09	<b>Client Sample Name:</b>	Former Northern Landfill, HA-48-1, 9/29/2017 10:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	63.8	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/09/17 13:00	10/15/17 20:51	AS1	GC-13	1.003	BJ1152

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**Reported:** 07/20/2018 15:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727761-10	<b>Client Sample Name:</b>	Former Northern Landfill, HA-48-3, 9/29/2017 10:05:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	45.3	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/09/17 13:00	10/15/17 21:14	AS1	GC-13	1.003	BJ1152

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**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727761-12	<b>Client Sample Name:</b>	Former Northern Landfill, HA-48-8, 9/29/2017 10:21:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	70.1	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/09/17 13:00	10/15/17 21:37	AS1	GC-13	1	BJ1152

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**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727761-13	<b>Client Sample Name:</b>	Former Northern Landfill, HA-32(a)-1, 9/29/2017 11:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>290</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	48.3	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/09/17 13:00	10/15/17 23:09	AS1	GC-13	1.007	BJ1152

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**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727761-14	<b>Client Sample Name:</b>	Former Northern Landfill, HA-32(a)-3, 9/29/2017 12:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	40	10	EPA-8015B/FFP	ND	A01	1
TPH - Diesel (FFP)	ND	mg/kg	20	2.4	EPA-8015B/FFP	ND	A01	1
<b>TPH - Motor Oil</b>	<b>200</b>	<b>mg/kg</b>	<b>40</b>	<b>13</b>	<b>EPA-8015B/FFP</b>	ND	<b>A01</b>	1
Tetracosane (Surrogate)	33.8	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		A01	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/09/17 13:00	10/16/17 16:32	AS1	GC-13	2.013	BJ1152

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727761-15	<b>Client Sample Name:</b>	Former Northern Landfill, HA-32(b)-3, 9/29/2017 12:50:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>140</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	68.1	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/09/17 13:00	10/15/17 22:46	AS1	GC-13	0.987	BJ1152

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727761-16	<b>Client Sample Name:</b>	Former Northern Landfill, HA-32(b)-5, 9/29/2017 1:00:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	57.6	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/09/17 13:00	10/15/17 22:00	AS1	GC-13	0.990	BJ1152

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 07/20/2018 15:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727761-17	<b>Client Sample Name:</b>	Former Northern Landfill, HA-32(b)-8, 9/29/2017 1:08:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>27</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	66.5	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/09/17 13:00	10/15/17 22:23	AS1	GC-13	0.987	BJ1152

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San Luis Obispo, CA 93401

**Reported:** 07/20/2018 15:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J1152</b>						
TPH - Gasoline	B[J1152-BLK1	ND	mg/kg	20	5.0	
TPH - Diesel (FFP)	B[J1152-BLK1	ND	mg/kg	10	1.2	
TPH - Motor Oil	B[J1152-BLK1	ND	mg/kg	20	6.5	
<b>Tetracosane (Surrogate)</b>	<b>B[J1152-BLK1</b>	<b>51.9</b>	<b>%</b>	<b>20 - 145 (LCL - UCL)</b>		





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Suite A  
San Luis Obispo, CA 93401

**Reported:** 07/20/2018 15:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: B[J1152										
TPH - Diesel (FFP)	B[J1152-BS1	LCS	56.185	83.893	mg/kg	67.0		64 - 124		
Tetracosane (Surrogate)	B[J1152-BS1	LCS	2.2159	3.3570	mg/kg	66.0		20 - 145		



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Suite A  
San Luis Obispo, CA 93401

**Reported:** 07/20/2018 15:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J1152		Used client sample: Y - Description: HA-47-1, 09/29/2017 00:00									
TPH - Diesel (FFP)	MS	1727761-01	ND	63.256	81.967	mg/kg		77.2		52 - 131	
	MSD	1727761-01	ND	62.114	84.175	mg/kg	1.8	73.8	30	52 - 131	
Tetracosane (Surrogate)	MS	1727761-01	ND	2.4318	3.2800	mg/kg		74.1		20 - 145	
	MSD	1727761-01	ND	2.4426	3.3684	mg/kg	0.4	72.5		20 - 145	

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# **EMSL Analytical, Inc.**

464 McCormick Street San Leandro, CA 94577  
Tel/Fax: (510) 895-3675 / (510) 895-3680  
<http://www.EMSL.com> / [sanleandrolab@emsl.com](mailto:sanleandrolab@emsl.com)

EMSL Order: 091719466  
Customer ID: BCLA50  
Customer PO: 1727761  
Project ID:

Attention: Molly Meyers  
BC Laboratories, Inc.  
4100 Atlas Court  
Bakersfield, CA 93308

Phone: (661) 327-4911  
Fax: (661) 327-1918  
Received Date: 10/06/2017 10:45 AM  
Analysis Date: 10/13/2017  
Collected Date: 09/29/2017

Project: 1727761

## **Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020 Method(s) using Polarized Light Microscopy**

Sample	Description	Appearance	% Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
1727761-01		Brown Non-Fibrous Homogeneous	2% Cellulose	60% Quartz 38% Non-fibrous (Other)	None Detected
091719466-0001	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727761-02		Brown Non-Fibrous Homogeneous	<1% Cellulose	60% Quartz 40% Non-fibrous (Other)	None Detected
091719466-0002	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727761-04		Brown Non-Fibrous Homogeneous	2% Cellulose	60% Quartz 38% Non-fibrous (Other)	None Detected
091719466-0003	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727761-05		Brown Non-Fibrous Homogeneous	2% Cellulose	60% Quartz 38% Non-fibrous (Other)	None Detected
091719466-0004	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727761-06		Brown Non-Fibrous Homogeneous	2% Cellulose	60% Quartz 38% Non-fibrous (Other)	None Detected
091719466-0005	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727761-08		Brown Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
091719466-0006	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727761-09		Brown Non-Fibrous Homogeneous	2% Cellulose	60% Quartz 38% Non-fibrous (Other)	None Detected
091719466-0007	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727761-10		Brown Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
091719466-0008	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727761-12		Brown Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
091719466-0009	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727761-13		Brown Non-Fibrous Homogeneous	2% Cellulose	60% Quartz 38% Non-fibrous (Other)	None Detected
091719466-0010	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727761-14		Brown/Gray/Pink Non-Fibrous Heterogeneous		45% Quartz 15% Ca Carbonate 40% Non-fibrous (Other)	<1% Amosite <1% Chrysotile
091719466-0011	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1727761-15		Brown/White/Black Non-Fibrous Heterogeneous		50% Quartz 10% Gypsum 40% Non-fibrous (Other)	None Detected
091719466-0012	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				

Initial report from: 10/13/2017 12:42:05

ASB\_PLM\_0008\_0001 - 1.78 Printed: 10/13/2017 12:42 PM

Page 1 of 2

**EMSL Analytical, Inc.**

464 McCormick Street San Leandro, CA 94577

Tel/Fax: (510) 895-3675 / (510) 895-3680

<http://www.EMSL.com> / [sanleandrolab@emsl.com](mailto:sanleandrolab@emsl.com)

EMSL Order: 091719466

Customer ID: BCLA50

Customer PO: 1727761

Project ID:

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020  
Method(s) using Polarized Light Microscopy**

Sample	Description	Appearance	Non-Asbestos		Asbestos
			% Fibrous	% Non-Fibrous	% Type
1727761-16		Brown		50% Quartz	None Detected
		Non-Fibrous		50% Non-fibrous (Other)	
		Homogeneous			
091719466-0013 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1727761-17		Brown		60% Quartz	None Detected
		Non-Fibrous		40% Non-fibrous (Other)	
		Homogeneous			
091719466-0014 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					

Analyst(s)

Cecilia Yu (14)

Matthew Batongbacal  
or Other Approved Signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The limit of detection as stated in the method is 1%. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The test results contained within this report meet the requirements of NELAC unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from: 10/13/2017 12:42:05

ASB\_PLM\_0008\_0001 - 1.78 Printed: 10/13/2017 12:42 PM

Page 2 of 2

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 07/20/2018 15:51  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit
A01	Detection and quantitation limits are raised due to sample dilution.



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



Date of Report: 01/04/2018

Kirk Henning

Stantec - SLO

3437 Empresa Drive, Suite A

Suite A

San Luis Obispo, CA 93401

Client Project: 185850429.300.0006

BCL Project: Former Northern Landfill

BCL Work Order: 1727871

Invoice ID: B282366

Enclosed are the results of analyses for samples received by the laboratory on 10/2/2017. If you have any questions concerning this report, please feel free to contact me.

Revised Report: This report supercedes Report ID 1000660569

Sincerely,

Contact Person: Molly Meyers  
Client Service Rep

Stuart Buttram  
Technical Director

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

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Chain of Custody and Cooler Receipt Form for 1727871 Page 1 of 4

# Chain of Custody Form

Analysis Requested		Comments:	
Please refer to the back of this page for completion instructions and method legend.			
Project #:	10-335129	Project Name:	Farmer Northern Landfill
Client:	Rick Henning	Project Address:	3437 Empress Drive, Suite A
City, State, Zip:	San Luis Obispo, CA 93401	Sampler(s):	John Raney
Phone:	(805) 250-2854	Fax:	
Email:	rick.henning@stark.com	Order #:	17-27871
Sample #	Description	Date Sampled	Time Sampled
1	HA-42-10.0	10/02/17	09:35
2	HA-42-12.5	11/09/17	09:45
3	HA-42-12.5-15.0	11/09/17	09:55
4	HA-42-18.5	11/10/17	10:00
5	HA-42-20.0	11/10/17	10:05
6	HA-42-25.0	11/10/17	10:12
7	HA-47-10.0	11/12/17	12:20
8	HA-47-15.0	11/12/17	12:30
9	HA-47-20.0	11/12/17	12:40
10	HA-47-25.0	11/12/17	12:50
11	HA-20-10.0	11/14/17	14:10
12	HA-20-15.0	11/14/17	14:15
13	HA-20-18.0	11/14/17	14:20
14	HA-20-20.0	11/14/17	14:25
<b>Global ID (Needed for EDF)</b>			
<b>EDF Required? Geotracker</b>			
<input type="checkbox"/> Yes <input type="checkbox"/> No			
<b>Send Copy to State of CA? (EDT)</b>			
<input type="checkbox"/> Yes <input type="checkbox"/> No			
<b>Global ID (Needed for EDF)</b>			
<b>1. Received By</b>			
<b>2. Received By</b>			
<b>3. Received By</b>			
<b>Date</b>			
<b>Time</b>			
<b>Date</b>			
<b>Time</b>			
<b>Date</b>			
<b>Time</b>			

BC Laboratories, Inc. - 4100 Atlas Ct. - Bakersfield, CA 93308 - 661.327.4911 - Fax: 661.327.1918 - www.bclabs.com

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Chain of Custody Form

Report To:		Project #:		Analysis Requested		Comments:		Result Request **Surcharge	
Client:	Attn:	Project Name:	Sampler(s):	Sample #	Description	Date Sampled	Time Sampled	Sample Matrix	Notes
Street Address:	City, State, Zip:	Phone:	Fax:					Soil	
								Drinking Water	
								Ground Water	
								Waste Water	
								Other	
Work Order #: 17-27871									
-1	HA-42-10.0								
-2	HA-42-12.5								
-3	HA-42-15.0								
-4	HA-42-18.5								
-5	HA-48-20.0								
-6	HA-42-25.0								
-7	HA-47-10.0								
-8	HA-47-15.0								
-9	HA-47-20.0								
-10	HA-47-23.0								
-11	HA-20-10.0								
-12	HA-20-15.0								
-13	HA-20-18.0								
-14	HA-20-20.0								

Billing		EDF Required? Geotracker		Global ID (Needed for EDF)		System # (Needed for EDT)	
Client:	Address:	<input type="checkbox"/> Same as above	<input type="checkbox"/> Yes <input type="checkbox"/> No	1. Relinquished By	2. Relinquished By	1. Received By	2. Received By
City:	State:			Date	Date	Date	Date
Zip:				Time	Time	Time	Time
IO. #:							

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**Laboratories, Inc.**

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Chain of Custody and Cooler Receipt Form for 1727871 Page 3 of 4

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page 1 of 2							
Submission #: 17-27871											
<b>SHIPPING INFORMATION</b> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/> BC Lab Field Service <input checked="" type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		<b>SHIPPING CONTAINER</b> Ice Chest <input checked="" type="checkbox"/> None <input type="checkbox"/> Box <input type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		<b>FREE LIQUID</b> YES <input type="checkbox"/> NO <input type="checkbox"/> W / S							
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: _____											
Custody Seals: Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments: _____ Intact? Yes <input type="checkbox"/> No <input type="checkbox"/> Intact? Yes <input type="checkbox"/> No <input type="checkbox"/>											
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											
COC Received <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Emissivity: 0.95 Container: 550012 Thermometer ID: 205 Temperature: (A) 2.0 °C / (C) 2.0 °C		Date/Time: 10/21/2015 Analyst Init: RWC							
<b>SAMPLE CONTAINERS</b>		<b>SAMPLE NUMBERS</b>									
		1	2	3	4	5	6	7	8	9	10
QT PE UNPRES											
4oz / Box / 16oz PE UNPRES											
2oz Cr <sup>6</sup>											
QT INORGANIC CHEMICAL METALS											
INORGANIC CHEMICAL METALS 4oz / Box / 16oz											
PT CYANIDE											
PT NITROGEN FORMS											
PT TOTAL SULFIDE											
2oz NITRATE / NITRITE											
PT TOTAL ORGANIC CARBON											
PT CHEMICAL OXYGEN DEMAND											
PIA PHENOLICS											
40ml VOA VIAL TRAVEL BLANK											
40ml VOA VIAL											
QT EPA 1664											
PT ODOR											
RADIOLOGICAL											
BACTERIOLOGICAL											
40 ml VOA VIAL- 504											
QT EPA 503/608/6080											
QT EPA 515.1/6150											
QT EPA 525											
QT EPA 525 TRAVEL BLANK											
40ml EPA 547											
40ml EPA 531.1											
8oz EPA 548											
QT EPA 549											
QT EPA 8015M											
QT EPA 8270											
Box / 16oz / 32oz AMBER											
Box / 16oz / 32oz JAR											
SOIL SLEEVE		A	A	A	A	A	A	A	A	A	A
PCB VIAL											
PLASTIC BAG											
TEDLAR BAG											
FERROUS IRON											
ENCORE											
SMART KIT											
SUMMA CANISTER											

Comments:

Sample Numbering Completed By: XIA

1 = Actual / C = Corrected

Date/Time: 10-3-17 0820

Rev 21 05/23/2016

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Chain of Custody and Cooler Receipt Form for 1727871 Page 4 of 4

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page 2 of 2							
Submission #: 17-27871											
<b>SHIPPING INFORMATION</b>			<b>SHIPPING CONTAINER</b>		<b>FREE LIQUID</b>						
Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/>			Ice Chest <input checked="" type="checkbox"/> None <input type="checkbox"/> Box <input type="checkbox"/>		YES <input type="checkbox"/> NO <input type="checkbox"/>						
BC Lab Field Service <input checked="" type="checkbox"/> Other <input type="checkbox"/> (Specify) _____			Other <input type="checkbox"/> (Specify) _____		W / S						
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments:											
Custody Seals: Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments:											
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											
COC Received		Emissivity: 0.95		Thermometer ID: 206							
<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Temperature: (A) 2.0 °C / (C) 2.0 °C		Date/Time: 10/21/17 2045							
				Analyst Init: RWC							
<b>SAMPLE CONTAINERS</b>		<b>SAMPLE NUMBERS</b>									
		11	12	13	14	5	6	7	8	9	10
QT PE UNPRES											
4oz / 8oz / 16oz PE UNPRES											
2oz Cr <sup>4+</sup>											
QT INORGANIC CHEMICAL METALS											
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz											
PT CYANIDE											
PT NITROGEN FORMS											
PT TOTAL SULFIDE											
2oz. NITRATE / NITRITE											
PT TOTAL ORGANIC CARBON											
PT CHEMICAL OXYGEN DEMAND											
PIA PHENOLICS											
40ml VOA VIAL TRAVEL BLANK											
40ml VOA VIAL											
QT EPA 1664											
PT ODOR											
RADIOLOGICAL											
BACTERIOLOGICAL											
40 ml VOA VIAL- 504											
QT EPA 503/608/800											
QT EPA 515.1/8150											
QT EPA 525											
QT EPA 525 TRAVEL BLANK											
40ml EPA 547											
40ml EPA 531.1											
3oz EPA 548											
QT EPA 549											
QT EPA 3015M											
QT EPA 8270											
3oz / 16oz / 32oz AMBER											
3oz / 16oz / 32oz IAR											
SOIL SLEEVE		A	A	A	A						
PCB VIAL											
PLASTIC BAG											
TEDLAR BAG											
FERROUS IRON											
ENCORE											
SMART KIT											
SUMMA CANISTER											

Comments:

Sample Numbering Completed By: KJA

A = Actual / C = Corrected

Date/Time: 10-3-17 0820

Rev 21 05/23/2016

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3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/04/2018 13:31  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
1727871-01	<b>COC Number:</b>	---	<b>Receive Date:</b> 10/02/2017 20:45
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 10/02/2017 09:35
1727871-01	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-42-10.0	<b>Lab Matrix:</b> Solids
1727871-01	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-42
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:
1727871-02	<b>COC Number:</b>	---	<b>Receive Date:</b> 10/02/2017 20:45
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 10/02/2017 09:45
1727871-02	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-42-12.5	<b>Lab Matrix:</b> Solids
1727871-02	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-42
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:
1727871-03	<b>COC Number:</b>	---	<b>Receive Date:</b> 10/02/2017 20:45
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 10/02/2017 09:55
1727871-03	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-42-15.0	<b>Lab Matrix:</b> Solids
1727871-03	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-42
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:

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**Project:** Former Northern Landfill  
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**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
1727871-04	<b>COC Number:</b>	---	<b>Receive Date:</b> 10/02/2017 20:45
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 10/02/2017 10:00
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-42-18.5	<b>Lab Matrix:</b> Solids
	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-42
			Matrix: SO
			Sample QC Type (SACode): CS
1727871-05	<b>COC Number:</b>	---	<b>Receive Date:</b> 10/02/2017 20:45
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 10/02/2017 10:05
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-42-20.0	<b>Lab Matrix:</b> Solids
	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-42
			Matrix: SO
			Sample QC Type (SACode): CS
1727871-06	<b>COC Number:</b>	---	<b>Receive Date:</b> 10/02/2017 20:45
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 10/02/2017 10:12
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-42-25.0	<b>Lab Matrix:</b> Solids
	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-42
			Matrix: SO
			Sample QC Type (SACode): CS

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**Project:** Former Northern Landfill  
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**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
1727871-07	<b>COC Number:</b>	---	<b>Receive Date:</b> 10/02/2017 20:45
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 10/02/2017 12:20
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-47-10.0	<b>Lab Matrix:</b> Solids
	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-47
			Matrix: SO
			Sample QC Type (SACode): CS
1727871-08	<b>COC Number:</b>	---	<b>Receive Date:</b> 10/02/2017 20:45
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 10/02/2017 12:30
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-47-15.0	<b>Lab Matrix:</b> Solids
	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-47
			Matrix: SO
			Sample QC Type (SACode): CS
1727871-09	<b>COC Number:</b>	---	<b>Receive Date:</b> 10/02/2017 20:45
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 10/02/2017 12:40
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-47-20.0	<b>Lab Matrix:</b> Solids
	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-47
			Matrix: SO
			Sample QC Type (SACode): CS

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**Project:** Former Northern Landfill  
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**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
1727871-10	<b>COC Number:</b>	---	<b>Receive Date:</b> 10/02/2017 20:45
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 10/02/2017 12:50
1727871-11	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-47-23.0	<b>Lab Matrix:</b> Solids
1727871-12	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-47
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:
1727871-11	<b>COC Number:</b>	---	<b>Receive Date:</b> 10/02/2017 20:45
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 10/02/2017 14:10
1727871-12	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-20-10.0	<b>Lab Matrix:</b> Solids
1727871-12	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-20
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:
1727871-12	<b>COC Number:</b>	---	<b>Receive Date:</b> 10/02/2017 20:45
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 10/02/2017 14:15
1727871-12	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-20-15.0	<b>Lab Matrix:</b> Solids
1727871-12	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-20
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:

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**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1727871-13	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727871-13	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-20-18.0
1727871-13	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/02/2017 20:45
1727871-13	<b>Sampling Date:</b>	10/02/2017 14:20
	<b>Sample Depth:</b>	---
1727871-13	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727871-13	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727871-13	<b>Location ID (FieldPoint):</b>	HA-20
	<b>Matrix:</b>	SO
1727871-13	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1727871-14	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1727871-14	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-20-20.0
1727871-14	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/02/2017 20:45
1727871-14	<b>Sampling Date:</b>	10/02/2017 14:25
	<b>Sample Depth:</b>	---
1727871-14	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1727871-14	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1727871-14	<b>Location ID (FieldPoint):</b>	HA-20
	<b>Matrix:</b>	SO
1727871-14	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727871-01	<b>Client Sample Name:</b>	Former Northern Landfill, HA-42-10.0, 10/2/2017 9:35:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>12</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND	<b>J,A57</b>	<b>1</b>
Tetracosane (Surrogate)	84.3	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/12/17 15:00	10/14/17 05:34	AS1	GC-2	1.010	B[J]1411

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727871-02	<b>Client Sample Name:</b>	Former Northern Landfill, HA-42-12.5, 10/2/2017 9:45:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	78.8	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/12/17 15:00	10/14/17 05:57	AS1	GC-2	1.007	B[J]1411

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**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727871-03	<b>Client Sample Name:</b>	Former Northern Landfill, HA-42-15.0, 10/2/2017 9:55:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	89.2	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/12/17 15:00	10/14/17 06:20	AS1	GC-2	1.010	B[J]1411

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**Project:** Former Northern Landfill  
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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727871-04	<b>Client Sample Name:</b>	Former Northern Landfill, HA-42-18.5, 10/2/2017 10:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	82.1	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/12/17 15:00	10/14/17 06:43	AS1	GC-2	1	B[J]1411

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727871-05	<b>Client Sample Name:</b>	Former Northern Landfill, HA-42-20.0, 10/2/2017 10:05:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	83.6	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/12/17 15:00	10/14/17 07:06	AS1	GC-2	1.007	B[J]1411

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727871-06	<b>Client Sample Name:</b>	Former Northern Landfill, HA-42-25.0, 10/2/2017 10:12:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	91.9	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/12/17 15:00	10/14/17 22:39	AS1	GC-2	1	B[J]1411

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## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727871-07	<b>Client Sample Name:</b>	Former Northern Landfill, HA-47-10.0, 10/2/2017 12:20:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	76.7	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/12/17 15:00	10/14/17 23:02	AS1	GC-2	1.010	B[J]1411

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## Total Petroleum Hydrocarbons

BCL Sample ID: 1727871-08		Client Sample Name: Former Northern Landfill, HA-47-15.0, 10/2/2017 12:30:00PM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	97.0	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/12/17 15:00	10/14/17 23:24	AS1	GC-2	1.010	B[J]1411

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## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727871-09	<b>Client Sample Name:</b>	Former Northern Landfill, HA-47-20.0, 10/2/2017 12:40:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	89.9	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/12/17 15:00	10/14/17 23:47	AS1	GC-2	1.014	B[J]1411

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/04/2018 13:31  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727871-10	<b>Client Sample Name:</b>	Former Northern Landfill, HA-47-23.0, 10/2/2017 12:50:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	80.8	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/12/17 15:00	10/15/17 01:18	AS1	GC-2	1	B[J]1411

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**Reported:** 01/04/2018 13:31  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727871-11	<b>Client Sample Name:</b>	Former Northern Landfill, HA-20-10.0, 10/2/2017 2:10:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	73.0	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/12/17 15:00	10/15/17 00:10	AS1	GC-2	0.990	B[J]1411

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San Luis Obispo, CA 93401

**Reported:** 01/04/2018 13:31  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727871-12	<b>Client Sample Name:</b>	Former Northern Landfill, HA-20-15.0, 10/2/2017 2:15:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	63.4	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/12/17 15:00	10/15/17 00:33	AS1	GC-2	1.014	B[J]1411

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**Reported:** 01/04/2018 13:31  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727871-13	<b>Client Sample Name:</b>	Former Northern Landfill, HA-20-18.0, 10/2/2017 2:20:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	68.1	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/12/17 15:00	10/15/17 00:56	AS1	GC-2	1.007	B[J]1411

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San Luis Obispo, CA 93401

**Reported:** 01/04/2018 13:31  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1727871-14	<b>Client Sample Name:</b>	Former Northern Landfill, HA-20-20.0, 10/2/2017 2:25:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	70.8	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/12/17 15:00	10/15/17 01:41	AS1	GC-2	0.993	B[J]1411

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San Luis Obispo, CA 93401

**Reported:** 01/04/2018 13:31  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J1411</b>						
TPH - Gasoline	B[J1411-BLK1	ND	mg/kg	20	5.0	
TPH - Diesel (FFP)	B[J1411-BLK1	ND	mg/kg	10	1.2	
TPH - Motor Oil	B[J1411-BLK1	ND	mg/kg	20	6.5	
<b>Tetracosane (Surrogate)</b>	<b>B[J1411-BLK1</b>	<b>93.1</b>	<b>%</b>	<b>20 - 145 (LCL - UCL)</b>		



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San Luis Obispo, CA 93401

**Reported:** 01/04/2018 13:31  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: B[J1411										
TPH - Diesel (FFP)	B[J1411-BS1	LCS	80.774	84.746	mg/kg	95.3		64 - 124		
Tetracosane (Surrogate)	B[J1411-BS1	LCS	3.5188	3.3912	mg/kg	104		20 - 145		





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Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/04/2018 13:31  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J1411		Used client sample: Y - Description: HA-47-20.0, 10/02/2017 12:40									
TPH - Diesel (FFP)	MS	1727871-09	ND	76.307	83.612	mg/kg		91.3		52 - 131	
	MSD	1727871-09	ND	75.675	83.056	mg/kg	0.8	91.1	30	52 - 131	
Tetracosane (Surrogate)	MS	1727871-09	ND	3.2895	3.3458	mg/kg		98.3		20 - 145	
	MSD	1727871-09	ND	3.1867	3.3236	mg/kg	3.2	95.9		20 - 145	

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**EMSL Analytical, Inc.**

464 McCormick Street San Leandro, CA 94577  
Tel/Fax: (510) 895-3675 / (510) 895-3680  
<http://www.EMSL.com> / [sanleandrolab@emsl.com](mailto:sanleandrolab@emsl.com)

EMSL Order: 091719468

Customer ID: BCLA50

Customer PO: 1727871

Project ID:

Attention: Molly Meyers  
BC Laboratories, Inc.  
4100 Atlas Court  
Bakersfield, CA 93308

Phone: (661) 327-4911

Fax: (661) 327-1918

Received Date: 10/06/2017 10:45 AM

Analysis Date: 10/13/2017

Collected Date: 10/02/2017

Project: 1727871

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020  
Method(s) using Polarized Light Microscopy**

Sample	Description	Appearance	Non-Asbestos		Asbestos % Type
			% Fibrous	% Non-Fibrous	
1727871-01		Brown Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
091719468-0001 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1727871-07		Brown Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
091719468-0002 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1727871-11		Brown Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
091719468-0003 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					

Analyst(s)

Cecilia Yu (3)



Matthew Batongbacal  
or Other Approved Signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The limit of detection as stated in the method is 1%. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The test results contained within this report meet the requirements of NELAP unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from: 10/13/2017 12:35:28

ASB\_PLM\_0008\_0001 - 1.78 Printed: 10/13/2017 12:37 PM

Page 1 of 1

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3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/04/2018 13:31  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0006  
**Project Manager:** Kirk Henning

### Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit
A57	Chromatogram not typical of motor oil.



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



Date of Report: 01/19/2018

Kirk Henning

Stantec - SLO

3437 Empresa Drive, Suite A

Suite A

San Luis Obispo, CA 93401

Client Project: 185850429.300.0007

BCL Project: Former Northern Landfill

BCL Work Order: 1728533

Invoice ID: B282739, B289269

Enclosed are the results of analyses for samples received by the laboratory on 10/4/2017. If you have any questions concerning this report, please feel free to contact me.

Revised Report: This report supercedes Report ID 1000691055

Sincerely,

Contact Person: Molly Meyers  
Client Service Rep

Stuart Buttram  
Technical Director

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

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#### Total Petroleum Hydrocarbons

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# Chain of Custody Form

Project #:		185852421300.0007	
Project Name:		Former Northern	
Street Address:		3437 Empress Drive Suite A	
City, State, Zip:		San Luis Obispo, CA 93401	
Phone:		(805) 251-2854 Fax:	
Email:		Kick.Henning@stater.com	
Work Order #:		17-28533	
Sample #	Description	Date Sampled	Time Sampled
1	HA-34-10.0	10/23/17	08:00
2	HA-34-15.0		08:05
3	HA-34-18.0		08:10
4	HA-34-20.0		08:15
5	HA-34-25.0		08:20
6	HA-48-10.0		08:55
7	HA-48-15.0		09:00
8	HA-48-18.0		09:25
9	HA-48-20.0		09:35
10	HA-37-9.0		10:45
11	HA-32(6)-10.0		11:00
12	HA-32(6)-15.0		11:10
13	HA-32(6)-19.0		11:25
14	HA-32(6)-20.0		11:30
Analysis Requested			
Comments:			
Result Request "Surcharge"			
<input type="checkbox"/> STD <input type="checkbox"/> 5 Day** <input type="checkbox"/> 2 Day** <input type="checkbox"/> 1 Day**			
Sample Matrix			
<input type="checkbox"/> Soil <input type="checkbox"/> Sludge <input type="checkbox"/> Drinking Water <input type="checkbox"/> Ground Water <input type="checkbox"/> Waste Water <input type="checkbox"/> Other			
Notes			
CHK BY: [Signature] DATE: 10/24/17			
SUB OUT: [Signature]			
Global ID (Needed for EDT)		System # (Needed for EDT)	
1. Relinquished By [Signature]		1. Relinquished By [Signature]	
2. Relinquished By [Signature]		2. Relinquished By [Signature]	
3. Relinquished By [Signature]		3. Relinquished By [Signature]	
EDF Required? Geotracker		EDF Required? Geotracker	
<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Send Copy to State of CA? (EDT)		Send Copy to State of CA? (EDT)	
<input type="checkbox"/> Yes <input type="checkbox"/> No		<input type="checkbox"/> Yes <input type="checkbox"/> No	
Client:		Client:	
Address:		Address:	
City:		City:	
State:		State:	
Zip:		Zip:	
Attn:		Attn:	
P.O. #:		P.O. #:	

BC Laboratories, Inc. - 4100 Atlas Ct. - Bakersfield, CA 93308 - 661.327.4911 - Fax: 661.327.1918 - www.bclabs.com

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# Chain of Custody Form

Page 2 of 2

Analysis Requested		Comments:		Sample Matrix		Result Request **Surcharge				
Please refer to the back of this page for completion instructions and method legend.				Waste Water	Ground Water	Drinking Water	Sludge	Other	Notes	
15	HA-36-8.0	10/03/17	13:35	X						
16	HA-36-10.0		13:40	X						
17	HA-36-15.0		13:45	X						
18	HA-36-20.0		13:50	X						
19	HA-46-10.0		14:19	X						
20	HA-46-8.15.0		14:30	X						
21	HA-46-20.0		14:40	X						

EDF Required?		Global ID		System #	
GeoTracker	Send Copy to State of CA? (EDT)	1. Requisitioned By	2. Requisitioned By	1. Received By	2. Received By
<input type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<i>Jim Raney</i>	<i>Jim Raney</i>	<i>Jim Raney</i>	<i>Jim Raney</i>
		Date: 10-4-17	Date: 10-4-17	Date: 10-4-17	Date: 10-4-17
		Time: 15:00	Time: 15:00	Time: 15:00	Time: 15:00

Same as above		Global ID		System #	
GeoTracker	Send Copy to State of CA? (EDT)	1. Requisitioned By	2. Requisitioned By	1. Received By	2. Received By
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	<input type="checkbox"/> Yes <input type="checkbox"/> No	<i>Jim Raney</i>	<i>Jim Raney</i>	<i>Jim Raney</i>	<i>Jim Raney</i>
		Date: 10-4-17	Date: 10-4-17	Date: 10-4-17	Date: 10-4-17
		Time: 15:00	Time: 15:00	Time: 15:00	Time: 15:00

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1728533 Page 3 of 5

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page 1 of 3							
Submission #: 17-28533											
<b>SHIPPING INFORMATION</b>		<b>SHIPPING CONTAINER</b>		<b>FREE LIQUID</b>							
Fed Ex <input type="checkbox"/> UPS <input checked="" type="checkbox"/> Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/>		Ice Chest <input checked="" type="checkbox"/> None <input type="checkbox"/> Box <input type="checkbox"/>		YES <input type="checkbox"/> NO <input checked="" type="checkbox"/>							
BC Lab Field Service <input checked="" type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		Other <input type="checkbox"/> (Specify) _____		W / S							
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: _____											
Custody Seals: Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments: _____											
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Description(s) match COC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>							
COC Received <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Emissivity: 0.95 Containers: Soil Sleeve Thermometer ID: 706		Date/Time: 10/4/17 2:00							
		Temperature: (A) 21 °C / (C) 21 °C		Analyst Init: PNE							
<b>SAMPLE CONTAINERS</b>		<b>SAMPLE NUMBERS</b>									
		1 2 3 4 5 6 7 8 9 10									
QT PE UNPRES											
4oz / 8oz / 16oz PE UNPRES											
2oz Cr <sup>6+</sup>											
QT INORGANIC CHEMICAL METALS											
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz											
PT CYANIDE											
PT NITROGEN FORMS											
PT TOTAL SULFIDE											
2oz. NITRATE / NITRITE											
PT TOTAL ORGANIC CARBON											
PT CHEMICAL OXYGEN DEMAND											
PTA PHENOLICS											
40ml VOA VIAL TRAVEL BLANK											
40ml VOA VIAL											
QT EPA 1664											
PT ODOR											
RADIOLOGICAL											
BACTERIOLOGICAL											
40 ml VOA VIAL- 504											
QT EPA 505/608/8030											
QT EPA 515.1/8150											
QT EPA 525											
QT EPA 525 TRAVEL BLANK											
40ml EPA 547											
40ml EPA 531.1											
8oz EPA 548											
QT EPA 549											
QT EPA 801SM											
QT EPA 8270											
8oz / 16oz / 32oz AMBER											
8oz / 16oz / 32oz JAR											
SOIL SLEEVE X02		A	A	A	A	A	A	A	A	A	
PCB VIAL											
PLASTIC BAG											
TEDLAR BAG											
FERROUS IRON											
INCORE											
SMART KIT											
UMMA CANISTER											
Comments: _____											
Sample Numbering Completed By: <u>WAC</u> Date/Time: <u>10/4</u> <u>1753</u> Rev 21 05/23/2016											
= Actual / C = Corrected											
[S:\WPDec\WordPerfect\LAB_DOC\FORMS\SAMPLECev 20]											

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1728533 Page 4 of 5

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page 2 of 3							
Submission #: 17-26533											
<b>SHIPPING INFORMATION</b> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/> BC Lab Field Service <input checked="" type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		<b>SHIPPING CONTAINER</b> Ice Chest <input checked="" type="checkbox"/> None <input type="checkbox"/> Box <input type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		<b>FREE LIQUID</b> YES <input type="checkbox"/> NO <input checked="" type="checkbox"/> W (S)							
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: _____											
Custody Seals: Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments: _____ Intact? Yes <input type="checkbox"/> No <input type="checkbox"/> Intact? Yes <input type="checkbox"/> No <input type="checkbox"/>											
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match CDC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											
COC Received <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Emissivity: 0.97 Containers: 500 gals Thermometer ID: 206		Date/Time: 10/17/17 2100							
Temperature: (A) 28 °C (C) 28 °C				Analyst Init: PNE							
<b>SAMPLE CONTAINERS</b>		<b>SAMPLE NUMBERS</b>									
		10	11	12	13	14	15	16	17	18	19
QTPE UNPRES											
4oz / 8oz / 16oz PE UNPRES											
2oz Cr <sup>6+</sup>											
QT INORGANIC CHEMICAL METALS											
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz											
PT CYANIDE											
PT NITROGEN FORMS											
PT TOTAL SULFIDE											
2oz. NITRATE / NITRITE											
PT TOTAL ORGANIC CARBON											
PT CHEMICAL OXYGEN DEMAND											
PIA PHENOLICS											
40ml VOA VIAL TRAVEL BLANK											
40ml VOA VIAL											
QT EPA 1664											
PT ODOR											
RADIOLOGICAL											
BACTERIOLOGICAL											
40 ml VOA VIAL- 504											
QT EPA 508/608/808											
QT EPA 515.1/8150											
QT EPA 525											
QT EPA 525 TRAVEL BLANK											
40ml EPA 547											
40ml EPA 531.1											
8oz EPA 548											
QT EPA 549											
QT EPA 8015M											
QT EPA 8270											
8oz / 16oz / 32oz AMBER											
8oz / 16oz / 32oz IAR											
SOIL SLEEVE X02		A	A	A	A	A	A	A	A	A	
PCB VIAL											
PLASTIC BAG											
TEDLAR BAG											
FERROUS IRON											
ENCORE											
SMART KIT											
SUMMA CANISTER											
Comments: _____											
Sample Numbering Completed By: PNE Date/Time: 10/17/17 1753											
A = Actual / C = Corrected											
Rev 21 05/23/2016 [SAWFOC\WordPerfect\LA6_DOCUMENTS\BAMRECIN 20]											

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BC LABORATORIES, INC. COOLER RECEIPT FORM Page 3 of 3

Job #: 1728533

SHIPPING INFORMATION

☐ UPS ☐ Ontrac ☐ Hand Delivery ☐ Field Service ☒ Other (Specify) \_\_\_\_\_

SHIPPING CONTAINER

Ice Chest ☒ None ☐ Box ☐ Other (Specify) \_\_\_\_\_

FREE LIQUID YES ☐ NO ☒ WTS

Permit: Ice ☒ Blue Ice ☐ None ☐ Other ☐ Comments: \_\_\_\_\_

Body Seals: Ice Chest ☒ Containers ☐ None ☐ Comments: \_\_\_\_\_

Intact: Yes ☒ No ☐ Intact: Yes ☐ No ☐

samples received? Yes ☒ No ☐ All samples containers intact? Yes ☒ No ☐ Description(s) match COC? Yes ☐ No ☐

COC Received ☒ YES ☐ NO

Emissivity: 0.95 Container: 501889A Thermometer ID: 706 Date/Time: 10/4/17 2100

Temperature: (A) 8.0 °C / (C) 30 °C Analyst Init: RUC

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cy*										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PIA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
2 ml VOA VIAL- 504										
17 EPA 502/602/8080										
17 EPA 515.1/8150										
17 EPA 525										
17 EPA 525 TRAVEL BLANK										
17 ml EPA 547										
17 ml EPA 531.1										
17 EPA 548										
17 EPA 549										
17 EPA 8015M										
17 EPA 8270										
17 16oz / 32oz AMBER										
17 16oz / 32oz JAR										
17 L SLEEVE										
17 VIAL										
17 STIC BAG										
17 LAR BAG										
17 ROUS IRON										
17 ORE										
17 RT KIT										
17 MA CANISTER										

Comments: \_\_\_\_\_

Numbering Completed By: \_\_\_\_\_ Date/Time: 10/4 1753

Actual / C = Corrected

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:25  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0007  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1728533-01	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728533-01	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-34-10.0
1728533-01	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/04/2017 21:00
1728533-01	<b>Sampling Date:</b>	10/03/2017 08:00
	<b>Sample Depth:</b>	---
1728533-01	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728533-01	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728533-01	<b>Location ID (FieldPoint):</b>	HA-34
	<b>Matrix:</b>	SO
1728533-01	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1728533-02	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728533-02	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-34-15.0
1728533-02	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/04/2017 21:00
1728533-02	<b>Sampling Date:</b>	10/03/2017 08:05
	<b>Sample Depth:</b>	---
1728533-02	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728533-02	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728533-02	<b>Location ID (FieldPoint):</b>	HA-34
	<b>Matrix:</b>	SO
1728533-02	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1728533-03	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728533-03	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-34-18.0
1728533-03	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/04/2017 21:00
1728533-03	<b>Sampling Date:</b>	10/03/2017 08:10
	<b>Sample Depth:</b>	---
1728533-03	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728533-03	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728533-03	<b>Location ID (FieldPoint):</b>	HA-34
	<b>Matrix:</b>	SO
1728533-03	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:25  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0007  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1728533-04	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728533-04	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-34-20.0
1728533-04	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/04/2017 21:00
1728533-04	<b>Sampling Date:</b>	10/03/2017 08:15
	<b>Sample Depth:</b>	---
1728533-04	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728533-04	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728533-04	<b>Location ID (FieldPoint):</b>	HA-34
	<b>Matrix:</b>	SO
1728533-04	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1728533-05	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728533-05	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-34-25.0
1728533-05	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/04/2017 21:00
1728533-05	<b>Sampling Date:</b>	10/03/2017 08:20
	<b>Sample Depth:</b>	---
1728533-05	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728533-05	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728533-05	<b>Location ID (FieldPoint):</b>	HA-34
	<b>Matrix:</b>	SO
1728533-05	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1728533-06	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728533-06	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-48-10.0
1728533-06	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/04/2017 21:00
1728533-06	<b>Sampling Date:</b>	10/03/2017 08:55
	<b>Sample Depth:</b>	---
1728533-06	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728533-06	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728533-06	<b>Location ID (FieldPoint):</b>	HA-48
	<b>Matrix:</b>	SO
1728533-06	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:25  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0007  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
1728533-07	<b>COC Number:</b>	---	<b>Receive Date:</b> 10/04/2017 21:00
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 10/03/2017 09:00
1728533-08	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-48-15.0	<b>Lab Matrix:</b> Solids
1728533-09	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-48
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:
1728533-07	<b>COC Number:</b>	---	<b>Receive Date:</b> 10/04/2017 21:00
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 10/03/2017 09:25
1728533-08	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-48-18.0	<b>Lab Matrix:</b> Solids
1728533-09	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-48
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:
1728533-07	<b>COC Number:</b>	---	<b>Receive Date:</b> 10/04/2017 21:00
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 10/03/2017 09:35
1728533-08	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-48-20.0	<b>Lab Matrix:</b> Solids
1728533-09	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-48
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:

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**Reported:** 01/19/2018 12:25  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0007  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1728533-10	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728533-10	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-37-9.0
1728533-10	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/04/2017 21:00
1728533-10	<b>Sampling Date:</b>	10/03/2017 10:45
	<b>Sample Depth:</b>	---
1728533-10	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728533-10	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728533-10	<b>Location ID (FieldPoint):</b>	HA-37
	<b>Matrix:</b>	SO
1728533-10	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1728533-11	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728533-11	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-32(b)-10.0
1728533-11	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/04/2017 21:00
1728533-11	<b>Sampling Date:</b>	10/03/2017 11:00
	<b>Sample Depth:</b>	---
1728533-11	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728533-11	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728533-11	<b>Location ID (FieldPoint):</b>	HA-32
	<b>Matrix:</b>	SO
1728533-11	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1728533-12	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728533-12	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-32(b)-15.0
1728533-12	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/04/2017 21:00
1728533-12	<b>Sampling Date:</b>	10/03/2017 11:10
	<b>Sample Depth:</b>	---
1728533-12	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728533-12	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728533-12	<b>Location ID (FieldPoint):</b>	HA-32
	<b>Matrix:</b>	SO
1728533-12	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:25  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0007  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1728533-13	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728533-13	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-32(b)-19.0
1728533-13	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/04/2017 21:00
1728533-13	<b>Sampling Date:</b>	10/03/2017 11:25
	<b>Sample Depth:</b>	---
1728533-13	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728533-13	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728533-13	<b>Location ID (FieldPoint):</b>	HA-32
	<b>Matrix:</b>	SO
1728533-13	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1728533-14	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728533-14	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-32(b)-20.0
1728533-14	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/04/2017 21:00
1728533-14	<b>Sampling Date:</b>	10/03/2017 11:30
	<b>Sample Depth:</b>	---
1728533-14	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728533-14	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728533-14	<b>Location ID (FieldPoint):</b>	HA-32
	<b>Matrix:</b>	SO
1728533-14	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1728533-15	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728533-15	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-36-8.0
1728533-15	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/04/2017 21:00
1728533-15	<b>Sampling Date:</b>	10/03/2017 13:35
	<b>Sample Depth:</b>	---
1728533-15	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728533-15	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728533-15	<b>Location ID (FieldPoint):</b>	HA-36
	<b>Matrix:</b>	SO
1728533-15	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:25  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0007  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
1728533-16	<b>COC Number:</b>	---	<b>Receive Date:</b> 10/04/2017 21:00
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 10/03/2017 13:40
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-36-10.0	<b>Lab Matrix:</b> Solids
	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-36
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:
1728533-17	<b>COC Number:</b>	---	<b>Receive Date:</b> 10/04/2017 21:00
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 10/03/2017 13:45
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-36-15.0	<b>Lab Matrix:</b> Solids
	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-36
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:
1728533-18	<b>COC Number:</b>	---	<b>Receive Date:</b> 10/04/2017 21:00
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 10/03/2017 13:50
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-36-20.0	<b>Lab Matrix:</b> Solids
	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-36
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:25  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0007  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
1728533-19	<b>COC Number:</b>	---	<b>Receive Date:</b> 10/04/2017 21:00
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 10/03/2017 14:19
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-46-10.0	<b>Lab Matrix:</b> Solids
	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-46
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:
1728533-20	<b>COC Number:</b>	---	<b>Receive Date:</b> 10/04/2017 21:00
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 10/03/2017 14:30
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-46-15.0	<b>Lab Matrix:</b> Solids
	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-46
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:
1728533-21	<b>COC Number:</b>	---	<b>Receive Date:</b> 10/04/2017 21:00
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 10/03/2017 14:40
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-46-20.0	<b>Lab Matrix:</b> Solids
	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-46
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:

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**EMSL Analytical, Inc.**

464 McCormick Street San Leandro, CA 94577  
Tel/Fax: (510) 895-3675 / (510) 895-3680  
<http://www.EMSL.com/sanleandrolab@emsl.com>

EMSL Order: 091800321  
Customer ID: BCLA50  
Customer PO: 1728533  
Project ID:

**Attention:** Molly Meyers  
BC Laboratories, Inc.  
4100 Atlas Court  
Bakersfield, CA 93308

**Phone:** (661) 327-4911  
**Fax:** (661) 327-1918  
**Received Date:** 01/06/2018 9:30 AM  
**Analysis Date:** 01/09/2018  
**Collected Date:**

**Project:** 1728533

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020  
Method(s) using Polarized Light Microscopy**

Sample	Description	Appearance	% Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
1728533-12		Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
091800321-0001	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1728533-16		Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
091800321-0002	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1728533-20		Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
091800321-0003	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				

Analyst(s)  
Adam C. Fink (3)

  
Matthew Batongbacal  
or Other Approved Signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The limit of detection as stated in the method is 1%. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The test results contained within this report meet the requirements of NELAC unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from: 01/10/2018 02:58:38

ASB\_PLM\_0008\_0001 - 1.78 Printed: 1/9/2018 11:58 PM

Page 1 of 1

Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:25  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0007  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728533-01	<b>Client Sample Name:</b>	Former Northern Landfill, HA-34-10.0, 10/3/2017 8:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	71.6	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:00	10/15/17 16:35	AS1	GC-2	1.007	BJ1714

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**Reported:** 01/19/2018 12:25  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0007  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728533-02	<b>Client Sample Name:</b>	Former Northern Landfill, HA-34-15.0, 10/3/2017 8:05:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	71.1	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:00	10/15/17 16:57	AS1	GC-2	1.007	BJ1714

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728533-03	<b>Client Sample Name:</b>	Former Northern Landfill, HA-34-18.0, 10/3/2017 8:10:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	64.9	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:00	10/15/17 17:20	AS1	GC-2	1.010	BJ1714

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**Reported:** 01/19/2018 12:25  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0007  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728533-04	<b>Client Sample Name:</b>	Former Northern Landfill, HA-34-20.0, 10/3/2017 8:15:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	83.8	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:00	10/15/17 17:43	AS1	GC-2	0.993	BJ1714

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**Reported:** 01/19/2018 12:25  
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**Project Number:** 185850429.300.0007  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728533-05	<b>Client Sample Name:</b>	Former Northern Landfill, HA-34-25.0, 10/3/2017 8:20:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	72.8	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:00	10/15/17 18:06	AS1	GC-2	0.997	BJ1714

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**Project Number:** 185850429.300.0007  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728533-06	<b>Client Sample Name:</b>	Former Northern Landfill, HA-48-10.0, 10/3/2017 8:55:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>15</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND	<b>J,A57</b>	<b>1</b>
Tetracosane (Surrogate)	70.5	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:00	10/15/17 18:28	AS1	GC-2	0.990	B[J]1714

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728533-07	<b>Client Sample Name:</b>	Former Northern Landfill, HA-48-15.0, 10/3/2017 9:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	74.4	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:00	10/15/17 19:36	AS1	GC-2	1	BJ1714

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728533-08	<b>Client Sample Name:</b>	Former Northern Landfill, HA-48-18.0, 10/3/2017 9:25:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	53.3	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:00	10/15/17 19:59	AS1	GC-2	1.010	BJ1714

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728533-09	<b>Client Sample Name:</b>	Former Northern Landfill, HA-48-20.0, 10/3/2017 9:35:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	56.3	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:00	10/15/17 20:22	AS1	GC-2	1.014	BJ1714

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728533-10	<b>Client Sample Name:</b>	Former Northern Landfill, HA-37-9.0, 10/3/2017 10:45:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>22</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	37.8	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:00	10/15/17 23:00	AS1	GC-2	1.010	BJ1714

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728533-11	<b>Client Sample Name:</b>	Former Northern Landfill, HA-32(b)-10.0, 10/3/2017 11:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	62.5	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:00	10/15/17 20:44	AS1	GC-2	1.014	BJ1714

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728533-12	<b>Client Sample Name:</b>	Former Northern Landfill, HA-32(b)-15.0, 10/3/2017 11:10:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>23</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	60.8	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:00	10/15/17 21:29	AS1	GC-2	1.003	BJ1714

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728533-13	<b>Client Sample Name:</b>	Former Northern Landfill, HA-32(b)-19.0, 10/3/2017 11:25:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	59.7	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:00	10/15/17 21:07	AS1	GC-2	1.010	BJ1714

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728533-14	<b>Client Sample Name:</b>	Former Northern Landfill, HA-32(b)-20.0, 10/3/2017 11:30:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	65.8	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:00	10/15/17 21:52	AS1	GC-2	0.984	BJ1714

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:25  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0007  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728533-15	<b>Client Sample Name:</b>	Former Northern Landfill, HA-36-8.0, 10/3/2017 1:35:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>25</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	72.8	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:00	10/15/17 22:37	AS1	GC-2	1.014	BJ1714

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:25  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0007  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728533-16	<b>Client Sample Name:</b>	Former Northern Landfill, HA-36-10.0, 10/3/2017 1:40:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	87.5	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:00	10/15/17 22:15	AS1	GC-2	0.987	BJ1714

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San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:25  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0007  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728533-17	<b>Client Sample Name:</b>	Former Northern Landfill, HA-36-15.0, 10/3/2017 1:45:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	42.0	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:00	10/16/17 00:53	AS1	GC-2	0.997	BJ1714

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San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:25  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0007  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728533-18	<b>Client Sample Name:</b>	Former Northern Landfill, HA-36-20.0, 10/3/2017 1:50:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	96.5	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:00	10/16/17 01:16	AS1	GC-2	0.997	BJ1714

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3437 Empresa Drive, Suite A  
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San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:25  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0007  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728533-19	<b>Client Sample Name:</b>	Former Northern Landfill, HA-46-10.0, 10/3/2017 2:19:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>6.9</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND	<b>J,A57</b>	<b>1</b>
Tetracosane (Surrogate)	94.8	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:00	10/16/17 01:39	AS1	GC-2	1.010	BJ1714

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Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:25  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0007  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728533-20	<b>Client Sample Name:</b>	Former Northern Landfill, HA-46-15.0, 10/3/2017 2:30:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	69.4	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:00	10/16/17 02:02	AS1	GC-2	1	BJ1714

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3437 Empresa Drive, Suite A  
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**Reported:** 01/19/2018 12:25  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0007  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728533-21	<b>Client Sample Name:</b>	Former Northern Landfill, HA-46-20.0, 10/3/2017 2:40:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	76.2	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/12/17 15:00	10/14/17 05:12	AS1	GC-2	1.007	B[J]1411

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**Reported:** 01/19/2018 12:25  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0007  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B[J1411]						
TPH - Gasoline	B[J1411-BLK1	ND	mg/kg	20	5.0	
TPH - Diesel (FFP)	B[J1411-BLK1	ND	mg/kg	10	1.2	
TPH - Motor Oil	B[J1411-BLK1	ND	mg/kg	20	6.5	
Tetracosane (Surrogate)	B[J1411-BLK1	93.1	%	20 - 145 (LCL - UCL)		
QC Batch ID: B[J1714]						
TPH - Gasoline	B[J1714-BLK1	ND	mg/kg	20	5.0	
TPH - Diesel (FFP)	B[J1714-BLK1	ND	mg/kg	10	1.2	
TPH - Motor Oil	B[J1714-BLK1	ND	mg/kg	20	6.5	
Tetracosane (Surrogate)	B[J1714-BLK1	65.2	%	20 - 145 (LCL - UCL)		

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**Reported:** 01/19/2018 12:25  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0007  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: B[J1411										
TPH - Diesel (FFP)	B[J1411-BS1	LCS	80.774	84.746	mg/kg	95.3		64 - 124		
Tetracosane (Surrogate)	B[J1411-BS1	LCS	3.5188	3.3912	mg/kg	104		20 - 145		
QC Batch ID: B[J1714										
TPH - Diesel (FFP)	B[J1714-BS1	LCS	72.708	83.893	mg/kg	86.7		64 - 124		
Tetracosane (Surrogate)	B[J1714-BS1	LCS	3.0878	3.3570	mg/kg	92.0		20 - 145		

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3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:25  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0007  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Precision & Accuracy

										Control Limits	
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J1411]		Used client sample: Y - Description: HA-47-20.0, 10/02/2017 12:40									
TPH - Diesel (FFP)	MS	1727871-09	ND	76.307	83.612	mg/kg		91.3		52 - 131	
	MSD	1727871-09	ND	75.675	83.056	mg/kg	0.8	91.1	30	52 - 131	
Tetracosane (Surrogate)	MS	1727871-09	ND	3.2895	3.3458	mg/kg		98.3		20 - 145	
	MSD	1727871-09	ND	3.1867	3.3236	mg/kg	3.2	95.9		20 - 145	
QC Batch ID: B[J1714]		Used client sample: Y - Description: HA-48-18.0, 10/03/2017 09:25									
TPH - Diesel (FFP)	MS	1728533-08	ND	83.019	83.056	mg/kg		100		52 - 131	
	MSD	1728533-08	ND	57.538	83.333	mg/kg	36.3	69.0	30	52 - 131	
Tetracosane (Surrogate)	MS	1728533-08	ND	3.1106	3.3236	mg/kg		93.6		20 - 145	
	MSD	1728533-08	ND	2.2677	3.3347	mg/kg	31.3	68.0		20 - 145	

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**EMSL Analytical, Inc.**

464 McCormick Street San Leandro, CA 94577  
Tel/Fax: (510) 895-3675 / (510) 895-3680  
<http://www.EMSL.com> / [sanleandrolab@emsl.com](mailto:sanleandrolab@emsl.com)

EMSL Order: 091719925  
Customer ID: BCLA50  
Customer PO: 1728533  
Project ID:

Attention: Molly Meyers  
BC Laboratories, Inc.  
4100 Atlas Court  
Bakersfield, CA 93308

Phone: (661) 327-4911  
Fax: (661) 327-1918  
Received Date: 10/12/2017 10:00 AM  
Analysis Date: 10/18/2017  
Collected Date: 10/03/2017

Project: 1728533

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020  
Method(s) using Polarized Light Microscopy**

Sample	Description	Appearance	% Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
1728533-01		Tan Non-Fibrous Homogeneous		35% Quartz 65% Non-fibrous (Other)	None Detected
091719925-0001 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1728533-06		Tan Non-Fibrous Homogeneous	2% Cellulose	35% Quartz 63% Non-fibrous (Other)	None Detected
091719925-0002 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1728533-10		Brown Non-Fibrous Homogeneous	2% Cellulose	35% Quartz 63% Non-fibrous (Other)	None Detected
091719925-0003 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1728533-11		Gray Non-Fibrous Homogeneous		35% Quartz 65% Non-fibrous (Other)	None Detected
091719925-0004 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1728533-15		Brown Non-Fibrous Homogeneous	3% Cellulose	35% Quartz 62% Non-fibrous (Other)	None Detected
091719925-0005 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1728533-19		Brown Non-Fibrous Homogeneous		35% Quartz 65% Non-fibrous (Other)	None Detected
091719925-0006 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					

Analyst(s)

Jared Martin (6)



Matthew Batongbacal  
or Other Approved Signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The limit of detection as stated in the method is 1%. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The test results contained within this report meet the requirements of NELAC unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from: 10/18/2017 12:40:21

ASB\_PLM\_0008\_0001 - 1.78 Printed: 10/18/2017 12:40 PM

Page 1 of 1



Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/19/2018 12:25  
**Project:** Former Northern Landfill  
**Project Number:** 185850429.300.0007  
**Project Manager:** Kirk Henning

### Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit
A57	Chromatogram not typical of motor oil.



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



Date of Report: 04/02/2018

Kirk Henning

Stantec - SLO

3437 Empresa Drive, Suite A

Suite A

San Luis Obispo, CA 93401

Client Project: [none]

BCL Project: Former Northern Landfill

BCL Work Order: 1728588

Invoice ID: B285059, B289270, B297104

Enclosed are the results of analyses for samples received by the laboratory on 10/4/2017. If you have any questions concerning this report, please feel free to contact me.

Revised Report: This report supercedes Report ID 1000726013

Sincerely,

Contact Person: Molly Meyers  
Client Service Rep

Stuart Buttram  
Technical Director

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

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## Chain of Custody Form

<b>Analysis Requested</b>						Page <u>1</u> of <u>2</u>	
Project #: <b>185850429-210-0007</b> Client: <b>Kick Henning</b> Street Address: <b>3431 Empress Drive, Suite A</b> City, State, Zip: <b>San Luis Obispo, CA 93401</b> Phone: <b>(805) 230-2854</b> Fax: Email: <b>kirk.hemming@stater.com</b> York Order #: <b>17-28588</b>						Comments:  Please refer to the back of this page for completion instructions and method legend.	
Project Name: <b>Pomer Northern Landfill</b>							
Sampler(s): <b>Jim Raney</b>							
#	Description	Date Sampled	Time Sampled	Sample Matrix		Result Request **Surcharge	Notes
1	HA-37(a)-10.0	10/04/17	08:25	Soil		<input type="checkbox"/> STD <input type="checkbox"/> 5 Day** <input type="checkbox"/> 2 Day** <input type="checkbox"/> 1 Day**	
2	HA-37(a)-15.0		08:35	Sludge			
3	HA-37(a)-20.0		08:45	Drinking Water			
4	HA-43-9.0		09:23	Ground Water			
5	HA-43-10.0		09:25	Waste Water			
6	HA-43-15.0		09:35	Other			
7	HA-43-20.0		09:45				
8	HA-37(a)-1.0		07:50				
9	HA-37(a)-3.0		08:00				
10	HA-37(a)-5.0		08:10				
11	HA-44-10.0		11:15				
12	HA-44-15.0		11:25				
13	HA-26-10.0		11:40				
14	HA-26-13.0		11:47				
Billing: <input checked="" type="checkbox"/> Same as above						System # _____ (Needed for EDT)	
EDF Required? Geotracker <input type="checkbox"/> Yes <input type="checkbox"/> No						1. Received By _____ Date _____ Time _____	
Send Copy to State of CA? (EDT) <input type="checkbox"/> Yes <input type="checkbox"/> No						2. Received By _____ Date _____ Time _____	
City _____ State _____ Zip _____						3. Received By _____ Date _____ Time _____	
Client: _____							
Address: _____							
Phone: _____							
Fax: _____							
Email: _____							
York Order #: _____							

BC Laboratories, Inc. - 4100 Atlas Ct. - Bakersfield, CA 93308 - 661.327.4911 - Fax: 661.327.1918 - [www.bclabs.com](http://www.bclabs.com)

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# Chain of Custody Form

Page 2 of 2

Client: Stantec Project #: 185850429.300.0007  
Attn: Mark Hennings Project Name: Former Northern  
Street Address: 3437 Empress Ave. Suite A Landfill  
City, State, Zip: San Luis Obispo, CA 93401  
Phone: (805) 250-2841 Fax: 17-28688  
Email: Mark.Hennings@stantec.com  
Sample(s): Jim Roney  
Job Order #: 17-28688

Analysis Requested  
Please refer to the back of this page for completion instructions and method legend.

Comments:

Sample Matrix	Result Request **Surcharge
Sludge	<input type="checkbox"/> STD <input type="checkbox"/> 5 Day** <input type="checkbox"/> 2 Day** <input type="checkbox"/> 1 Day**
Drinking Water	
Ground Water	
Waste Water	
Other	

Sample #	Description	Date Sampled	Time Sampled
15	HA-26-15.0	10/04/17	11:50
16	HA-26-20.0		12:00
17	HA-49-1.0		14:00
18	HA-49-3.0		14:05
19	HA-49-5.0		14:20

Global ID (Needed for EDF)

EDF Required? Geotracker ☐ Yes ☐ No

Send Copy to State of CA? (EDT) ☐ Yes ☐ No

1. Relinquished By Jim Roney Date 10-4-17 Time 1500

2. Relinquished By Mark Hennings Date 10-4-17 Time 2100

3. Relinquished By Mark Hennings Date 10-4-17 Time 2100

System # (Needed for EDT)

1. Received By Mark Hennings Date 10-4-17 Time 1500

2. Received By Mark Hennings Date 10-4-17 Time 2100

3. Received By Mark Hennings Date 10-4-17 Time 2100



BC LABORATORIES, INC.

Project #: 17-28588  
Project Name: 17-28588  
Street Address: 4100 Atlas Ct.  
City, State, Zip: Bakersfield, CA 93308  
Phone: (661) 327-4911  
Fax: (661) 327-1918  
Email: info@bclabs.com  
Work Order #: 17-28588

Analysis Requested

Comments:

Sample Matrix

Result Request \*\*Surcharge

Notes

Global ID

EDF Required?

Send Copy to State of CA? (EDT)

Global ID

EDF Required?

Send Copy to State of CA? (EDT)

Client:

Address:

City:

State:

Zip:

Attn:

P.O. #:

1. Received By

2. Received By

3. Received By

1. Relinquished By

2. Relinquished By

3. Relinquished By

1. Received By

2. Received By

3. Received By

1. Relinquished By

2. Relinquished By

3. Relinquished By

BC Laboratories, Inc. - 4100 Atlas Ct. - Bakersfield, CA 93308 - 661.327.4911 - Fax: 661.327.1918 - www.bclabs.com





**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1728588 Page 5 of 7

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page 1 of 3							
Submission #: <b>17-28588</b>											
<b>SHIPPING INFORMATION</b>		<b>SHIPPING CONTAINER</b>		<b>FREE LIQUID</b>							
Fed Ex <input type="checkbox"/>	UPS <input type="checkbox"/>	Ontrac <input type="checkbox"/>	Hand Delivery <input type="checkbox"/>	Ice Chest <input checked="" type="checkbox"/>	None <input type="checkbox"/> Box <input type="checkbox"/>						
BC Lab Field Service <input checked="" type="checkbox"/>		Other <input type="checkbox"/> (Specify) _____		Other <input type="checkbox"/> (Specify) _____							
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: _____											
Custody Seals: Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments: _____											
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											
COC Received <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Emissivity: <b>0.95</b> Container: <b>901 Steel</b> Thermometer ID: <b>706</b>		Date/Time: <b>10/4/17 2:00</b>							
Temperature: (A) <b>31°C / 101°F</b>		Analyst Init: <b>PVE</b>									
<b>SAMPLE CONTAINERS</b>		<b>SAMPLE NUMBERS</b>									
		1	2	3	4	5	6	7	8	9	10
QT FE UNPRES											
4oz / 8oz / 16oz FE UNPRES											
2oz Cr <sup>6+</sup>											
QT INORGANIC CHEMICAL METALS											
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz											
PT CYANIDE											
PT NITROGEN FORMS											
PT TOTAL SULFIDE											
2oz. NITRATE / NITRITE											
PT TOTAL ORGANIC CARBON											
PT CHEMICAL OXYGEN DEMAND											
PIA PHENOLICS											
40ml VOA VIAL TRAVEL BLANK											
40ml VOA VIAL											
QT EPA 1664											
PT ODOR											
RADIOLOGICAL											
BACTERIOLOGICAL											
40 ml VOA VIAL- 504											
QT EPA 508/608/8080											
QT EPA 515.1/6150											
QT EPA 525											
QT EPA 525 TRAVEL BLANK											
40ml EPA 547											
40ml EPA 531.1											
8oz EPA 548											
QT EPA 549											
QT EPA 8015M											
QT EPA 6270											
8oz / 16oz / 32oz AMBER											
8oz / 16oz / 32oz CLEAR											
SOIL SLEEVE		A	A	A	A	A	A	A	A		
PCB VIAL											
PLASTIC BAG											
TEDLAR BAG											
FERROUS IRON											
ENCORE											
SMART KIT											
SUMMA CANISTER											

Comments:

Sample Numbering Completed By: **lyg**

A = Actual / C = Corrected

Date/Time: **10.9.17 1100**

Rev 21 05/23/2016

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1728588 Page 6 of 7

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page <u>2</u> Of <u>3</u>	
Submission #: <u>17-28588</u>					
SHIPPING INFORMATION			SHIPPING CONTAINER		FREE LIQUID
Fed Ex <input type="checkbox"/>	UPS <input type="checkbox"/>	Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/>	Ice Chest <input checked="" type="checkbox"/>	None <input type="checkbox"/> Box <input type="checkbox"/>	YES <input type="checkbox"/> NO <input type="checkbox"/>
BC Lab Field Service <input checked="" type="checkbox"/> Other <input type="checkbox"/> (Specify) _____			Other <input type="checkbox"/> (Specify) _____		W / S
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: _____					
Custody Seals: Ice Chest <input checked="" type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments: <u>X</u>					
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>					
COC Received <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Emissivity: <u>0.95</u>	Container: <u>Solid Serv</u>	Thermometer ID: <u>206</u>	Date/Time <u>10/4/17 2:00</u>
		Temperature: (A) <u>3.0</u> °C / (C) <u>30</u> °C	Analyst Init <u>PNE</u>		

SAMPLE CONTAINERS	SAMPLE NUMBERS									
	1	2	3	4	5	6	7	8	9	10
QT PE UNPRES										
4oz / 8oz / 16oz PE UNPRES										
2oz Cr <sup>4</sup>										
QT INORGANIC CHEMICAL METALS										
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz										
PT CYANIDE										
PT NITROGEN FORMS										
PT TOTAL SULFIDE										
2oz NITRATE / NITRITE										
PT TOTAL ORGANIC CARBON										
PT CHEMICAL OXYGEN DEMAND										
PTA PHENOLICS										
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664										
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL										
40 ml VOA VIAL- 504										
QT EPA 918/008/8080										
QT EPA 515.1/8150										
QT EPA 525										
QT EPA 525 TRAVEL BLANK										
40ml EPA 547										
40ml EPA 531.1										
8oz EPA 548										
QT EPA 549										
QT EPA 8015M										
QT EPA 8270										
8oz / 16oz / 32oz AMBER										
8oz / 16oz / 32oz IAR										
SOIL SLEEVE	A	A	A	A	A	A	A	A		
PCB VIAL										
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON										
ENCORE										
SMART KIT										
SUMMA CANISTER										

Comments: \_\_\_\_\_ Date/Time: 10-9-17 1100 Rev 21 05/23/2016  
Sample Numbering Completed By: [Signature]  
A = Actual / C = Corrected

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1728588 Page 7 of 7

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page 3 of 3	
Submission #: <b>17-28588</b>					
<b>SHIPPING INFORMATION</b>		<b>SHIPPING CONTAINER</b>		<b>FREE LIQUID</b>	
Fed Ex <input type="checkbox"/>	UPS <input type="checkbox"/>	Ontrac <input type="checkbox"/>	Hand Delivery <input type="checkbox"/>	Ice Chest <input checked="" type="checkbox"/>	None <input type="checkbox"/> Box <input type="checkbox"/>
BC Lab Field Service <input checked="" type="checkbox"/>		Other (Specify) _____		Other (Specify) _____	
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: _____					
Custody Seals: Ice Chest <input checked="" type="checkbox"/> Containers <input checked="" type="checkbox"/> None <input type="checkbox"/> Comments: _____					
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>					
COC Received <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Emissivity: <b>0.98</b> Container: <b>Clear</b> Thermometer ID: <b>706</b>		Date/Time: <b>10/4/17 2:00</b>	
		Temperature: (A) <b>3.0</b> °C / (C) <b>2.7</b> °C		Analyst Init: <b>PNY</b>	
<b>SAMPLE CONTAINERS</b>		<b>SAMPLE NUMBERS</b>			
		<b>17</b>	<b>18</b>	<b>19</b>	<b>20</b>
QT FE UNPRES					
4oz/8oz/16oz FE UNPRES					
2oz Cr <sup>6</sup>					
QT INORGANIC CHEMICAL METALS					
INORGANIC CHEMICAL METALS 4oz/8oz/16oz					
PT CYANIDE					
PT NITROGEN FORMS					
PT TOTAL SULFIDE					
2oz NITRATE/NITRITE					
PT TOTAL ORGANIC CARBON					
PT CHEMICAL OXYGEN DEMAND					
PIA PHENOLICS					
40ml VOA VIAL TRAVEL BLANK					
40ml VOA VIAL					
QT EPA 1664					
PT ODOR					
RADIOLOGICAL					
BACTERIOLOGICAL					
40 ml VOA VIAL- 504					
QT EPA 508/603/8080					
QT EPA 515.1/5150					
QT EPA 525					
QT EPA 525 TRAVEL BLANK					
40ml EPA 547					
40ml EPA 531.1					
8oz EPA 548					
QT EPA 549					
QT EPA 8015M					
QT EPA 8270					
8oz/16oz/32oz AMBER					
8oz/16oz/32oz JAR		<b>A</b>	<b>A</b>	<b>A</b>	
SOIL SLEEVE					
PCB VIAL					
PLASTIC BAG					
TEDLAR BAG					
FERROUS IRON					
INCORE					
SMART KIT					
MUMMA CANISTER					
Comments: _____					
Sample Numbering Completed By: <b>Kpy</b>		Date/Time: <b>10-9-17 1100</b>		Rev 21 05/23/2016	
= Actual / C = Corrected		[S:\WPDoc\WordPerfect\LAB_DOCS\FORMS\SAMRECrev 20]			

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1728588-01	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728588-01	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-37(a)-10.0
1728588-01	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/04/2017 21:00
1728588-01	<b>Sampling Date:</b>	10/04/2017 08:25
	<b>Sample Depth:</b>	---
1728588-01	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728588-01	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728588-01	<b>Location ID (FieldPoint):</b>	HA-37(a)
	<b>Matrix:</b>	SO
1728588-01	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1728588-02	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728588-02	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-37(a)-15.0
1728588-02	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/04/2017 21:00
1728588-02	<b>Sampling Date:</b>	10/04/2017 08:35
	<b>Sample Depth:</b>	---
1728588-02	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728588-02	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728588-02	<b>Location ID (FieldPoint):</b>	HA-37(a)
	<b>Matrix:</b>	SO
1728588-02	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1728588-03	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728588-03	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-37(a)-20.0
1728588-03	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/04/2017 21:00
1728588-03	<b>Sampling Date:</b>	10/04/2017 08:45
	<b>Sample Depth:</b>	---
1728588-03	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728588-03	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728588-03	<b>Location ID (FieldPoint):</b>	HA-37(a)
	<b>Matrix:</b>	SO
1728588-03	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1728588-04	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728588-05	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-43-9.0
1728588-06	<b>Sampled By:</b>	SISL
	<b>Sampling Point:</b>	HA-43-10.0
1728588-06	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-43-15.0
1728588-06	<b>Sampled By:</b>	SISL
	<b>Sampling Point:</b>	HA-43-15.0

**Receive Date:** 10/04/2017 21:00  
**Sampling Date:** 10/04/2017 09:23  
**Sample Depth:** ---  
**Lab Matrix:** Solids  
**Sample Type:** Soil  
Delivery Work Order:  
Global ID:  
Location ID (FieldPoint): HA-43  
Matrix: SO  
Sample QC Type (SACode): CS  
Cooler ID:

**Receive Date:** 10/04/2017 21:00  
**Sampling Date:** 10/04/2017 09:25  
**Sample Depth:** ---  
**Lab Matrix:** Solids  
**Sample Type:** Soil  
Delivery Work Order:  
Global ID:  
Location ID (FieldPoint): HA-43  
Matrix: SO  
Sample QC Type (SACode): CS  
Cooler ID:

**Receive Date:** 10/04/2017 21:00  
**Sampling Date:** 10/04/2017 09:35  
**Sample Depth:** ---  
**Lab Matrix:** Solids  
**Sample Type:** Soil  
Delivery Work Order:  
Global ID:  
Location ID (FieldPoint): HA-43  
Matrix: SO  
Sample QC Type (SACode): CS  
Cooler ID:

Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1728588-07	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728588-08	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-43-20.0
1728588-09	<b>Sampled By:</b>	SISL
	<b>Sampling Point:</b>	HA-37(a)-1.0
1728588-07	<b>Receive Date:</b>	10/04/2017 21:00
	<b>Sampling Date:</b>	10/04/2017 09:45
1728588-08	<b>Sample Depth:</b>	---
	<b>Lab Matrix:</b>	Solids
1728588-09	<b>Sample Type:</b>	Soil
	<b>Delivery Work Order:</b>	Global ID:
1728588-07	<b>Location ID (FieldPoint):</b>	HA-43
	<b>Matrix:</b>	SO
1728588-08	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1728588-09	<b>Receive Date:</b>	10/04/2017 21:00
	<b>Sampling Date:</b>	10/04/2017 07:50
1728588-07	<b>Sample Depth:</b>	---
	<b>Lab Matrix:</b>	Solids
1728588-08	<b>Sample Type:</b>	Soil
	<b>Delivery Work Order:</b>	Global ID:
1728588-09	<b>Location ID (FieldPoint):</b>	HA-37(a)
	<b>Matrix:</b>	SO
1728588-07	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1728588-08	<b>Receive Date:</b>	10/04/2017 21:00
	<b>Sampling Date:</b>	10/04/2017 08:00
1728588-09	<b>Sample Depth:</b>	---
	<b>Lab Matrix:</b>	Solids
1728588-07	<b>Sample Type:</b>	Soil
	<b>Delivery Work Order:</b>	Global ID:
1728588-08	<b>Location ID (FieldPoint):</b>	HA-37(a)
	<b>Matrix:</b>	SO
1728588-09	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1728588-10	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728588-11	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-37(a)-5.0
1728588-12	<b>Sampled By:</b>	SISL
	<b>Sampling Point:</b>	HA-44-10.0
1728588-13	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-44-15.0
1728588-14	<b>Sampled By:</b>	SISL
	<b>Sampling Point:</b>	HA-44-15.0

**Receive Date:** 10/04/2017 21:00  
**Sampling Date:** 10/04/2017 08:10  
**Sample Depth:** ---  
**Lab Matrix:** Solids  
**Sample Type:** Soil  
Delivery Work Order:  
Global ID:  
Location ID (FieldPoint): HA-37(a)  
Matrix: SO  
Sample QC Type (SACode): CS  
Cooler ID:

**Receive Date:** 10/04/2017 21:00  
**Sampling Date:** 10/04/2017 11:15  
**Sample Depth:** ---  
**Lab Matrix:** Solids  
**Sample Type:** Soil  
Delivery Work Order:  
Global ID:  
Location ID (FieldPoint): HA-44  
Matrix: SO  
Sample QC Type (SACode): CS  
Cooler ID:

**Receive Date:** 10/04/2017 21:00  
**Sampling Date:** 10/04/2017 11:25  
**Sample Depth:** ---  
**Lab Matrix:** Solids  
**Sample Type:** Soil  
Delivery Work Order:  
Global ID:  
Location ID (FieldPoint): HA-44  
Matrix: SO  
Sample QC Type (SACode): CS  
Cooler ID:

Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1728588-13	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728588-13	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-26-10.0
1728588-13	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/04/2017 21:00
1728588-13	<b>Sampling Date:</b>	10/04/2017 11:40
	<b>Sample Depth:</b>	---
1728588-13	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728588-13	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728588-13	<b>Location ID (FieldPoint):</b>	HA-26
	<b>Matrix:</b>	SO
1728588-13	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1728588-14	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728588-14	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-26-13.0
1728588-14	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/04/2017 21:00
1728588-14	<b>Sampling Date:</b>	10/04/2017 11:47
	<b>Sample Depth:</b>	---
1728588-14	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728588-14	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728588-14	<b>Location ID (FieldPoint):</b>	HA-26
	<b>Matrix:</b>	SO
1728588-14	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1728588-15	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728588-15	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-26-15.0
1728588-15	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/04/2017 21:00
1728588-15	<b>Sampling Date:</b>	10/04/2017 11:50
	<b>Sample Depth:</b>	---
1728588-15	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728588-15	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728588-15	<b>Location ID (FieldPoint):</b>	HA-26
	<b>Matrix:</b>	SO
1728588-15	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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San Luis Obispo, CA 93401

**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1728588-16	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728588-16	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-26-20.0
1728588-16	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/04/2017 21:00
1728588-16	<b>Sampling Date:</b>	10/04/2017 12:00
	<b>Sample Depth:</b>	---
1728588-16	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728588-16	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728588-16	<b>Location ID (FieldPoint):</b>	HA-26
	<b>Matrix:</b>	SO
1728588-16	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1728588-17	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728588-17	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-49-1.0
1728588-17	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/04/2017 21:00
1728588-17	<b>Sampling Date:</b>	10/04/2017 14:00
	<b>Sample Depth:</b>	---
1728588-17	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728588-17	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728588-17	<b>Location ID (FieldPoint):</b>	HA-49
	<b>Matrix:</b>	SO
1728588-17	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1728588-18	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728588-18	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-49-3.0
1728588-18	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/04/2017 21:00
1728588-18	<b>Sampling Date:</b>	10/04/2017 14:05
	<b>Sample Depth:</b>	---
1728588-18	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728588-18	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728588-18	<b>Location ID (FieldPoint):</b>	HA-49
	<b>Matrix:</b>	SO
1728588-18	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information			
1728588-19	<b>COC Number:</b>	---	<b>Receive Date:</b>	10/04/2017 21:00
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b>	10/04/2017 14:20
	<b>Sampling Location:</b>	---	<b>Sample Depth:</b>	---
	<b>Sampling Point:</b>	HA-49-5.0	<b>Lab Matrix:</b>	Solids
	<b>Sampled By:</b>	SISL	<b>Sample Type:</b>	Soil
			<b>Delivery Work Order:</b>	
			<b>Global ID:</b>	
			<b>Location ID (FieldPoint):</b>	HA-49
			<b>Matrix:</b>	SO
			<b>Sample QC Type (SACode):</b>	CS
			<b>Cooler ID:</b>	



**EMSL Analytical, Inc.**

464 McCormick Street San Leandro, CA 94577  
Tel/Fax: (510) 895-3675 / (510) 895-3680  
<http://www.EMSL.com/sanleandrolab@emsl.com>

EMSL Order: 091800316  
Customer ID: BCLA50  
Customer PO: 1728588  
Project ID:

Attention: Molly Meyers  
BC Laboratories, Inc.  
4100 Atlas Court  
Bakersfield, CA 93308

Phone: (661) 327-4911  
Fax: (661) 327-1918  
Received Date: 01/04/2018 12:30 PM  
Analysis Date: 01/09/2018  
Collected Date:

Project: 1728588

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020  
Method(s) using Polarized Light Microscopy**

Sample	Description	Appearance	% Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
1728588-01		Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
091800316-0001	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1728588-02		Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
091800316-0002	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1728588-13		Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
091800316-0003	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1728588-14		Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
091800316-0004	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1728588-15		Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
091800316-0005	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				

Analyst(s)  
Adam C. Fink (5)

  
Matthew Batongbacal  
or Other Approved Signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The limit of detection as stated in the method is 1%. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The test results contained within this report meet the requirements of NELAC unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from: 01/10/2018 02:55:32

ASB\_PLM\_0008\_0001 - 1.78 Printed: 1/9/2018 11:55 PM

Page 1 of 1



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**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728588-01	<b>Client Sample Name:</b>	Former Northern Landfill, HA-37(a)-10.0, 10/4/2017 8:25:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>14</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND	<b>J</b>	<b>1</b>
Tetracosane (Surrogate)	95.5	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:50	10/15/17 13:32	AS1	GC-2	1.003	BJ1688

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**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Concentrations (TTLIC)

BCL Sample ID: 1728588-01		Client Sample Name: Former Northern Landfill, HA-37(a)-10.0, 10/4/2017 8:25:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Antimony	ND	mg/kg	5.0	0.33	EPA-6010B	ND		1
Arsenic	1.6	mg/kg	1.0	0.40	EPA-6010B	ND		1
Barium	11	mg/kg	0.50	0.18	EPA-6010B	ND		1
Beryllium	0.11	mg/kg	0.50	0.047	EPA-6010B	ND	J	1
Cadmium	0.077	mg/kg	0.50	0.052	EPA-6010B	ND	J	1
Chromium	8.0	mg/kg	0.50	0.050	EPA-6010B	0.15		1
Total Hexavalent Chromium	0.55	mg/kg	1.0	0.30	EPA-7199	ND	J,S05	2
Cobalt	1.1	mg/kg	2.5	0.098	EPA-6010B	ND	J	1
Copper	1.4	mg/kg	1.0	0.050	EPA-6010B	ND		1
Lead	1.6	mg/kg	2.5	0.28	EPA-6010B	ND	J	1
Mercury	ND	mg/kg	0.16	0.019	EPA-7471A	ND	S05	3
Molybdenum	0.20	mg/kg	2.5	0.050	EPA-6010B	0.055	J	1
Nickel	4.2	mg/kg	0.50	0.15	EPA-6010B	ND		1
Selenium	ND	mg/kg	1.0	0.98	EPA-6010B	ND		1
Silver	ND	mg/kg	0.50	0.067	EPA-6010B	ND		1
Thallium	ND	mg/kg	5.0	0.64	EPA-6010B	ND		1
Vanadium	7.4	mg/kg	0.50	0.11	EPA-6010B	ND		1
Zinc	6.8	mg/kg	2.5	0.087	EPA-6010B	1.0		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	03/02/18 18:35	03/05/18 13:06	JCC	PE-OP3	0.935	B006562
2	EPA-7199	03/05/18 10:05	03/06/18 15:27	SAV	IC-4	1	B006616
3	EPA-7471A	03/02/18 10:55	03/05/18 14:12	JP1	CETAC2	0.977	B006519

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



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**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728588-02	<b>Client Sample Name:</b>	Former Northern Landfill, HA-37(a)-15.0, 10/4/2017 8:35:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	62.3	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:50	10/15/17 05:54	AS1	GC-2	1	BJ1688

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**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728588-03	<b>Client Sample Name:</b>	Former Northern Landfill, HA-37(a)-20.0, 10/4/2017 8:45:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	75.9	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:50	10/15/17 07:26	AS1	GC-2	1.007	BJ1688

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**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728588-04	<b>Client Sample Name:</b>	Former Northern Landfill, HA-43-9.0, 10/4/2017 9:23:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>62</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND	<b>A57</b>	1
Tetracosane (Surrogate)	49.3	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:50	10/18/17 12:58	AS1	GC-2	1.010	BJ1688

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**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728588-06	<b>Client Sample Name:</b>	Former Northern Landfill, HA-43-15.0, 10/4/2017 9:35:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	75.6	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:50	10/15/17 06:17	AS1	GC-2	1.017	BJ1688

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**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728588-07	<b>Client Sample Name:</b>	Former Northern Landfill, HA-43-20.0, 10/4/2017 9:45:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	73.4	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:50	10/15/17 07:50	AS1	GC-2	0.984	BJ1688

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**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728588-08	<b>Client Sample Name:</b>	Former Northern Landfill, HA-37(a)-1.0, 10/4/2017 7:50:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	710	180	EPA-8015B/FFP	ND	A01	1
TPH - Diesel (FFP)	ND	mg/kg	350	42	EPA-8015B/FFP	ND	A01	1
<b>TPH - Motor Oil</b>	<b>5600</b>	<b>mg/kg</b>	<b>710</b>	<b>230</b>	<b>EPA-8015B/FFP</b>	ND	<b>A01</b>	1
Tetracosane (Surrogate)	50.9	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		A01	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:50	10/18/17 13:43	AS1	GC-2	35.294	BJ1688

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**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728588-09	<b>Client Sample Name:</b>	Former Northern Landfill, HA-37(a)-3.0, 10/4/2017 8:00:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	40	10	EPA-8015B/FFP	ND	A01	1
TPH - Diesel (FFP)	ND	mg/kg	20	2.4	EPA-8015B/FFP	ND	A01	1
<b>TPH - Motor Oil</b>	<b>320</b>	<b>mg/kg</b>	<b>40</b>	<b>13</b>	<b>EPA-8015B/FFP</b>	ND	<b>A01</b>	1
Tetracosane (Surrogate)	70.5	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP		A01	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:50	10/18/17 13:21	AS1	GC-2	2.027	BJ1688

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San Luis Obispo, CA 93401

**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Organochlorine Pesticides and PCB's (EPA Method 8080)

BCL Sample ID: 1728588-10		Client Sample Name: Former Northern Landfill, HA-37(a)-5.0, 10/4/2017 8:10:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Aldrin	ND	mg/kg	0.050	0.0034	EPA-8080	ND	A10	1
alpha-BHC	ND	mg/kg	0.050	0.013	EPA-8080	ND	A10	1
beta-BHC	ND	mg/kg	0.050	0.015	EPA-8080	ND	A10	1
delta-BHC	ND	mg/kg	0.050	0.0047	EPA-8080	ND	A10	1
gamma-BHC (Lindane)	ND	mg/kg	0.050	0.0082	EPA-8080	ND	A10	1
Chlordane (Technical)	ND	mg/kg	5.0	0.17	EPA-8080	ND	A10	1
4,4'-DDD	ND	mg/kg	0.050	0.021	EPA-8080	ND	A10	1
4,4'-DDE	ND	mg/kg	0.050	0.0020	EPA-8080	ND	A10	1
4,4'-DDT	ND	mg/kg	0.050	0.0093	EPA-8080	ND	A10	1
Dieldrin	ND	mg/kg	0.050	0.0079	EPA-8080	ND	A10	1
Endosulfan I	ND	mg/kg	0.050	0.0022	EPA-8080	ND	A10	1
Endosulfan II	ND	mg/kg	0.050	0.014	EPA-8080	ND	A10	1
Endosulfan sulfate	ND	mg/kg	0.050	0.034	EPA-8080	ND	A10	1
Endrin	ND	mg/kg	0.050	0.0091	EPA-8080	ND	A10	1
Endrin aldehyde	ND	mg/kg	0.050	0.023	EPA-8080	ND	A10	1
Heptachlor	ND	mg/kg	0.050	0.0036	EPA-8080	ND	A10	1
Heptachlor epoxide	ND	mg/kg	0.050	0.0017	EPA-8080	ND	A10	1
Methoxychlor	ND	mg/kg	0.050	0.021	EPA-8080	ND	A10	1
Toxaphene	ND	mg/kg	5.0	0.94	EPA-8080	ND	A10	1
PCB-1016	ND	mg/kg	1.0	0.39	EPA-8080	ND	A10	1
PCB-1221	ND	mg/kg	1.0	0.72	EPA-8080	ND	A10	1
PCB-1232	ND	mg/kg	1.0	0.74	EPA-8080	ND	A10	1
PCB-1242	ND	mg/kg	1.0	0.42	EPA-8080	ND	A10	1
PCB-1248	ND	mg/kg	1.0	0.70	EPA-8080	ND	A10	1
PCB-1254	ND	mg/kg	1.0	0.32	EPA-8080	ND	A10	1
PCB-1260	ND	mg/kg	1.0	0.29	EPA-8080	ND	A10	1
Total PCB's (Summation)	ND	mg/kg	1.0	0.50	EPA-8080	ND	A10	1
TCMX (Surrogate)	67.7	%	20 - 130 (LCL - UCL)		EPA-8080		A10	1
Decachlorobiphenyl (Surrogate)	63.5	%	40 - 130 (LCL - UCL)		EPA-8080		A10	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8080	10/11/17 20:30	10/12/17 20:45	HKS	GC-17	100	BJ1354

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**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Organo-Phosphorus Pesticide Analysis (EPA Method 8141A)

BCL Sample ID: 1728588-10		Client Sample Name: Former Northern Landfill, HA-37(a)-5.0, 10/4/2017 8:10:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Azinphos methyl	ND	mg/kg	0.25	0.18	EPA-8141A	ND		1
Bolstar	ND	mg/kg	0.25	0.055	EPA-8141A	ND		1
Chlorpyrifos	ND	mg/kg	0.25	0.035	EPA-8141A	ND		1
Coumaphos	ND	mg/kg	0.25	0.20	EPA-8141A	ND		1
Demeton O/S	ND	mg/kg	0.25	0.085	EPA-8141A	ND		1
Diazinon	ND	mg/kg	0.25	0.060	EPA-8141A	ND		1
Dichlorvos	ND	mg/kg	0.25	0.023	EPA-8141A	ND		1
Disulfoton	ND	mg/kg	0.25	0.048	EPA-8141A	ND		1
Ethoprop	ND	mg/kg	0.25	0.030	EPA-8141A	ND		1
Fensulfothion	ND	mg/kg	0.25	0.14	EPA-8141A	ND		1
Fenthion	ND	mg/kg	0.25	0.052	EPA-8141A	ND		1
Merphos	ND	mg/kg	0.25	0.048	EPA-8141A	ND		1
Methyl parathion	ND	mg/kg	0.25	0.062	EPA-8141A	ND		1
Mevinphos	ND	mg/kg	0.25	0.060	EPA-8141A	ND		1
Naled	ND	mg/kg	0.25	0.11	EPA-8141A	ND		1
Phorate	ND	mg/kg	0.25	0.065	EPA-8141A	ND		1
Ronnel (Fenchlorphos)	ND	mg/kg	0.25	0.035	EPA-8141A	ND		1
Stirophos (Tetrachlorvinphos)	ND	mg/kg	0.25	0.050	EPA-8141A	ND		1
Tokuthion (Prothiofos)	ND	mg/kg	0.25	0.042	EPA-8141A	ND		1
Trichloronate	ND	mg/kg	0.25	0.032	EPA-8141A	ND		1
Triphenylphosphate (Surrogate)	101	%	40 - 120 (LCL - UCL)		EPA-8141A			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8141A	10/13/17 18:20	10/16/17 23:04	RSM	GC-18	25	BJ1652

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**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Chlorinated Herbicides (EPA Method 8151A)

BCL Sample ID: 1728588-10		Client Sample Name: Former Northern Landfill, HA-37(a)-5.0, 10/4/2017 8:10:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
2,4-D	ND	mg/kg	2.0	0.58	EPA-8151A	ND	A01	1
2,4-DB	ND	mg/kg	4.0	1.7	EPA-8151A	ND	A01	1
Dalapon	ND	mg/kg	5.0	3.4	EPA-8151A	ND	A01	1
Dicamba	ND	mg/kg	0.20	0.16	EPA-8151A	ND	A01	1
Dichloroprop	ND	mg/kg	2.0	0.55	EPA-8151A	ND	A01	1
Dinoseb	ND	mg/kg	0.70	0.24	EPA-8151A	ND	A01	1
2,4,5-T	ND	mg/kg	0.30	0.13	EPA-8151A	ND	A01	1
2,4,5-TP (Silvex)	ND	mg/kg	0.30	0.12	EPA-8151A	ND	A01	1
2,4-Dichlorophenylacetic acid (Surrogate)	35.0	%	40 - 120 (LCL - UCL)		EPA-8151A		A01,S09	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8151A	10/13/17 11:40	10/17/17 13:34	MSB	GC-8	100	BJ1645

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**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1728588-10		Client Sample Name: Former Northern Landfill, HA-37(a)-5.0, 10/4/2017 8:10:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Benzene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
Bromobenzene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
Bromochloromethane	ND	mg/kg	0.0050	0.00092	EPA-8260B	ND		1
Bromodichloromethane	ND	mg/kg	0.0050	0.00084	EPA-8260B	ND		1
Bromoform	ND	mg/kg	0.0050	0.0015	EPA-8260B	ND		1
Bromomethane	ND	mg/kg	0.0050	0.0016	EPA-8260B	ND		1
n-Butylbenzene	ND	mg/kg	0.0050	0.0015	EPA-8260B	ND		1
sec-Butylbenzene	ND	mg/kg	0.0050	0.0012	EPA-8260B	ND		1
tert-Butylbenzene	ND	mg/kg	0.0050	0.0012	EPA-8260B	ND		1
Carbon tetrachloride	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
Chlorobenzene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
Chloroethane	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
Chloroform	ND	mg/kg	0.0050	0.00063	EPA-8260B	ND		1
Chloromethane	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
2-Chlorotoluene	ND	mg/kg	0.0050	0.0018	EPA-8260B	ND		1
4-Chlorotoluene	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
Dibromochloromethane	ND	mg/kg	0.0050	0.00099	EPA-8260B	ND		1
1,2-Dibromo-3-chloropropane	ND	mg/kg	0.0050	0.0017	EPA-8260B	ND		1
1,2-Dibromoethane	ND	mg/kg	0.0050	0.0010	EPA-8260B	ND		1
Dibromomethane	ND	mg/kg	0.0050	0.0018	EPA-8260B	ND		1
1,2-Dichlorobenzene	ND	mg/kg	0.0050	0.00081	EPA-8260B	ND		1
1,3-Dichlorobenzene	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
1,4-Dichlorobenzene	ND	mg/kg	0.0050	0.0015	EPA-8260B	ND		1
Dichlorodifluoromethane	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
1,1-Dichloroethane	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
1,2-Dichloroethane	ND	mg/kg	0.0050	0.00085	EPA-8260B	ND		1
1,1-Dichloroethene	ND	mg/kg	0.0050	0.0012	EPA-8260B	ND		1
cis-1,2-Dichloroethene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
trans-1,2-Dichloroethene	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
1,2-Dichloropropane	ND	mg/kg	0.0050	0.00081	EPA-8260B	ND		1
1,3-Dichloropropane	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
2,2-Dichloropropane	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
1,1-Dichloropropene	ND	mg/kg	0.0050	0.0012	EPA-8260B	ND		1

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**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Volatile Organic Analysis (EPA Method 8260B)

BCL Sample ID: 1728588-10		Client Sample Name: Former Northern Landfill, HA-37(a)-5.0, 10/4/2017 8:10:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
cis-1,3-Dichloropropene	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
trans-1,3-Dichloropropene	ND	mg/kg	0.0050	0.0012	EPA-8260B	ND		1
Ethylbenzene	ND	mg/kg	0.0050	0.0015	EPA-8260B	ND		1
Hexachlorobutadiene	ND	mg/kg	0.0050	0.0017	EPA-8260B	ND		1
Isopropylbenzene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
p-Isopropyltoluene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
Methylene chloride	ND	mg/kg	0.010	0.0024	EPA-8260B	ND		1
<b>Methyl t-butyl ether</b>	<b>0.00054</b>	<b>mg/kg</b>	<b>0.0050</b>	<b>0.00050</b>	<b>EPA-8260B</b>	ND	<b>J</b>	1
Naphthalene	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
n-Propylbenzene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
Styrene	ND	mg/kg	0.0050	0.0014	EPA-8260B	ND		1
1,1,1,2-Tetrachloroethane	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
1,1,2,2-Tetrachloroethane	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
Tetrachloroethene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
Toluene	ND	mg/kg	0.0050	0.0012	EPA-8260B	ND		1
1,2,3-Trichlorobenzene	ND	mg/kg	0.0050	0.0021	EPA-8260B	ND		1
1,2,4-Trichlorobenzene	ND	mg/kg	0.0050	0.0020	EPA-8260B	ND		1
1,1,1-Trichloroethane	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
1,1,2-Trichloroethane	ND	mg/kg	0.0050	0.00077	EPA-8260B	ND		1
Trichloroethene	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
Trichlorofluoromethane	ND	mg/kg	0.0050	0.0011	EPA-8260B	ND		1
1,2,3-Trichloropropane	ND	mg/kg	0.0050	0.0016	EPA-8260B	ND		1
1,1,2-Trichloro-1,2,2-trifluoroethane	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
1,2,4-Trimethylbenzene	ND	mg/kg	0.0050	0.0013	EPA-8260B	ND		1
1,3,5-Trimethylbenzene	ND	mg/kg	0.0050	0.0015	EPA-8260B	ND		1
Vinyl chloride	ND	mg/kg	0.0050	0.0016	EPA-8260B	ND		1
Total Xylenes	ND	mg/kg	0.010	0.0034	EPA-8260B	ND		1
p- & m-Xylenes	ND	mg/kg	0.0050	0.0022	EPA-8260B	ND		1
o-Xylene	ND	mg/kg	0.0050	0.0012	EPA-8260B	ND		1
1,2-Dichloroethane-d4 (Surrogate)	83.3	%	70 - 121 (LCL - UCL)		EPA-8260B			1
Toluene-d8 (Surrogate)	97.4	%	81 - 117 (LCL - UCL)		EPA-8260B			1
4-Bromofluorobenzene (Surrogate)	88.2	%	74 - 121 (LCL - UCL)		EPA-8260B			1

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**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Volatile Organic Analysis (EPA Method 8260B)

<b>BCL Sample ID:</b> 1728588-10		<b>Client Sample Name:</b> Former Northern Landfill, HA-37(a)-5.0, 10/4/2017 8:10:00AM					
Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8260B	10/11/17 06:29	10/13/17 08:05	ADC	MS-V2	1	BJ1120

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**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

BCL Sample ID: 1728588-10		Client Sample Name: Former Northern Landfill, HA-37(a)-5.0, 10/4/2017 8:10:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Acenaphthene	ND	mg/kg	0.64	0.26	EPA-8270C-SIM	ND	A01	1
Acenaphthylene	ND	mg/kg	0.64	0.24	EPA-8270C-SIM	ND	A01	1
Anthracene	5.8	mg/kg	0.64	0.26	EPA-8270C-SIM	ND	A01	1
Benzo[a]anthracene	14	mg/kg	0.64	0.24	EPA-8270C-SIM	ND	A01	1
Benzo[b]fluoranthene	9.9	mg/kg	0.64	0.20	EPA-8270C-SIM	ND	A01	1
Benzo[k]fluoranthene	1.3	mg/kg	0.64	0.24	EPA-8270C-SIM	ND	A01	1
Benzo[a]pyrene	8.9	mg/kg	1.6	0.51	EPA-8270C-SIM	ND	A01	2
Benzo[g,h,i]perylene	9.9	mg/kg	0.64	0.24	EPA-8270C-SIM	ND	A01	1
Chrysene	13	mg/kg	1.6	0.52	EPA-8270C-SIM	ND	A01	2
Dibenzo[a,h]anthracene	6.5	mg/kg	0.64	0.21	EPA-8270C-SIM	ND	A01	1
Fluoranthene	1.6	mg/kg	0.64	0.30	EPA-8270C-SIM	ND	A01	1
Fluorene	1.8	mg/kg	0.64	0.24	EPA-8270C-SIM	ND	A01	1
Indeno[1,2,3-cd]pyrene	3.3	mg/kg	0.64	0.20	EPA-8270C-SIM	ND	A01	1
Naphthalene	3.6	mg/kg	0.64	0.24	EPA-8270C-SIM	ND	A01	1
Phenanthrene	7.4	mg/kg	0.64	0.26	EPA-8270C-SIM	ND	A01	1
Pyrene	9.7	mg/kg	0.64	0.32	EPA-8270C-SIM	ND	A01	1
Nitrobenzene-d5 (Surrogate)	50.0	%	30 - 110 (LCL - UCL)		EPA-8270C-SIM		A01	1
2-Fluorobiphenyl (Surrogate)	50.0	%	40 - 120 (LCL - UCL)		EPA-8270C-SIM		A01	1
p-Terphenyl-d14 (Surrogate)	50.0	%	30 - 120 (LCL - UCL)		EPA-8270C-SIM		A01	1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8270C-SIM	10/11/17 21:00	10/13/17 23:05	MSB	MS-B7	214.29	B[J]1535
2	EPA-8270C-SIM	10/11/17 21:00	10/14/17 09:59	MSB	MS-B7	535.71	B[J]1535

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**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728588-10	<b>Client Sample Name:</b>	Former Northern Landfill, HA-37(a)-5.0, 10/4/2017 8:10:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	330	83	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	170	20	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>3900</b>	<b>mg/kg</b>	<b>330</b>	<b>110</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	28.2	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:50	10/18/17 14:06	AS1	GC-2	16.667	BJ1688

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**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Chemical Analysis

<b>BCL Sample ID:</b>	1728588-10	<b>Client Sample Name:</b>	Former Northern Landfill, HA-37(a)-5.0, 10/4/2017 8:10:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Total Cyanide	0.20	mg/kg	0.50	0.15	EPA-9012	ND	J	1
pH	6.81	pH Units	0.05	0.05	EPA-9045D	ND	pH1:1	2
pH Measurement Temperature	25.0	C	0.1	0.1	EPA-9045D	ND		2

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-9012	10/13/17 09:58	10/17/17 11:48	RCC	KONE-1	0.943	B[J]1417
2	EPA-9045D	10/16/17 15:45	10/16/17 15:45	DIW	PH10	1	B[J]1677

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**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Concentrations (TTLIC)

BCL Sample ID: 1728588-10		Client Sample Name: Former Northern Landfill, HA-37(a)-5.0, 10/4/2017 8:10:00AM						
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Antimony	ND	mg/kg	5.0	0.33	EPA-6010B	ND		1
Arsenic	2.0	mg/kg	1.0	0.40	EPA-6010B	ND		1
Barium	7.5	mg/kg	0.50	0.18	EPA-6010B	ND		1
Beryllium	0.22	mg/kg	0.50	0.047	EPA-6010B	ND	J	1
Cadmium	1.3	mg/kg	0.50	0.052	EPA-6010B	ND		1
Chromium	19	mg/kg	0.50	0.050	EPA-6010B	0.078		1
Total Hexavalent Chromium	1.5	mg/kg	2.5	0.75	EPA-7199	ND	J,A07	2
Cobalt	3.4	mg/kg	2.5	0.098	EPA-6010B	ND		1
Copper	7.9	mg/kg	1.0	0.050	EPA-6010B	ND		1
Lead	3.8	mg/kg	2.5	0.28	EPA-6010B	ND		1
Mercury	0.050	mg/kg	0.16	0.019	EPA-7471A	ND	J	3
Molybdenum	23	mg/kg	2.5	0.050	EPA-6010B	0.28		1
Nickel	110	mg/kg	0.50	0.15	EPA-6010B	ND		1
Selenium	1.1	mg/kg	1.0	0.98	EPA-6010B	ND		1
Silver	ND	mg/kg	0.50	0.067	EPA-6010B	ND		1
Thallium	ND	mg/kg	5.0	0.64	EPA-6010B	ND		1
Vanadium	170	mg/kg	0.50	0.11	EPA-6010B	ND		1
Zinc	31	mg/kg	2.5	0.087	EPA-6010B	0.29		1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-6010B	10/20/17 10:25	10/21/17 20:15	JRG	PE-OP2	0.935	B[J]1863
2	EPA-7199	10/11/17 13:00	10/12/17 20:00	SAV	IC-4	2.500	B[J]1201
3	EPA-7471A	10/13/17 12:55	10/16/17 08:50	MEV	CETAC2	1.008	B[J]1454

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**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728588-11	<b>Client Sample Name:</b>	Former Northern Landfill, HA-44-10.0, 10/4/2017 11:15:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	83.0	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:50	10/15/17 08:13	AS1	GC-2	1	BJ1688

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728588-12	<b>Client Sample Name:</b>	Former Northern Landfill, HA-44-15.0, 10/4/2017 11:25:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	70.0	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:50	10/15/17 08:36	AS1	GC-2	1.014	BJ1688

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728588-13	<b>Client Sample Name:</b>	Former Northern Landfill, HA-26-10.0, 10/4/2017 11:40:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	78.0	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:50	10/15/17 08:59	AS1	GC-2	1	BJ1688

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## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728588-14	<b>Client Sample Name:</b>	Former Northern Landfill, HA-26-13.0, 10/4/2017 11:47:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	63.3	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:50	10/15/17 11:39	AS1	GC-2	0.993	BJ1688

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728588-15	<b>Client Sample Name:</b>	Former Northern Landfill, HA-26-15.0, 10/4/2017 11:50:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	72.2	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:50	10/15/17 12:01	AS1	GC-2	1.007	BJ1688

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## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728588-16	<b>Client Sample Name:</b>	Former Northern Landfill, HA-26-20.0, 10/4/2017 12:00:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	78.8	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:50	10/15/17 12:24	AS1	GC-2	1	BJ1688

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## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728588-17	<b>Client Sample Name:</b>	Former Northern Landfill, HA-49-1.0, 10/4/2017 2:00:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
<b>TPH - Motor Oil</b>	<b>27</b>	<b>mg/kg</b>	<b>20</b>	<b>6.5</b>	<b>EPA-8015B/FFP</b>	ND		1
Tetracosane (Surrogate)	72.8	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:50	10/18/17 12:36	AS1	GC-2	1	BJ1688

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## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728588-18	<b>Client Sample Name:</b>	Former Northern Landfill, HA-49-3.0, 10/4/2017 2:05:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	82.4	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:50	10/15/17 12:47	AS1	GC-2	1.003	BJ1688

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## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728588-19	<b>Client Sample Name:</b>	Former Northern Landfill, HA-49-5.0, 10/4/2017 2:20:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	70.8	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 08:50	10/15/17 13:10	AS1	GC-2	0.997	BJ1688

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## Organochlorine Pesticides and PCB's (EPA Method 8080)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J1354</b>						
Aldrin	B[J1354-BLK1	ND	mg/kg	0.00050	0.000034	
alpha-BHC	B[J1354-BLK1	ND	mg/kg	0.00050	0.00013	
beta-BHC	B[J1354-BLK1	ND	mg/kg	0.00050	0.00015	
delta-BHC	B[J1354-BLK1	ND	mg/kg	0.00050	0.000047	
gamma-BHC (Lindane)	B[J1354-BLK1	ND	mg/kg	0.00050	0.000082	
Chlordane (Technical)	B[J1354-BLK1	ND	mg/kg	0.050	0.0017	
4,4'-DDD	B[J1354-BLK1	ND	mg/kg	0.00050	0.00021	
4,4'-DDE	B[J1354-BLK1	ND	mg/kg	0.00050	0.000020	
4,4'-DDT	B[J1354-BLK1	ND	mg/kg	0.00050	0.000093	
Dieldrin	B[J1354-BLK1	ND	mg/kg	0.00050	0.000079	
Endosulfan I	B[J1354-BLK1	ND	mg/kg	0.00050	0.000022	
Endosulfan II	B[J1354-BLK1	ND	mg/kg	0.00050	0.00014	
Endosulfan sulfate	B[J1354-BLK1	ND	mg/kg	0.00050	0.00034	
Endrin	B[J1354-BLK1	ND	mg/kg	0.00050	0.000091	
Endrin aldehyde	B[J1354-BLK1	ND	mg/kg	0.00050	0.00023	
Heptachlor	B[J1354-BLK1	ND	mg/kg	0.00050	0.000036	
Heptachlor epoxide	B[J1354-BLK1	ND	mg/kg	0.00050	0.000017	
Methoxychlor	B[J1354-BLK1	ND	mg/kg	0.00050	0.00021	
Toxaphene	B[J1354-BLK1	ND	mg/kg	0.050	0.0094	
PCB-1016	B[J1354-BLK1	ND	mg/kg	0.010	0.0039	
PCB-1221	B[J1354-BLK1	ND	mg/kg	0.010	0.0072	
PCB-1232	B[J1354-BLK1	ND	mg/kg	0.010	0.0074	
PCB-1242	B[J1354-BLK1	ND	mg/kg	0.010	0.0042	
PCB-1248	B[J1354-BLK1	ND	mg/kg	0.010	0.0070	
PCB-1254	B[J1354-BLK1	ND	mg/kg	0.010	0.0032	
PCB-1260	B[J1354-BLK1	ND	mg/kg	0.010	0.0029	
Total PCB's (Summation)	B[J1354-BLK1	ND	mg/kg	0.010	0.0050	
<b>TCMX (Surrogate)</b>	<b>B[J1354-BLK1</b>	<b>77.2</b>	<b>%</b>	<b>20 - 130 (LCL - UCL)</b>		
<b>Decachlorobiphenyl (Surrogate)</b>	<b>B[J1354-BLK1</b>	<b>88.1</b>	<b>%</b>	<b>40 - 130 (LCL - UCL)</b>		

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## Organochlorine Pesticides and PCB's (EPA Method 8080)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	Quals
QC Batch ID: B[J1354										
Aldrin	B[J1354-BS1	LCS	0.0038475	0.0049180	mg/kg	78.2		70 - 130		
gamma-BHC (Lindane)	B[J1354-BS1	LCS	0.0045141	0.0049180	mg/kg	91.8		60 - 140		
4,4'-DDT	B[J1354-BS1	LCS	0.0049633	0.0049180	mg/kg	101		60 - 140		
Dieldrin	B[J1354-BS1	LCS	0.0040702	0.0049180	mg/kg	82.8		70 - 130		
Endrin	B[J1354-BS1	LCS	0.0041059	0.0049180	mg/kg	83.5		60 - 140		
Heptachlor	B[J1354-BS1	LCS	0.0044223	0.0049180	mg/kg	89.9		60 - 140		
TCMX (Surrogate)	B[J1354-BS1	LCS	0.0073305	0.0098361	mg/kg	74.5		20 - 130		
Decachlorobiphenyl (Surrogate)	B[J1354-BS1	LCS	0.015064	0.019672	mg/kg	76.6		40 - 130		

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## Organochlorine Pesticides and PCB's (EPA Method 8080)

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J1354		Used client sample: N									
Aldrin	MS	1724840-12	ND	0.0037960	0.0049834	mg/kg		76.2		50 - 140	
	MSD	1724840-12	ND	0.0038729	0.0050847	mg/kg	2.0	76.2	30	50 - 140	
gamma-BHC (Lindane)	MS	1724840-12	ND	0.0044987	0.0049834	mg/kg		90.3		50 - 140	
	MSD	1724840-12	ND	0.0044827	0.0050847	mg/kg	0.4	88.2	30	50 - 140	
4,4'-DDT	MS	1724840-12	ND	0.0049425	0.0049834	mg/kg		99.2		50 - 140	
	MSD	1724840-12	ND	0.0048339	0.0050847	mg/kg	2.2	95.1	30	50 - 140	
Dieldrin	MS	1724840-12	ND	0.0040259	0.0049834	mg/kg		80.8		40 - 140	
	MSD	1724840-12	ND	0.0040336	0.0050847	mg/kg	0.2	79.3	30	40 - 140	
Endrin	MS	1724840-12	ND	0.0040664	0.0049834	mg/kg		81.6		50 - 150	
	MSD	1724840-12	ND	0.0039898	0.0050847	mg/kg	1.9	78.5	30	50 - 150	
Heptachlor	MS	1724840-12	ND	0.0044482	0.0049834	mg/kg		89.3		60 - 140	
	MSD	1724840-12	ND	0.0043773	0.0050847	mg/kg	1.6	86.1	30	60 - 140	
TCMX (Surrogate)	MS	1724840-12	ND	0.0071365	0.0099668	mg/kg		71.6		20 - 130	
	MSD	1724840-12	ND	0.0073780	0.010169	mg/kg	3.3	72.6		20 - 130	
Decachlorobiphenyl (Surrogate)	MS	1724840-12	ND	0.015988	0.019934	mg/kg		80.2		40 - 130	
	MSD	1724840-12	ND	0.014750	0.020339	mg/kg	8.1	72.5		40 - 130	

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**Project Manager:** Kirk Henning

## Organo-Phosphorus Pesticide Analysis (EPA Method 8141A)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J1652</b>						
Azinphos methyl	B[J1652-BLK1	ND	mg/kg	0.010	0.0073	
Bolstar	B[J1652-BLK1	ND	mg/kg	0.010	0.0022	
Chlorpyrifos	B[J1652-BLK1	ND	mg/kg	0.010	0.0014	
Coumaphos	B[J1652-BLK1	ND	mg/kg	0.010	0.0081	
Demeton O/S	B[J1652-BLK1	ND	mg/kg	0.010	0.0034	
Diazinon	B[J1652-BLK1	ND	mg/kg	0.010	0.0024	
Dichlorvos	B[J1652-BLK1	ND	mg/kg	0.010	0.00091	
Disulfoton	B[J1652-BLK1	ND	mg/kg	0.010	0.0019	
Ethoprop	B[J1652-BLK1	ND	mg/kg	0.010	0.0012	
Fensulfothion	B[J1652-BLK1	ND	mg/kg	0.010	0.0056	
Fenthion	B[J1652-BLK1	ND	mg/kg	0.010	0.0021	
Merphos	B[J1652-BLK1	ND	mg/kg	0.010	0.0019	
Methyl parathion	B[J1652-BLK1	ND	mg/kg	0.010	0.0025	
Mevinphos	B[J1652-BLK1	ND	mg/kg	0.010	0.0024	
Naled	B[J1652-BLK1	ND	mg/kg	0.010	0.0043	
Phorate	B[J1652-BLK1	ND	mg/kg	0.010	0.0026	
Ronnel (Fenchlorphos)	B[J1652-BLK1	ND	mg/kg	0.010	0.0014	
Stirophos (Tetrachlorvinphos)	B[J1652-BLK1	ND	mg/kg	0.010	0.0020	
Tokuthion (Prothiofos)	B[J1652-BLK1	ND	mg/kg	0.010	0.0017	
Trichloronate	B[J1652-BLK1	ND	mg/kg	0.010	0.0013	
<b>Triphenylphosphate (Surrogate)</b>	<b>B[J1652-BLK1</b>	<b>96.6</b>	<b>%</b>	<b>40 - 120 (LCL - UCL)</b>		

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**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Organo-Phosphorus Pesticide Analysis (EPA Method 8141A)

### Quality Control Report - Laboratory Control Sample

								Control Limits		Lab
Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Percent Recovery	RPD	Quals
QC Batch ID: B[J1652										
Bolstar	B[J1652-BS1	LCS	0.065500	0.066667	mg/kg	98.2		50 - 130		
Chlorpyrifos	B[J1652-BS1	LCS	0.071833	0.066667	mg/kg	108		60 - 140		
Diazinon	B[J1652-BS1	LCS	0.069667	0.066667	mg/kg	104		40 - 120		
Methyl parathion	B[J1652-BS1	LCS	0.070333	0.066667	mg/kg	106		60 - 120		
Mevinphos	B[J1652-BS1	LCS	0.086500	0.066667	mg/kg	130		50 - 120		L07
Ronnel (Fenchlorphos)	B[J1652-BS1	LCS	0.071000	0.066667	mg/kg	106		50 - 120		
Stirophos (Tetrachlorvinphos)	B[J1652-BS1	LCS	0.074000	0.066667	mg/kg	111		60 - 140		
Triphenylphosphate (Surrogate)	B[J1652-BS1	LCS	0.090333	0.083333	mg/kg	108		40 - 120		

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**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Organo-Phosphorus Pesticide Analysis (EPA Method 8141A)

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J1652		Used client sample: N									
Bolstar	MS	1724840-57	ND	0.071186	0.067797	mg/kg		105		40 - 140	
	MSD	1724840-57	ND	0.068605	0.066445	mg/kg	3.7	103	30	40 - 140	
Chlorpyrifos	MS	1724840-57	ND	0.073051	0.067797	mg/kg		108		40 - 130	
	MSD	1724840-57	ND	0.072093	0.066445	mg/kg	1.3	108	30	40 - 130	
Diazinon	MS	1724840-57	ND	0.078305	0.067797	mg/kg		116		40 - 120	
	MSD	1724840-57	ND	0.071761	0.066445	mg/kg	8.7	108	30	40 - 120	
Methyl parathion	MS	1724840-57	ND	0.076102	0.067797	mg/kg		112		40 - 125	
	MSD	1724840-57	ND	0.074086	0.066445	mg/kg	2.7	112	30	40 - 125	
Mevinphos	MS	1724840-57	ND	0.099492	0.067797	mg/kg		147		40 - 140	Q03
	MSD	1724840-57	ND	0.095847	0.066445	mg/kg	3.7	144	30	40 - 140	Q03
Ronnel (Fenchlorphos)	MS	1724840-57	ND	0.073729	0.067797	mg/kg		109		40 - 120	
	MSD	1724840-57	ND	0.075415	0.066445	mg/kg	2.3	114	30	40 - 120	
Stirophos (Tetrachlorvinphos)	MS	1724840-57	ND	0.075593	0.067797	mg/kg		112		40 - 140	
	MSD	1724840-57	ND	0.072924	0.066445	mg/kg	3.6	110	30	40 - 140	
Triphenylphosphate (Surrogate)	MS	1724840-57	ND	0.090678	0.084746	mg/kg		107		40 - 120	
	MSD	1724840-57	ND	0.088372	0.083056	mg/kg	2.6	106		40 - 120	

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**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Chlorinated Herbicides (EPA Method 8151A)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J1645</b>						
2,4-D	B[J1645-BLK1	ND	mg/kg	0.020	0.0058	
2,4-DB	B[J1645-BLK1	ND	mg/kg	0.040	0.017	
Dalapon	B[J1645-BLK1	ND	mg/kg	0.050	0.034	
Dicamba	B[J1645-BLK1	ND	mg/kg	0.0020	0.0016	
Dichloroprop	B[J1645-BLK1	ND	mg/kg	0.020	0.0055	
Dinoseb	B[J1645-BLK1	ND	mg/kg	0.0070	0.0024	
2,4,5-T	B[J1645-BLK1	ND	mg/kg	0.0030	0.0013	
2,4,5-TP (Silvex)	B[J1645-BLK1	ND	mg/kg	0.0030	0.0012	
<b>2,4-Dichlorophenylacetic acid (Surrogate)</b>	<b>B[J1645-BLK1</b>	<b>74.5</b>	<b>%</b>	<b>40 - 120 (LCL - UCL)</b>		

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**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Chlorinated Herbicides (EPA Method 8151A)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	Quals
QC Batch ID: B[J1645										
2,4-D	B[J1645-BS1	LCS	0.054967	0.079470	mg/kg	69.2		50 - 120		
2,4-DB	B[J1645-BS1	LCS	0.13477	0.17881	mg/kg	75.4		50 - 120		
Dicamba	B[J1645-BS1	LCS	0.016225	0.019868	mg/kg	81.7		50 - 120		
Dichloroprop	B[J1645-BS1	LCS	0.056291	0.079470	mg/kg	70.8		50 - 120		
Dinoseb	B[J1645-BS1	LCS	0.032781	0.039735	mg/kg	82.5		50 - 120		
2,4,5-T	B[J1645-BS1	LCS	0.013907	0.019868	mg/kg	70.0		30 - 120		
2,4,5-TP (Silvex)	B[J1645-BS1	LCS	0.015232	0.019868	mg/kg	76.7		50 - 120		
2,4-Dichlorophenylacetic acid (Surrogate)	B[J1645-BS1	LCS	0.10132	0.13245	mg/kg	76.5		40 - 120		

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**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Chlorinated Herbicides (EPA Method 8151A)

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J1645		Used client sample: N									
2,4-D	MS	1724840-82	ND	0.049153	0.081356	mg/kg		60.4		40 - 120	
	MSD	1724840-82	ND	0.061873	0.080268	mg/kg	22.9	77.1	30	40 - 120	
2,4-DB	MS	1724840-82	ND	0.12441	0.18305	mg/kg		68.0		50 - 120	
	MSD	1724840-82	ND	0.15284	0.18060	mg/kg	20.5	84.6	30	50 - 120	
Dicamba	MS	1724840-82	ND	0.014915	0.020339	mg/kg		73.3		50 - 120	
	MSD	1724840-82	ND	0.016722	0.020067	mg/kg	11.4	83.3	30	50 - 120	
Dichloroprop	MS	1724840-82	ND	0.053559	0.081356	mg/kg		65.8		40 - 120	
	MSD	1724840-82	ND	0.067224	0.080268	mg/kg	22.6	83.8	30	40 - 120	
Dinoseb	MS	1724840-82	ND	0.031525	0.040678	mg/kg		77.5		40 - 130	
	MSD	1724840-82	ND	0.037458	0.040134	mg/kg	17.2	93.3	30	40 - 130	
2,4,5-T	MS	1724840-82	ND	0.012881	0.020339	mg/kg		63.3		30 - 120	
	MSD	1724840-82	ND	0.014716	0.020067	mg/kg	13.3	73.3	30	30 - 120	
2,4,5-TP (Silvex)	MS	1724840-82	ND	0.013559	0.020339	mg/kg		66.7		40 - 120	
	MSD	1724840-82	ND	0.017057	0.020067	mg/kg	22.8	85.0	30	40 - 120	
2,4-Dichlorophenylacetic acid (Surrogate	MS	1724840-82	ND	0.10305	0.13559	mg/kg		76.0		40 - 120	
	MSD	1724840-82	ND	0.10535	0.13378	mg/kg	2.2	78.7		40 - 120	

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**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Volatile Organic Analysis (EPA Method 8260B)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J1120</b>						
Benzene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0013	
Bromobenzene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0013	
Bromochloromethane	B[J1120-BLK1	ND	mg/kg	0.0050	0.00092	
Bromodichloromethane	B[J1120-BLK1	ND	mg/kg	0.0050	0.00084	
Bromoform	B[J1120-BLK1	ND	mg/kg	0.0050	0.0015	
Bromomethane	B[J1120-BLK1	ND	mg/kg	0.0050	0.0016	
n-Butylbenzene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0015	
sec-Butylbenzene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0012	
tert-Butylbenzene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0012	
Carbon tetrachloride	B[J1120-BLK1	ND	mg/kg	0.0050	0.0011	
Chlorobenzene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0013	
Chloroethane	B[J1120-BLK1	ND	mg/kg	0.0050	0.0014	
Chloroform	B[J1120-BLK1	ND	mg/kg	0.0050	0.00063	
Chloromethane	B[J1120-BLK1	ND	mg/kg	0.0050	0.0014	
2-Chlorotoluene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0018	
4-Chlorotoluene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0014	
Dibromochloromethane	B[J1120-BLK1	ND	mg/kg	0.0050	0.00099	
1,2-Dibromo-3-chloropropane	B[J1120-BLK1	ND	mg/kg	0.0050	0.0017	
1,2-Dibromoethane	B[J1120-BLK1	ND	mg/kg	0.0050	0.0010	
Dibromomethane	B[J1120-BLK1	ND	mg/kg	0.0050	0.0018	
1,2-Dichlorobenzene	B[J1120-BLK1	ND	mg/kg	0.0050	0.00081	
1,3-Dichlorobenzene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0014	
1,4-Dichlorobenzene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0015	
Dichlorodifluoromethane	B[J1120-BLK1	ND	mg/kg	0.0050	0.0013	
1,1-Dichloroethane	B[J1120-BLK1	ND	mg/kg	0.0050	0.0014	
1,2-Dichloroethane	B[J1120-BLK1	ND	mg/kg	0.0050	0.00085	
1,1-Dichloroethene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0012	
cis-1,2-Dichloroethene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0013	
trans-1,2-Dichloroethene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0014	
1,2-Dichloropropane	B[J1120-BLK1	ND	mg/kg	0.0050	0.00081	
1,3-Dichloropropane	B[J1120-BLK1	ND	mg/kg	0.0050	0.0011	
2,2-Dichloropropane	B[J1120-BLK1	ND	mg/kg	0.0050	0.0013	
1,1-Dichloropropene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0012	
cis-1,3-Dichloropropene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0011	

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**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Volatile Organic Analysis (EPA Method 8260B)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J1120</b>						
trans-1,3-Dichloropropene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0012	
Ethylbenzene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0015	
Hexachlorobutadiene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0017	
Isopropylbenzene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0013	
p-Isopropyltoluene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0013	
Methylene chloride	B[J1120-BLK1	ND	mg/kg	0.010	0.0024	
Methyl t-butyl ether	B[J1120-BLK1	ND	mg/kg	0.0050	0.00050	
Naphthalene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0014	
n-Propylbenzene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0013	
Styrene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0014	
1,1,1,2-Tetrachloroethane	B[J1120-BLK1	ND	mg/kg	0.0050	0.0011	
1,1,2,2-Tetrachloroethane	B[J1120-BLK1	ND	mg/kg	0.0050	0.0011	
Tetrachloroethene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0013	
Toluene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0012	
1,2,3-Trichlorobenzene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0021	
1,2,4-Trichlorobenzene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0020	
1,1,1-Trichloroethane	B[J1120-BLK1	ND	mg/kg	0.0050	0.0011	
1,1,2-Trichloroethane	B[J1120-BLK1	ND	mg/kg	0.0050	0.00077	
Trichloroethene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0011	
Trichlorofluoromethane	B[J1120-BLK1	ND	mg/kg	0.0050	0.0011	
1,2,3-Trichloropropane	B[J1120-BLK1	ND	mg/kg	0.0050	0.0016	
1,1,2-Trichloro-1,2,2-trifluoroethane	B[J1120-BLK1	ND	mg/kg	0.0050	0.0013	
1,2,4-Trimethylbenzene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0013	
1,3,5-Trimethylbenzene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0015	
Vinyl chloride	B[J1120-BLK1	ND	mg/kg	0.0050	0.0016	
Total Xylenes	B[J1120-BLK1	ND	mg/kg	0.010	0.0034	
p- & m-Xylenes	B[J1120-BLK1	ND	mg/kg	0.0050	0.0022	
o-Xylene	B[J1120-BLK1	ND	mg/kg	0.0050	0.0012	
<b>1,2-Dichloroethane-d4 (Surrogate)</b>	<b>B[J1120-BLK1</b>	<b>92.7</b>	<b>%</b>	<b>70 - 121 (LCL - UCL)</b>		
<b>Toluene-d8 (Surrogate)</b>	<b>B[J1120-BLK1</b>	<b>95.4</b>	<b>%</b>	<b>81 - 117 (LCL - UCL)</b>		
<b>4-Bromofluorobenzene (Surrogate)</b>	<b>B[J1120-BLK1</b>	<b>104</b>	<b>%</b>	<b>74 - 121 (LCL - UCL)</b>		

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**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Volatile Organic Analysis (EPA Method 8260B)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: B[J1120										
Benzene	B[J1120-BS1	LCS	0.10298	0.12500	mg/kg	82.4		70 - 130		
Bromodichloromethane	B[J1120-BS1	LCS	0.12757	0.12500	mg/kg	102		70 - 130		
Chlorobenzene	B[J1120-BS1	LCS	0.12842	0.12500	mg/kg	103		70 - 130		
Chloroethane	B[J1120-BS1	LCS	0.10285	0.12500	mg/kg	82.3		70 - 130		
1,4-Dichlorobenzene	B[J1120-BS1	LCS	0.13511	0.12500	mg/kg	108		70 - 130		
1,1-Dichloroethane	B[J1120-BS1	LCS	0.10361	0.12500	mg/kg	82.9		70 - 130		
1,1-Dichloroethene	B[J1120-BS1	LCS	0.11447	0.12500	mg/kg	91.6		70 - 130		
Toluene	B[J1120-BS1	LCS	0.12145	0.12500	mg/kg	97.2		70 - 130		
Trichloroethene	B[J1120-BS1	LCS	0.12129	0.12500	mg/kg	97.0		70 - 130		
1,2-Dichloroethane-d4 (Surrogate)	B[J1120-BS1	LCS	0.045330	0.050000	mg/kg	90.7		70 - 121		
Toluene-d8 (Surrogate)	B[J1120-BS1	LCS	0.048620	0.050000	mg/kg	97.2		81 - 117		
4-Bromofluorobenzene (Surrogate)	B[J1120-BS1	LCS	0.050870	0.050000	mg/kg	102		74 - 121		

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**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Volatile Organic Analysis (EPA Method 8260B)

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J1120]		Used client sample: N									
Benzene	MS	1728746-03	ND	0.10481	0.12500	mg/kg		83.8		70 - 130	
	MSD	1728746-03	ND	0.093550	0.12500	mg/kg	11.4	74.8	20	70 - 130	
Bromodichloromethane	MS	1728746-03	ND	0.13505	0.12500	mg/kg		108		70 - 130	
	MSD	1728746-03	ND	0.12645	0.12500	mg/kg	6.6	101	20	70 - 130	
Chlorobenzene	MS	1728746-03	ND	0.12816	0.12500	mg/kg		103		70 - 130	
	MSD	1728746-03	ND	0.12785	0.12500	mg/kg	0.2	102	20	70 - 130	
Chloroethane	MS	1728746-03	ND	0.10287	0.12500	mg/kg		82.3		70 - 130	
	MSD	1728746-03	ND	0.095520	0.12500	mg/kg	7.4	76.4	20	70 - 130	
1,4-Dichlorobenzene	MS	1728746-03	ND	0.14221	0.12500	mg/kg		114		70 - 130	
	MSD	1728746-03	ND	0.13986	0.12500	mg/kg	1.7	112	20	70 - 130	
1,1-Dichloroethane	MS	1728746-03	ND	0.10800	0.12500	mg/kg		86.4		70 - 130	
	MSD	1728746-03	ND	0.10512	0.12500	mg/kg	2.7	84.1	20	70 - 130	
1,1-Dichloroethene	MS	1728746-03	ND	0.11730	0.12500	mg/kg		93.8		70 - 130	
	MSD	1728746-03	ND	0.10796	0.12500	mg/kg	8.3	86.4	20	70 - 130	
Toluene	MS	1728746-03	ND	0.12884	0.12500	mg/kg		103		70 - 130	
	MSD	1728746-03	ND	0.11569	0.12500	mg/kg	10.8	92.6	20	70 - 130	
Trichloroethene	MS	1728746-03	ND	0.13151	0.12500	mg/kg		105		70 - 130	
	MSD	1728746-03	ND	0.11586	0.12500	mg/kg	12.7	92.7	20	70 - 130	
1,2-Dichloroethane-d4 (Surrogate)	MS	1728746-03	ND	0.048790	0.050000	mg/kg		97.6		70 - 121	
	MSD	1728746-03	ND	0.045210	0.050000	mg/kg	7.6	90.4		70 - 121	
Toluene-d8 (Surrogate)	MS	1728746-03	ND	0.050870	0.050000	mg/kg		102		81 - 117	
	MSD	1728746-03	ND	0.048990	0.050000	mg/kg	3.8	98.0		81 - 117	
4-Bromofluorobenzene (Surrogate)	MS	1728746-03	ND	0.052760	0.050000	mg/kg		106		74 - 121	
	MSD	1728746-03	ND	0.055900	0.050000	mg/kg	5.8	112		74 - 121	

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**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J1535]</b>						
Acenaphthene	B[J1535-BLK1	ND	mg/kg	0.0030	0.0012	
Acenaphthylene	B[J1535-BLK1	ND	mg/kg	0.0030	0.0011	
Anthracene	B[J1535-BLK1	ND	mg/kg	0.0030	0.0012	
Benzo[a]anthracene	B[J1535-BLK1	ND	mg/kg	0.0030	0.0011	
Benzo[b]fluoranthene	B[J1535-BLK1	ND	mg/kg	0.0030	0.00095	
Benzo[k]fluoranthene	B[J1535-BLK1	ND	mg/kg	0.0030	0.0011	
Benzo[a]pyrene	B[J1535-BLK1	ND	mg/kg	0.0030	0.00095	
Benzo[g,h,i]perylene	B[J1535-BLK1	ND	mg/kg	0.0030	0.0011	
Chrysene	B[J1535-BLK1	ND	mg/kg	0.0030	0.00097	
Dibenzo[a,h]anthracene	B[J1535-BLK1	ND	mg/kg	0.0030	0.00099	
Fluoranthene	B[J1535-BLK1	ND	mg/kg	0.0030	0.0014	
Fluorene	B[J1535-BLK1	ND	mg/kg	0.0030	0.0011	
Indeno[1,2,3-cd]pyrene	B[J1535-BLK1	ND	mg/kg	0.0030	0.00092	
Naphthalene	B[J1535-BLK1	ND	mg/kg	0.0030	0.0011	
Phenanthrene	B[J1535-BLK1	ND	mg/kg	0.0030	0.0012	
Pyrene	B[J1535-BLK1	ND	mg/kg	0.0030	0.0015	
<b>Nitrobenzene-d5 (Surrogate)</b>	<b>B[J1535-BLK1</b>	<b>58.3</b>	<b>%</b>	<b>30 - 110 (LCL - UCL)</b>		
<b>2-Fluorobiphenyl (Surrogate)</b>	<b>B[J1535-BLK1</b>	<b>58.8</b>	<b>%</b>	<b>40 - 120 (LCL - UCL)</b>		
<b>p-Terphenyl-d14 (Surrogate)</b>	<b>B[J1535-BLK1</b>	<b>63.6</b>	<b>%</b>	<b>30 - 120 (LCL - UCL)</b>		

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**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: B[J1535										
Acenaphthene	B[J1535-BS1	LCS	0.022953	0.033557	mg/kg	68.4		60 - 130		
Acenaphthylene	B[J1535-BS1	LCS	0.022953	0.033557	mg/kg	68.4		60 - 130		
Anthracene	B[J1535-BS1	LCS	0.025185	0.033557	mg/kg	75.0		60 - 130		
Benzo[a]anthracene	B[J1535-BS1	LCS	0.026779	0.033557	mg/kg	79.8		60 - 130		
Benzo[b]fluoranthene	B[J1535-BS1	LCS	0.029966	0.033557	mg/kg	89.3		50 - 130		
Benzo[k]fluoranthene	B[J1535-BS1	LCS	0.023909	0.033557	mg/kg	71.3		60 - 130		
Benzo[a]pyrene	B[J1535-BS1	LCS	0.022953	0.033557	mg/kg	68.4		60 - 130		
Benzo[g,h,i]perylene	B[J1535-BS1	LCS	0.024866	0.033557	mg/kg	74.1		50 - 130		
Chrysene	B[J1535-BS1	LCS	0.023909	0.033557	mg/kg	71.3		50 - 130		
Dibenzo[a,h]anthracene	B[J1535-BS1	LCS	0.026141	0.033557	mg/kg	77.9		50 - 130		
Fluoranthene	B[J1535-BS1	LCS	0.026141	0.033557	mg/kg	77.9		60 - 130		
Fluorene	B[J1535-BS1	LCS	0.026779	0.033557	mg/kg	79.8		50 - 130		
Indeno[1,2,3-cd]pyrene	B[J1535-BS1	LCS	0.025185	0.033557	mg/kg	75.0		50 - 130		
Naphthalene	B[J1535-BS1	LCS	0.022315	0.033557	mg/kg	66.5		50 - 130		
Phenanthrene	B[J1535-BS1	LCS	0.024866	0.033557	mg/kg	74.1		50 - 130		
Pyrene	B[J1535-BS1	LCS	0.024228	0.033557	mg/kg	72.2		50 - 130		
Nitrobenzene-d5 (Surrogate)	B[J1535-BS1	LCS	0.070453	0.13423	mg/kg	52.5		30 - 110		
2-Fluorobiphenyl (Surrogate)	B[J1535-BS1	LCS	0.067584	0.13423	mg/kg	50.3		40 - 120		
p-Terphenyl-d14 (Surrogate)	B[J1535-BS1	LCS	0.067265	0.13423	mg/kg	50.1		30 - 120		

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**Project Manager:** Kirk Henning

## Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J1535		Used client sample: N									
Acenaphthene	MS	1724840-19	ND	0.025654	0.033223	mg/kg		77.2		50 - 130	
	MSD	1724840-19	ND	0.021557	0.033841	mg/kg	17.4	63.7	30	50 - 130	
Acenaphthylene	MS	1724840-19	ND	0.025654	0.033223	mg/kg		77.2		50 - 130	
	MSD	1724840-19	ND	0.021888	0.033841	mg/kg	15.8	64.7	30	50 - 130	
Anthracene	MS	1724840-19	ND	0.027299	0.033223	mg/kg		82.2		50 - 130	
	MSD	1724840-19	ND	0.024210	0.033841	mg/kg	12.0	71.5	30	50 - 130	
Benzo[a]anthracene	MS	1724840-19	ND	0.028944	0.033223	mg/kg		87.1		50 - 130	
	MSD	1724840-19	ND	0.025205	0.033841	mg/kg	13.8	74.5	30	50 - 130	
Benzo[b]fluoranthene	MS	1724840-19	ND	0.032890	0.033223	mg/kg		99.0		40 - 130	
	MSD	1724840-19	ND	0.029848	0.033841	mg/kg	9.7	88.2	30	40 - 130	
Benzo[k]fluoranthene	MS	1724840-19	ND	0.026312	0.033223	mg/kg		79.2		40 - 130	
	MSD	1724840-19	ND	0.023878	0.033841	mg/kg	9.7	70.6	30	40 - 130	
Benzo[a]pyrene	MS	1724840-19	ND	0.023023	0.033223	mg/kg		69.3		40 - 130	
	MSD	1724840-19	ND	0.022552	0.033841	mg/kg	2.1	66.6	30	40 - 130	
Benzo[g,h,i]perylene	MS	1724840-19	ND	0.026312	0.033223	mg/kg		79.2		40 - 130	
	MSD	1724840-19	ND	0.023878	0.033841	mg/kg	9.7	70.6	30	40 - 130	
Chrysene	MS	1724840-19	ND	0.025983	0.033223	mg/kg		78.2		40 - 130	
	MSD	1724840-19	ND	0.022552	0.033841	mg/kg	14.1	66.6	30	40 - 130	
Dibenzo[a,h]anthracene	MS	1724840-19	ND	0.027299	0.033223	mg/kg		82.2		40 - 130	
	MSD	1724840-19	ND	0.025536	0.033841	mg/kg	6.7	75.5	30	40 - 130	
Fluoranthene	MS	1724840-19	ND	0.027957	0.033223	mg/kg		84.2		40 - 130	
	MSD	1724840-19	ND	0.023878	0.033841	mg/kg	15.7	70.6	30	40 - 130	
Fluorene	MS	1724840-19	ND	0.028944	0.033223	mg/kg		87.1		40 - 130	
	MSD	1724840-19	ND	0.025868	0.033841	mg/kg	11.2	76.4	30	40 - 130	
Indeno[1,2,3-cd]pyrene	MS	1724840-19	ND	0.026641	0.033223	mg/kg		80.2		30 - 130	
	MSD	1724840-19	ND	0.024210	0.033841	mg/kg	9.6	71.5	30	30 - 130	
Naphthalene	MS	1724840-19	ND	0.024010	0.033223	mg/kg		72.3		50 - 130	
	MSD	1724840-19	ND	0.021225	0.033841	mg/kg	12.3	62.7	30	50 - 130	
Phenanthrene	MS	1724840-19	ND	0.027299	0.033223	mg/kg		82.2		40 - 130	
	MSD	1724840-19	ND	0.023215	0.033841	mg/kg	16.2	68.6	30	40 - 130	
Pyrene	MS	1724840-19	ND	0.026970	0.033223	mg/kg		81.2		40 - 130	
	MSD	1724840-19	ND	0.022552	0.033841	mg/kg	17.8	66.6	30	40 - 130	
Nitrobenzene-d5 (Surrogate)	MS	1724840-19	ND	0.073017	0.13289	mg/kg		54.9		30 - 110	
	MSD	1724840-19	ND	0.060359	0.13536	mg/kg	19.0	44.6		30 - 110	
2-Fluorobiphenyl (Surrogate)	MS	1724840-19	ND	0.074990	0.13289	mg/kg		56.4		40 - 120	
	MSD	1724840-19	ND	0.063012	0.13536	mg/kg	17.4	46.6		40 - 120	

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**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source	Source	Result	Spike	Units	RPD	Percent	Percent	Lab	
		Sample ID	Result					Added	Recovery		Recovery
QC Batch ID: B[J1535		Used client sample: N									
p-Terphenyl-d14 (Surrogate)	MS	1724840-19	ND	0.075977	0.13289	mg/kg		57.2		30 - 120	
	MSD	1724840-19	ND	0.063675	0.13536	mg/kg	17.6	47.0		30 - 120	



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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J1688</b>						
TPH - Gasoline	B[J1688-BLK1	ND	mg/kg	20	5.0	
TPH - Diesel (FFP)	B[J1688-BLK1	ND	mg/kg	10	1.2	
TPH - Motor Oil	B[J1688-BLK1	ND	mg/kg	20	6.5	
<b>Tetracosane (Surrogate)</b>	<b>B[J1688-BLK1</b>	<b>71.8</b>	<b>%</b>	<b>20 - 145 (LCL - UCL)</b>		

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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: B[J1688										
TPH - Diesel (FFP)	B[J1688-BS1	LCS	76.459	83.333	mg/kg	91.8		64 - 124		
Tetracosane (Surrogate)	B[J1688-BS1	LCS	3.0583	3.3347	mg/kg	91.7		20 - 145		



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**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J1688		Used client sample: Y - Description: HA-26-13.0, 10/04/2017 11:47									
TPH - Diesel (FFP)	MS	1728588-14	ND	64.351	84.746	mg/kg		75.9		52 - 131	
	MSD	1728588-14	ND	52.383	84.175	mg/kg	20.5	62.2	30	52 - 131	
Tetracosane (Surrogate)	MS	1728588-14	ND	2.4642	3.3912	mg/kg		72.7		20 - 145	
	MSD	1728588-14	ND	2.2673	3.3684	mg/kg	8.3	67.3		20 - 145	

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**Project:** Former Northern Landfill  
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**Project Manager:** Kirk Henning

## Chemical Analysis

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J1417</b>						
Total Cyanide	B[J1417-BLK1	ND	mg/kg	0.50	0.15	
<b>QC Batch ID: B[J1677</b>						
pH	B[J1677-BLK1	ND	pH Units	0.05	0.05	
pH Measurement Temperature	B[J1677-BLK1	ND	C	0.1	0.1	

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**Project Manager:** Kirk Henning

## Chemical Analysis

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: B[J1417										
Total Cyanide	B[J1417-BS1	LCS	13.591	13.889	mg/kg	97.9		80 - 120		
QC Batch ID: B[J1677										
pH	B[J1677-BS1	LCS	4.0170	4.0000	pH Units	100		95 - 105		

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**Project Manager:** Kirk Henning

## Chemical Analysis

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J1417]		Used client sample: Y - Description: HA-37(a)-5.0, 10/04/2017 08:10									
Total Cyanide	DUP	1728588-10	0.20434	0.25890		mg/kg	23.6		20		J,A02
	MS	1728588-10	0.20434	7.0581	9.2593	mg/kg		74.0		80 - 120	Q03
	MSD	1728588-10	0.20434	6.6068	9.6154	mg/kg	6.6	66.6	20	80 - 120	Q03
QC Batch ID: B[J1677]		Used client sample: N									
pH	DUP	1728273-01	12.634	12.634		pH Units	0		20		

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**Reported:** 04/02/2018 11:34  
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**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Concentrations (TTLC)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
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#### QC Batch ID: B[J1201

Total Hexavalent Chromium	B[J1201-BLK1	ND	mg/kg	1.0	0.30	
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#### QC Batch ID: B[J1454

Mercury	B[J1454-BLK1	ND	mg/kg	0.16	0.019	
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#### QC Batch ID: B[J1863

Antimony	B[J1863-BLK1	ND	mg/kg	5.0	0.33	
Arsenic	B[J1863-BLK1	ND	mg/kg	1.0	0.40	
Barium	B[J1863-BLK1	ND	mg/kg	0.50	0.18	
Beryllium	B[J1863-BLK1	ND	mg/kg	0.50	0.047	
Cadmium	B[J1863-BLK1	ND	mg/kg	0.50	0.052	
<b>Chromium</b>	<b>B[J1863-BLK1</b>	<b>0.083387</b>	<b>mg/kg</b>	<b>0.50</b>	<b>0.050</b>	<b>J</b>
Cobalt	B[J1863-BLK1	ND	mg/kg	2.5	0.098	
Copper	B[J1863-BLK1	ND	mg/kg	1.0	0.050	
Lead	B[J1863-BLK1	ND	mg/kg	2.5	0.28	
<b>Molybdenum</b>	<b>B[J1863-BLK1</b>	<b>0.30320</b>	<b>mg/kg</b>	<b>2.5</b>	<b>0.050</b>	<b>J</b>
Nickel	B[J1863-BLK1	ND	mg/kg	0.50	0.15	
Selenium	B[J1863-BLK1	ND	mg/kg	1.0	0.98	
Silver	B[J1863-BLK1	ND	mg/kg	0.50	0.067	
Thallium	B[J1863-BLK1	ND	mg/kg	5.0	0.64	
Vanadium	B[J1863-BLK1	ND	mg/kg	0.50	0.11	
<b>Zinc</b>	<b>B[J1863-BLK1</b>	<b>0.30539</b>	<b>mg/kg</b>	<b>2.5</b>	<b>0.087</b>	<b>J</b>

#### QC Batch ID: B006519

Mercury	B006519-BLK1	ND	mg/kg	0.16	0.019	
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#### QC Batch ID: B006562

Antimony	B006562-BLK1	ND	mg/kg	5.0	0.33	
Arsenic	B006562-BLK1	ND	mg/kg	1.0	0.40	
Barium	B006562-BLK1	ND	mg/kg	0.50	0.18	
Beryllium	B006562-BLK1	ND	mg/kg	0.50	0.047	
Cadmium	B006562-BLK1	ND	mg/kg	0.50	0.052	
<b>Chromium</b>	<b>B006562-BLK1</b>	<b>0.15707</b>	<b>mg/kg</b>	<b>0.50</b>	<b>0.050</b>	<b>J</b>
Cobalt	B006562-BLK1	ND	mg/kg	2.5	0.098	
Copper	B006562-BLK1	ND	mg/kg	1.0	0.050	
Lead	B006562-BLK1	ND	mg/kg	2.5	0.28	

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 04/02/2018 11:34  
Project: Former Northern Landfill  
Project Number: [none]  
Project Manager: Kirk Henning

## Total Concentrations (TTLC)

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B006562</b>						
<b>Molybdenum</b>	<b>B006562-BLK1</b>	<b>0.058736</b>	<b>mg/kg</b>	<b>2.5</b>	<b>0.050</b>	<b>J</b>
Nickel	B006562-BLK1	ND	mg/kg	0.50	0.15	
Selenium	B006562-BLK1	ND	mg/kg	1.0	0.98	
Silver	B006562-BLK1	ND	mg/kg	0.50	0.067	
Thallium	B006562-BLK1	ND	mg/kg	5.0	0.64	
Vanadium	B006562-BLK1	ND	mg/kg	0.50	0.11	
<b>Zinc</b>	<b>B006562-BLK1</b>	<b>1.1125</b>	<b>mg/kg</b>	<b>2.5</b>	<b>0.087</b>	<b>J</b>
<b>QC Batch ID: B006616</b>						
Total Hexavalent Chromium	B006616-BLK1	ND	mg/kg	1.0	0.30	

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San Luis Obispo, CA 93401

**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Concentrations (TTLC)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab Quals
								Percent Recovery	RPD	
QC Batch ID: B[J1201										
Total Hexavalent Chromium	B[J1201-BS1	LCS	41.856	40.000	mg/kg	105		80 - 120		
QC Batch ID: B[J1454										
Mercury	B[J1454-BS1	LCS	0.86848	0.80000	mg/kg	109		80 - 120		
QC Batch ID: B[J1863										
Antimony	B[J1863-BS1	LCS	98.984	100.00	mg/kg	99.0		75 - 125		
Arsenic	B[J1863-BS1	LCS	11.235	10.000	mg/kg	112		75 - 125		
Barium	B[J1863-BS1	LCS	107.03	100.00	mg/kg	107		75 - 125		
Beryllium	B[J1863-BS1	LCS	10.696	10.000	mg/kg	107		75 - 125		
Cadmium	B[J1863-BS1	LCS	9.8942	10.000	mg/kg	98.9		75 - 125		
Chromium	B[J1863-BS1	LCS	101.56	100.00	mg/kg	102		75 - 125		
Cobalt	B[J1863-BS1	LCS	102.88	100.00	mg/kg	103		75 - 125		
Copper	B[J1863-BS1	LCS	101.52	100.00	mg/kg	102		75 - 125		
Lead	B[J1863-BS1	LCS	105.40	100.00	mg/kg	105		75 - 125		
Molybdenum	B[J1863-BS1	LCS	104.00	100.00	mg/kg	104		75 - 125		
Nickel	B[J1863-BS1	LCS	105.98	100.00	mg/kg	106		75 - 125		
Selenium	B[J1863-BS1	LCS	8.6412	10.000	mg/kg	86.4		75 - 125		
Silver	B[J1863-BS1	LCS	8.8562	10.000	mg/kg	88.6		75 - 125		
Thallium	B[J1863-BS1	LCS	108.62	100.00	mg/kg	109		75 - 125		
Vanadium	B[J1863-BS1	LCS	98.453	100.00	mg/kg	98.5		75 - 125		
Zinc	B[J1863-BS1	LCS	99.207	100.00	mg/kg	99.2		75 - 125		
QC Batch ID: B006519										
Mercury	B006519-BS1	LCS	0.80624	0.80000	mg/kg	101		80 - 120		
QC Batch ID: B006562										
Antimony	B006562-BS1	LCS	102.63	100.00	mg/kg	103		75 - 125		
Arsenic	B006562-BS1	LCS	9.4294	10.000	mg/kg	94.3		75 - 125		
Barium	B006562-BS1	LCS	102.36	100.00	mg/kg	102		75 - 125		
Beryllium	B006562-BS1	LCS	9.9327	10.000	mg/kg	99.3		75 - 125		
Cadmium	B006562-BS1	LCS	9.8321	10.000	mg/kg	98.3		75 - 125		
Chromium	B006562-BS1	LCS	105.80	100.00	mg/kg	106		75 - 125		
Cobalt	B006562-BS1	LCS	102.51	100.00	mg/kg	103		75 - 125		
Copper	B006562-BS1	LCS	98.262	100.00	mg/kg	98.3		75 - 125		
Lead	B006562-BS1	LCS	101.72	100.00	mg/kg	102		75 - 125		
Molybdenum	B006562-BS1	LCS	101.20	100.00	mg/kg	101		75 - 125		

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San Luis Obispo, CA 93401

**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Concentrations (TTLC)

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: B006562										
Nickel	B006562-BS1	LCS	103.96	100.00	mg/kg	104		75 - 125		
Selenium	B006562-BS1	LCS	8.6322	10.000	mg/kg	86.3		75 - 125		
Silver	B006562-BS1	LCS	9.3710	10.000	mg/kg	93.7		75 - 125		
Thallium	B006562-BS1	LCS	114.14	100.00	mg/kg	114		75 - 125		
Vanadium	B006562-BS1	LCS	103.83	100.00	mg/kg	104		75 - 125		
Zinc	B006562-BS1	LCS	98.961	100.00	mg/kg	99.0		75 - 125		
QC Batch ID: B006616										
Total Hexavalent Chromium	B006616-BS1	LCS	41.778	40.000	mg/kg	104		80 - 120		

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3437 Empresa Drive, Suite A  
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San Luis Obispo, CA 93401

**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Concentrations (TTLC)

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J1201]		Used client sample: N									
Total Hexavalent Chromium	DUP	1728353-57	3.3800	3.4000		mg/kg	0.6		20		J
	MS	1728353-57	3.3800	42.220	40.000	mg/kg		97.1		75 - 125	
	MSD	1728353-57	3.3800	42.462	40.000	mg/kg	0.6	97.7	20	75 - 125	
QC Batch ID: B[J1454]		Used client sample: N									
Mercury	DUP	1728837-01	0.14554	0.040308		mg/kg	113		20		J,A02
	MS	1728837-01	0.14554	0.96585	0.76923	mg/kg		107		80 - 120	
	MSD	1728837-01	0.14554	0.82231	0.76923	mg/kg	16.1	88.0	20	80 - 120	
QC Batch ID: B[J1863]		Used client sample: N									
Antimony	DUP	1728337-03	1.2502	ND		mg/kg			20		
	MS	1728337-03	1.2502	22.918	100.00	mg/kg		21.7		16 - 119	
	MSD	1728337-03	1.2502	20.514	100.00	mg/kg	11.1	19.3	20	16 - 119	
Arsenic	DUP	1728337-03	6.6190	5.2440		mg/kg	23.2		20		Q01
	MS	1728337-03	6.6190	16.495	10.000	mg/kg		98.8		75 - 125	
	MSD	1728337-03	6.6190	13.923	10.000	mg/kg	16.9	73.0	20	75 - 125	Q03
Barium	DUP	1728337-03	120.61	124.57		mg/kg	3.2		20		
	MS	1728337-03	120.61	217.13	100.00	mg/kg		96.5		75 - 125	
	MSD	1728337-03	120.61	216.22	100.00	mg/kg	0.4	95.6	20	75 - 125	
Beryllium	DUP	1728337-03	0.33091	0.33669		mg/kg	1.7		20		J
	MS	1728337-03	0.33091	9.5756	10.000	mg/kg		92.4		75 - 125	
	MSD	1728337-03	0.33091	9.7413	10.000	mg/kg	1.7	94.1	20	75 - 125	
Cadmium	DUP	1728337-03	0.055926	0.11055		mg/kg	65.6		20		J,A02
	MS	1728337-03	0.055926	8.7012	10.000	mg/kg		86.5		75 - 125	
	MSD	1728337-03	0.055926	8.7280	10.000	mg/kg	0.3	86.7	20	75 - 125	
Chromium	DUP	1728337-03	31.268	31.588		mg/kg	1.0		20		
	MS	1728337-03	31.268	120.66	100.00	mg/kg		89.4		75 - 125	
	MSD	1728337-03	31.268	122.46	100.00	mg/kg	1.5	91.2	20	75 - 125	
Cobalt	DUP	1728337-03	8.6705	9.1856		mg/kg	5.8		20		
	MS	1728337-03	8.6705	95.272	100.00	mg/kg		86.6		75 - 125	
	MSD	1728337-03	8.6705	96.895	100.00	mg/kg	1.7	88.2	20	75 - 125	
Copper	DUP	1728337-03	12.830	13.422		mg/kg	4.5		20		
	MS	1728337-03	12.830	105.36	100.00	mg/kg		92.5		75 - 125	
	MSD	1728337-03	12.830	107.03	100.00	mg/kg	1.6	94.2	20	75 - 125	
Lead	DUP	1728337-03	4.5777	4.8221		mg/kg	5.2		20		
	MS	1728337-03	4.5777	92.402	100.00	mg/kg		87.8		75 - 125	
	MSD	1728337-03	4.5777	92.341	100.00	mg/kg	0.1	87.8	20	75 - 125	
Molybdenum	DUP	1728337-03	1.6750	1.4682		mg/kg	13.2		20		J
	MS	1728337-03	1.6750	82.672	100.00	mg/kg		81.0		75 - 125	
	MSD	1728337-03	1.6750	82.508	100.00	mg/kg	0.2	80.8	20	75 - 125	

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

Reported: 04/02/2018 11:34  
Project: Former Northern Landfill  
Project Number: [none]  
Project Manager: Kirk Henning

## Total Concentrations (TTLC)

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J1863		Used client sample: N									
Nickel	DUP	1728337-03	50.481	52.272		mg/kg	3.5		20		
	MS	1728337-03	50.481	141.71	100.00	mg/kg		91.2		75 - 125	
	MSD	1728337-03	50.481	141.37	100.00	mg/kg	0.2	90.9	20	75 - 125	
Selenium	DUP	1728337-03	5.8753	4.6208		mg/kg	23.9		20		Q01
	MS	1728337-03	5.8753	10.536	10.000	mg/kg		46.6		75 - 125	Q03
	MSD	1728337-03	5.8753	12.960	10.000	mg/kg	20.6	70.9	20	75 - 125	Q02,Q03
Silver	DUP	1728337-03	ND	ND		mg/kg			20		
	MS	1728337-03	ND	8.0951	10.000	mg/kg		81.0		75 - 125	
	MSD	1728337-03	ND	8.2671	10.000	mg/kg	2.1	82.7	20	75 - 125	
Thallium	DUP	1728337-03	ND	ND		mg/kg			20		
	MS	1728337-03	ND	87.364	100.00	mg/kg		87.4		75 - 125	
	MSD	1728337-03	ND	86.964	100.00	mg/kg	0.5	87.0	20	75 - 125	
Vanadium	DUP	1728337-03	29.774	29.955		mg/kg	0.6		20		
	MS	1728337-03	29.774	116.64	100.00	mg/kg		86.9		75 - 125	
	MSD	1728337-03	29.774	118.55	100.00	mg/kg	1.6	88.8	20	75 - 125	
Zinc	DUP	1728337-03	32.674	33.989		mg/kg	3.9		20		
	MS	1728337-03	32.674	117.42	100.00	mg/kg		84.7		75 - 125	
	MSD	1728337-03	32.674	118.87	100.00	mg/kg	1.2	86.2	20	75 - 125	
QC Batch ID: B006519		Used client sample: N									
Mercury	DUP	1806528-01	ND	ND		mg/kg			20		
	MS	1806528-01	ND	0.76046	0.76923	mg/kg		98.9		80 - 120	
	MSD	1806528-01	ND	0.75415	0.76923	mg/kg	0.8	98.0	20	80 - 120	
QC Batch ID: B006562		Used client sample: Y - Description: HA-26-3, 09/25/2017 09:50									
Antimony	DUP	1727086-09	ND	ND		mg/kg			20		
	MS	1727086-09	ND	43.321	100.00	mg/kg		43.3		16 - 119	
	MSD	1727086-09	ND	43.436	100.00	mg/kg	0.3	43.4	20	16 - 119	
Arsenic	DUP	1727086-09	1.8491	1.9970		mg/kg	7.7		20		
	MS	1727086-09	1.8491	11.450	10.000	mg/kg		96.0		75 - 125	
	MSD	1727086-09	1.8491	10.762	10.000	mg/kg	6.2	89.1	20	75 - 125	
Barium	DUP	1727086-09	15.199	14.837		mg/kg	2.4		20		
	MS	1727086-09	15.199	116.95	100.00	mg/kg		102		75 - 125	
	MSD	1727086-09	15.199	106.59	100.00	mg/kg	9.3	91.4	20	75 - 125	
Beryllium	DUP	1727086-09	0.12619	0.11818		mg/kg	6.6		20		J
	MS	1727086-09	0.12619	9.5686	10.000	mg/kg		94.4		75 - 125	
	MSD	1727086-09	0.12619	9.3158	10.000	mg/kg	2.7	91.9	20	75 - 125	
Cadmium	DUP	1727086-09	0.20526	0.23397		mg/kg	13.1		20		J
	MS	1727086-09	0.20526	9.5803	10.000	mg/kg		93.8		75 - 125	
	MSD	1727086-09	0.20526	9.2790	10.000	mg/kg	3.2	90.7	20	75 - 125	

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Reported: 04/02/2018 11:34  
Project: Former Northern Landfill  
Project Number: [none]  
Project Manager: Kirk Henning

## Total Concentrations (TTLC)

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B006562		Used client sample: Y - Description: HA-26-3, 09/25/2017 09:50									
Chromium	DUP	1727086-09	8.7689	10.117		mg/kg	14.3		20		
	MS	1727086-09	8.7689	110.59	100.00	mg/kg		102		75 - 125	
	MSD	1727086-09	8.7689	108.25	100.00	mg/kg	2.1	99.5	20	75 - 125	
Cobalt	DUP	1727086-09	1.2854	1.4551		mg/kg	12.4		20		J
	MS	1727086-09	1.2854	96.730	100.00	mg/kg		95.4		75 - 125	
	MSD	1727086-09	1.2854	96.139	100.00	mg/kg	0.6	94.9	20	75 - 125	
Copper	DUP	1727086-09	2.4479	2.7428		mg/kg	11.4		20		
	MS	1727086-09	2.4479	96.584	100.00	mg/kg		94.1		75 - 125	
	MSD	1727086-09	2.4479	92.927	100.00	mg/kg	3.9	90.5	20	75 - 125	
Lead	DUP	1727086-09	2.3324	2.7673		mg/kg	17.1		20		
	MS	1727086-09	2.3324	104.31	100.00	mg/kg		102		75 - 125	
	MSD	1727086-09	2.3324	96.345	100.00	mg/kg	7.9	94.0	20	75 - 125	
Molybdenum	DUP	1727086-09	2.7621	3.7865		mg/kg	31.3		20		A02
	MS	1727086-09	2.7621	94.873	100.00	mg/kg		92.1		75 - 125	
	MSD	1727086-09	2.7621	93.832	100.00	mg/kg	1.1	91.1	20	75 - 125	
Nickel	DUP	1727086-09	7.6138	17.564		mg/kg	79.0		20		A02
	MS	1727086-09	7.6138	104.77	100.00	mg/kg		97.2		75 - 125	
	MSD	1727086-09	7.6138	103.39	100.00	mg/kg	1.3	95.8	20	75 - 125	
Selenium	DUP	1727086-09	ND	ND		mg/kg			20		
	MS	1727086-09	ND	8.9597	10.000	mg/kg		89.6		75 - 125	
	MSD	1727086-09	ND	8.8997	10.000	mg/kg	0.7	89.0	20	75 - 125	
Silver	DUP	1727086-09	ND	ND		mg/kg			20		
	MS	1727086-09	ND	8.6293	10.000	mg/kg		86.3		75 - 125	
	MSD	1727086-09	ND	8.4972	10.000	mg/kg	1.5	85.0	20	75 - 125	
Thallium	DUP	1727086-09	ND	ND		mg/kg			20		
	MS	1727086-09	ND	101.50	100.00	mg/kg		102		75 - 125	
	MSD	1727086-09	ND	99.397	100.00	mg/kg	2.1	99.4	20	75 - 125	
Vanadium	DUP	1727086-09	13.863	32.126		mg/kg	79.4		20		Q01
	MS	1727086-09	13.863	117.08	100.00	mg/kg		103		75 - 125	
	MSD	1727086-09	13.863	114.85	100.00	mg/kg	1.9	101	20	75 - 125	
Zinc	DUP	1727086-09	14.650	15.496		mg/kg	5.6		20		
	MS	1727086-09	14.650	108.99	100.00	mg/kg		94.3		75 - 125	
	MSD	1727086-09	14.650	108.47	100.00	mg/kg	0.5	93.8	20	75 - 125	
QC Batch ID: B006616		Used client sample: N									
Total Hexavalent Chromium	DUP	1806115-20	0.51400	0.49000		mg/kg	4.8		20		J
	MS	1806115-20	0.51400	40.804	40.000	mg/kg		101		75 - 125	
	MSD	1806115-20	0.51400	40.360	40.000	mg/kg	1.1	99.6	20	75 - 125	

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Customer ID: BCLA50  
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Bakersfield, CA 93308

Phone: (661) 327-4911  
Fax: (661) 327-1918  
Received Date: 10/13/2017 10:30 AM  
Analysis Date: 10/19/2017  
Collected Date: 10/04/2017

Project: 1728588

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020  
Method(s) using Polarized Light Microscopy**

Sample	Description	Appearance	% Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
1728588-08		Tan/Black Non-Fibrous Homogeneous		50% Quartz 15% Matrix 33% Non-fibrous (Other)	2% Chrysotile
091719931-0001	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1728588-09		Brown Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
091719931-0002	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1728588-10		Black Non-Fibrous Homogeneous		40% Quartz 25% Matrix 35% Non-fibrous (Other)	<1% Chrysotile
091719931-0003	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1728588-11		Brown Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
091719931-0004	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1728588-13		Brown Non-Fibrous Homogeneous		60% Quartz 40% Non-fibrous (Other)	None Detected
091719931-0005	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1728588-17		Brown Non-Fibrous Homogeneous	<1% Cellulose	60% Quartz 40% Non-fibrous (Other)	None Detected
091719931-0006	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1728588-18		Brown Non-Fibrous Homogeneous	<1% Cellulose	60% Quartz 40% Non-fibrous (Other)	None Detected
091719931-0007	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				
1728588-19		Brown Non-Fibrous Homogeneous	<1% Cellulose	60% Quartz 40% Non-fibrous (Other)	None Detected
091719931-0008	Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep				

Analyst(s)

Cecilia Yu (8)



Matthew Batongbacal  
or Other Approved Signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The limit of detection as stated in the method is 1%. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The test results contained within this report meet the requirements of NELAP unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from: 10/19/2017 13:55:22

ASB\_PLM\_0008\_0001 - 1.78 Printed: 10/19/2017 1:55 PM

Page 1 of 1



November 8, 2017

FAL Project: 10997

Ms. Molly Meyers  
BC Laboratories  
4100 Atlas Court  
Bakersfield, CA 93308

Dear Ms. Meyers,

The following results are associated with Frontier Analytical Laboratory project 10997. This corresponds to your subcontract order number 1728588. One solid sample was received on 10/13/2017. This sample was extracted and analyzed by EPA Method 8290 for tetra through octa chlorinated dibenzo dioxins and furans. The Toxic Equivalency (TEQ) for your sample has been calculated using the 2005 World Health Organization's (WHO's) toxic equivalency factors (TEFs). BC Laboratories requested a turnaround time of fifteen business days for project 10997.

The following report consists of an Analytical Data section and a Sample Receipt section. The Analytical Data section contains our sample tracking log and the analytical results. The Sample Receipt section contains your chain of custody, our sample login form and a sample photo. The attached results are specifically for the sample referenced in this report only. These results meet all National Environmental Laboratory Accreditation Program (NELAP) requirements and shall not be reproduced except in full. Frontier Analytical Laboratory's State of Oregon NELAP certificate number is 4041 and our State of California ELAP certificate number is 2934. This report has been emailed to you as a portable document format (PDF) file. A hardcopy will not be sent to you unless specifically requested.

If you have any questions regarding project 10997, please contact me at (916) 934-0900. Thank you for choosing Frontier Analytical Laboratory for your analytical testing needs.

Sincerely,

Thomas C. Crabtree  
Director

**FRONTIER ANALYTICAL LABORATORY**  
5172 Hillsdale Circle \* El Dorado Hills, CA 95762  
Tel (916) 934-0900 \* Fax (916) 934-0999  
[www.frontieranalytical.com](http://www.frontieranalytical.com)

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## Frontier Analytical Laboratory

### Sample Tracking Log

FAL Project ID: 10997

Received on: 10/13/2017

Project Due: 11/06/2017 Storage: R3

FAL Sample ID	Dup	Client Project ID	Client Sample ID	Requested Method	Matrix	Sampling Date	Sampling Time	Hold Time Due Date
10997-001-SA	0	1728588	1728588-10	EPA 8290 D/F	Solid	10/04/2017	08:10 am	11/03/2017

000002 of 000008

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EPA Method 8290  
PCDD/FFAL ID: 10997-001-MB  
Client ID: Method Blank  
Matrix: Solid  
Batch No: X4291Date Extracted: 11-02-2017  
Date Received: NA  
Amount: 3.00 gICal: PCDDFAL3-10-20-17  
GC Column: DB5MS  
Units: pg/gAcquired: 11-03-2017  
2005 WHO TEQ: 0.0  
Basis: Dry Weight

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.204	-	-	0.0315				
1,2,3,7,8-PeCDD	ND	0.391	-	-	0.0468				
1,2,3,4,7,8-HxCDD	ND	0.598	-	-	0.0503				
1,2,3,6,7,8-HxCDD	ND	0.602	-	-	0.0490	Total TCDD	ND	0.204	
1,2,3,7,8,9-HxCDD	ND	0.574	-	-	0.0488	Total PeCDD	ND	0.391	
1,2,3,4,6,7,8-HpCDD	ND	0.603	-	-	0.0541	Total HxCDD	ND	0.602	
OCDD	ND	1.38	-	-	0.0888	Total HpCDD	ND	0.603	
2,3,7,8-TCDF	ND	0.152	-	-	0.0243				
1,2,3,7,8-PeCDF	ND	0.285	-	-	0.0285				
2,3,4,7,8-PeCDF	ND	0.267	-	-	0.0298				
1,2,3,4,7,8-HxCDF	ND	0.242	-	-	0.0255				
1,2,3,6,7,8-HxCDF	ND	0.244	-	-	0.0253				
2,3,4,6,7,8-HxCDF	ND	0.269	-	-	0.0279				
1,2,3,7,8,9-HxCDF	ND	0.341	-	-	0.0357	Total TCDF	ND	0.152	
1,2,3,4,6,7,8-HpCDF	ND	0.308	-	-	0.0321	Total PeCDF	ND	0.285	
1,2,3,4,7,8,9-HpCDF	ND	0.385	-	-	0.0396	Total HxCDF	ND	0.341	
OCDF	ND	0.706	-	-	0.0843	Total HpCDF	ND	0.385	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	88.5	40.0 - 135	
13C-1,2,3,7,8-PeCDD	86.7	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	81.8	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	87.7	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	80.5	40.0 - 135	
13C-OCDD	67.4	40.0 - 135	
13C-2,3,7,8-TCDF	86.4	40.0 - 135	
13C-1,2,3,7,8-PeCDF	80.9	40.0 - 135	
13C-2,3,4,7,8-PeCDF	85.6	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	91.8	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	92.2	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	89.0	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	91.6	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	82.4	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	84.9	40.0 - 135	
13C-OCDF	73.2	40.0 - 135	

## Cleanup Surrogate

37Cl-2,3,7,8-TCDD 83.2 50.0 - 150

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- \* Result taken from dilution or reinjection

Analyst:   
Date: 11/8/2017Reviewed By:   
Date: 11/8/2017

000003 of 000008

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EPA Method 8290  
PCDD/FFAL ID: 10997-001-OPR  
Client ID: OPR  
Matrix: Solid  
Batch No: X4291Date Extracted: 11-02-2017  
Date Received: NA  
Amount: 3.00 gICal: PCDDFAL3-10-20-17  
GC Column: DB5MS  
Units: ng/mlAcquired: 11-03-2017  
2005 WHO TEQ: NA

Compound	Conc	QC Limits	Qual
2,3,7,8-TCDD	10.2	7.00 - 13.0	
1,2,3,7,8-PeCDD	48.7	35.0 - 65.0	
1,2,3,4,7,8-HxCDD	49.9	35.0 - 65.0	
1,2,3,6,7,8-HxCDD	49.9	35.0 - 65.0	
1,2,3,7,8,9-HxCDD	51.6	35.0 - 65.0	
1,2,3,4,6,7,8-HpCDD	52.5	35.0 - 65.0	
OCDD	98.3	70.0 - 130	
2,3,7,8-TCDF	10.1	7.00 - 13.0	
1,2,3,7,8-PeCDF	51.3	35.0 - 65.0	
2,3,4,7,8-PeCDF	51.5	35.0 - 65.0	
1,2,3,4,7,8-HxCDF	48.8	35.0 - 65.0	
1,2,3,6,7,8-HxCDF	48.5	35.0 - 65.0	
2,3,4,6,7,8-HxCDF	49.0	35.0 - 65.0	
1,2,3,7,8,9-HxCDF	49.3	35.0 - 65.0	
1,2,3,4,6,7,8-HpCDF	47.8	35.0 - 65.0	
1,2,3,4,7,8,9-HpCDF	48.1	35.0 - 65.0	
OCDF	94.5	70.0 - 130	
Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	90.1	40.0 - 135	
13C-1,2,3,7,8-PeCDD	88.4	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	83.6	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	88.9	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	84.0	40.0 - 135	
13C-OCDD	71.4	40.0 - 135	
13C-2,3,7,8-TCDF	90.4	40.0 - 135	
13C-1,2,3,7,8-PeCDF	84.6	40.0 - 135	
13C-2,3,4,7,8-PeCDF	89.3	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	91.8	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	92.7	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	89.6	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	91.8	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	85.0	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	90.4	40.0 - 135	
13C-OCDF	75.0	40.0 - 135	
Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	81.6	50.0 - 150	

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- \* Result taken from dilution or reinjection

Analyst:   
Date: 11/8/2017Reviewed By:   
Date: 11/8/2017

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5172 Hillside Circle \* El Dorado Hills, CA 95762 \* Tel (916) 934-0900 \* Fax (916) 934-0999 \* www.frontieranalytical.com

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EPA Method 8290  
PCDD/FFAL ID: 10997-001-SA  
Client ID: 1728588-10  
Matrix: Solid  
Batch No: X4291Date Extracted: 11-02-2017  
Date Received: 10-13-2017  
Amount: 3.01 g  
% Solids: 76.27ICal: PCDDFAL3-10-20-17  
GC Column: DB5MS  
Units: pg/gAcquired: 11-09-2017  
2005 WHO TEQ: 29.0  
Basis: Dry Weight

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	4.94	-		4.94	0.0315				
1,2,3,7,8-PeCDD	9.35	-		9.35	0.0468				
1,2,3,4,7,8-HxCDD	5.99	-	J	0.599	0.0503	Total TCDD	27.3	-	M
1,2,3,6,7,8-HxCDD	19.3	-		1.93	0.0490	Total PeCDD	59.4	-	
1,2,3,7,8,9-HxCDD	18.9	-		1.89	0.0488	Total HxCDD	144	-	
1,2,3,4,6,7,8-HpCDD	634	-		6.34	0.0541	Total HpCDD	1150	-	
OCDD	7040	-		2.11	0.0888				
2,3,7,8-TCDF	ND	1.14		-	0.0243				
1,2,3,7,8-PeCDF	ND	1.88		-	0.0285				
2,3,4,7,8-PeCDF	ND	1.94		-	0.0298				
1,2,3,4,7,8-HxCDF	2.36	-	J	0.236	0.0255				
1,2,3,6,7,8-HxCDF	2.10	-	J	0.210	0.0253				
2,3,4,6,7,8-HxCDF	3.29	-	J	0.329	0.0279				
1,2,3,7,8,9-HxCDF	3.36	-	J	0.336	0.0367	Total TCDF	ND	1.14	
1,2,3,4,6,7,8-HpCDF	57.5	-		0.575	0.0321	Total PeCDF	5.20	-	J
1,2,3,4,7,8,9-HpCDF	6.02	-	J	0.0602	0.0396	Total HxCDF	57.5	-	
OCDF	442	-		0.133	0.0843	Total HpCDF	319	-	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	97.1	40.0 - 135	
13C-1,2,3,7,8-PeCDD	96.6	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	78.9	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	78.4	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	82.3	40.0 - 135	
13C-OCDD	62.0	40.0 - 135	
13C-2,3,7,8-TCDF	77.9	40.0 - 135	
13C-1,2,3,7,8-PeCDF	86.6	40.0 - 135	
13C-2,3,4,7,8-PeCDF	85.4	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	82.3	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	80.8	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	80.6	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	83.8	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	77.0	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	85.3	40.0 - 135	
13C-OCDF	64.8	40.0 - 135	

Cleanup Surrogate		
37Cl-2,3,7,8-TCDD	94.0	50.0 - 150

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- \* Result taken from dilution or reinjection

Analyst:   
Date: 11/8/2017Reviewed By:   
Date: 11/8/2017

000005 of 000008

5172 Hillside Circle \* El Dorado Hills, CA 95762 \* Tel (916) 934-0900 \* Fax (916) 934-0999 \* www.frontieranalytical.com



**SUBCONTRACT ORDER**

**BC Laboratories**

**1728588**

**SENDING LABORATORY:**

BC Laboratories  
4100 Atlas Court  
Bakersfield, CA 93308  
Phone: 661-327-4911  
FAX: 661-327-1918  
Project Manager: Molly Meyers

**RECEIVING LABORATORY:**

Frontier Analytical Laboratory  
5172 Hillsdale Circle  
El Dorado Hills, CA 95762  
Phone: (916) 934-0900  
FAX: (916) 934-0999

FRNTL

10997  
Doc

Analysis	Due	Expires	Comments
----------	-----	---------	----------

Sample ID: 1728588-10	Solids	Sampled: 10/04/17 08:10	
-----------------------	--------	-------------------------	--

EPA 8290 - CDDs & CDFs	10/18/17 17:00	11/03/17 08:10	
------------------------	----------------	----------------	--

Containers supplied:

Released By

10.12.17

Date

Received By

Kashu Zep

Date

10.13.17

1035

Released By

Date

Received By

Date

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FRNTL

Page 1 of 1

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**Frontier Analytical Laboratory****Sample Login Form**FAL Project ID: **10997**

Client:	BC Laboratories, Inc
Client Project ID:	1728588
Date Received:	10/13/2017
Time Received:	10:35 am
Received By:	KZ
Logged In By:	KZ
# of Samples Received:	1
Duplicates:	0
Storage Location:	R3

Method of Delivery:	California Overnight
Tracking Number:	C11235900271062
Shipping Container Received Intact	Yes
Custody seals(s) present?	No
Custody seals(s) intact?	No
Sample Arrival Temperature (C)	0
Cooling Method	Ice
Chain Of Custody Present?	Yes
Return Shipping Container To Client	Yes
Test aqueous sample for residual Chlorine	No
Sodium Thiosulfate Added	No
Adequate Sample Volume	Yes
Appropriate Sample Container	No
pH Range of Aqueous Sample	N/A
Anomalies or additional comments:	
Please note that the sample was received in a clear glass jar. NELAP requires samples be received in amber glass bottles or jars. Although this anomaly will not affect your results, we are required by NELAP to make a note of it. We will proceed with analysis unless directed otherwise by you.	

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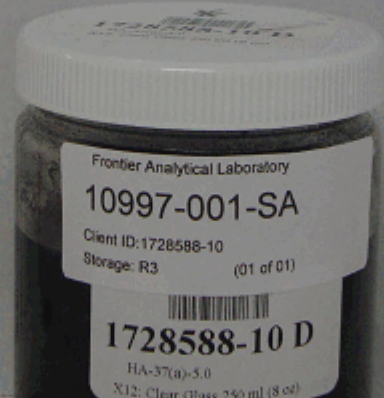
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Analysis	Due	Expires	Comments
<b>SENDING LABORATORY:</b> BC Laboratories 4100 Atlas Court Bakersfield, CA 93308 Phone: 661-327-4911 FAX: 661-327-1918 Project Manager: Molly Meyers			
<b>RECEIVING LABORATORY:</b> Frontier Analytical Laboratory 5172 Hillside Circle El Dorado Hills, CA 95762 Phone: (916) 934-0900 FAX: (916) 934-0899			
Sample ID: 1728588-10 EPA 8290 - CDDs & CDFs Containers supplied:	Solids 10/18/17 17:00	Sampled: 10/04/17 08:10 11/03/17 08:10	



Released By	Date	Received By	Date
<i>[Signature]</i>	10-12-17	<i>Kathy Zell</i>	10-13-17
			10-3

000008 of 000008

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March 30, 2018

Ms. Molly Meyers  
BC Laboratories  
4100 Atlas Court  
Bakersfield, CA 93308

Dear Ms. Meyers,

The following results are associated with Frontier Analytical Laboratory project **11341**. This corresponds to your subcontract order **1728588**. One solid sample was received on 03/02/2018 in good condition. This sample was extracted and analyzed by EPA Method 8290 for tetra through octa chlorinated dibenzo dioxin and furans. The Toxic Equivalency (TEQ) for your sample has been calculated using the 2005 World Health Organization's (WHO's) toxic equivalency factors (TEFs). BC Laboratories requested a turnaround time of fifteen business days for project **11341**.

Please note that this sample was received past the method recommended hold time of thirty days. However EPA Method 8290 states, (Section 6.4); "Storage and holding times-All samples, except fish and adipose tissue samples, must be stored at 4°C in the dark, and should be extracted within 30 days and completely analyzed within 45 days of extraction. Note: The holding times listed in Sec. 6.4 are recommendations. PCDDs and PCDFs are very stable in a variety of matrices, and holding times under the conditions listed in Sec. 6.4 may be as high as a year for certain matrices." We can confirm your sample has been stored at the required method conditions since its receipt on 03/02/2018.

The following report consists of an Analytical Data section and a Sample Receipt section. The Analytical Data section contains our sample tracking log and the analytical results. The Sample Receipt section contains your chain of custody, our sample login form and a sample photo. The enclosed results are specifically for the sample referenced in this report only. These results shall not be reproduced except in full. Frontier Analytical Laboratory's State of Oregon NELAP certificate number is **4041**. Our State of California ELAP certificate number is **2934**. This report has been emailed to you. A hardcopy of this report will not be sent to you unless specifically requested.

If you have any questions regarding project **11341**, please feel free to contact me at 916-934-0900. Thank you for choosing Frontier Analytical Laboratory for your analytical testing needs.

Sincerely,

Thomas C. Crabtree  
Director

**FRONTIER ANALYTICAL LABORATORY**  
5172 Hillsdale Circle \* El Dorado Hills, CA 95762  
Tel (916) 934-0900 \* Fax (916) 934-0999  
[www.frontieranalytical.com](http://www.frontieranalytical.com)

000001 of 000008



## Frontier Analytical Laboratory

### Sample Tracking Log

FAL Project ID: 11341

Received on: 03/02/2018

Project Due: 03/26/2018

Storage: R-3

FAL Sample ID	Dup	Client Project ID	Client Sample ID	Requested Method	Matrix	Sampling Date	Sampling Time	Hold Time Due Date
11341-001-SA	0	1728588	1728588-01	EPA 8290 D/F	Solid	10/04/2017	08:25 am	11/03/2017

FAL Sample ID	Notes
------------------	-------

11341-001-SA	Please note that the sample was received past its hold time. We will proceed with analysis unless directed otherwise by you.
--------------	--

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EPA Method 8290  
PCDD/FFAL ID: 11341-001-MB  
Client ID: Method Blank  
Matrix: Solid  
Batch No: X4445Date Extracted: 03-21-2018  
Date Received: NA  
Amount: 5.00 gICal: PCDDFAL4-12-20-17  
GC Column: DB5MS  
Units: pg/gAcquired: 03-23-2018  
2005 WHO TEQ: 0.0  
Basis: Dry Weight

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.182	-	-	0.0273				
1,2,3,7,8-PeCDD	ND	0.271	-	-	0.0570				
1,2,3,4,7,8-HxCDD	ND	0.309	-	-	0.0793				
1,2,3,6,7,8-HxCDD	ND	0.354	-	-	0.0940	Total TCDD	ND	0.182	
1,2,3,7,8,9-HxCDD	ND	0.303	-	-	0.0823	Total PeCDD	ND	0.271	
1,2,3,4,6,7,8-HpCDD	ND	0.370	-	-	0.0842	Total HxCDD	ND	0.354	
OCDD	ND	0.500	-	-	0.172	Total HpCDD	ND	0.370	
2,3,7,8-TCDF	ND	0.133	-	-	0.0269				
1,2,3,7,8-PeCDF	ND	0.148	-	-	0.0449				
2,3,4,7,8-PeCDF	ND	0.152	-	-	0.0468				
1,2,3,4,7,8-HxCDF	ND	0.149	-	-	0.0437				
1,2,3,6,7,8-HxCDF	ND	0.156	-	-	0.0417				
2,3,4,6,7,8-HxCDF	ND	0.145	-	-	0.0574				
1,2,3,7,8,9-HxCDF	ND	0.187	-	-	0.0657	Total TCDF	ND	0.133	
1,2,3,4,6,7,8-HpCDF	ND	0.205	-	-	0.0747	Total PeCDF	ND	0.152	
1,2,3,4,7,8,9-HpCDF	ND	0.292	-	-	0.0883	Total HxCDF	ND	0.187	
OCDF	ND	0.372	-	-	0.170	Total HpCDF	ND	0.292	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	96.5	40.0 - 135	
13C-1,2,3,7,8-PeCDD	103	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	102	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	104	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	99.1	40.0 - 135	
13C-OCDD	99.2	40.0 - 135	
13C-2,3,7,8-TCDF	98.9	40.0 - 135	
13C-1,2,3,7,8-PeCDF	101	40.0 - 135	
13C-2,3,4,7,8-PeCDF	103	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	96.2	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	102	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	99.4	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	102	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	101	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	101	40.0 - 135	
13C-OCDF	97.9	40.0 - 135	

## Cleanup Surrogate

37Cl-2,3,7,8-TCDD 92.5 50.0 - 150

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1  
B Analyte is present in Method Blank  
C Chemical Interference  
D Presence of Diphenyl Ethers  
DNQ Analyte concentration is below calibration range  
E Analyte concentration is above calibration range  
F Analyte confirmation on secondary column  
J Analyte concentration is below calibration range  
M Maximum possible concentration  
ND Analyte Not Detected at Detection Limit Level  
NP Not Provided  
P Pre-filtered through a Whatman 0.7um GF/F filter  
S Sample acceptance criteria not met  
X Matrix interferences  
\* Result taken from dilution or reinjection

Analyst: 

Date: 3/28/2018

Reviewed By: 

Date: 3/30/2018

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5172 Hillside Circle \* El Dorado Hills, CA 95762 \* Tel (916) 934-0900 \* Fax (916) 934-0999 \* www.frontieranalytical.com

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EPA Method 8290  
PCDD/FFAL ID: 11341-001-OPR  
Client ID: OPR  
Matrix: Solid  
Batch No: X4445Date Extracted: 03-21-2018  
Date Received: NA  
Amount: 5.00 gICal: PCDDFAL4-12-20-17  
GC Column: DB5MS  
Units: ng/mlAcquired: 03-23-2018  
2005 WHO TEQ: NA

Compound	Conc	QC Limits	Qual
2,3,7,8-TCDD	10.4	7.00 - 13.0	
1,2,3,7,8-PeCDD	53.1	35.0 - 65.0	
1,2,3,4,7,8-HxCDD	49.1	35.0 - 65.0	
1,2,3,6,7,8-HxCDD	51.4	35.0 - 65.0	
1,2,3,7,8,9-HxCDD	45.1	35.0 - 65.0	
1,2,3,4,6,7,8-HpCDD	52.9	35.0 - 65.0	
OCDD	99.8	70.0 - 130	
2,3,7,8-TCDF	10.6	7.00 - 13.0	
1,2,3,7,8-PeCDF	53.1	35.0 - 65.0	
2,3,4,7,8-PeCDF	52.6	35.0 - 65.0	
1,2,3,4,7,8-HxCDF	52.0	35.0 - 65.0	
1,2,3,6,7,8-HxCDF	52.0	35.0 - 65.0	
2,3,4,6,7,8-HxCDF	51.3	35.0 - 65.0	
1,2,3,7,8,9-HxCDF	53.6	35.0 - 65.0	
1,2,3,4,6,7,8-HpCDF	52.9	35.0 - 65.0	
1,2,3,4,7,8,9-HpCDF	52.6	35.0 - 65.0	
OCDF	104	70.0 - 130	
Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	89.8	40.0 - 135	
13C-1,2,3,7,8-PeCDD	98.1	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	91.8	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	93.2	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	76.6	40.0 - 135	
13C-OCDD	53.3	40.0 - 135	
13C-2,3,7,8-TCDF	91.8	40.0 - 135	
13C-1,2,3,7,8-PeCDF	93.5	40.0 - 135	
13C-2,3,4,7,8-PeCDF	96.4	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	88.3	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	90.5	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	82.6	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	81.8	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	79.7	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	80.9	40.0 - 135	
13C-OCDF	60.1	40.0 - 135	
Cleanup Surrogate			
37Cl-2,3,7,8-TCDD	80.5	50.0 - 150	

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- \* Result taken from dilution or reinjection

Analyst:   
Date: 3/28/2018Reviewed By:   
Date: 3/30/2018

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5172 Hillside Circle \* El Dorado Hills, CA 95762 \* Tel (916) 934-0900 \* Fax (916) 934-0999 \* www.frontieranalytical.com

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EPA Method 8290  
PCDD/FFAL ID: 11341-001-SA  
Client ID: 1728588-01  
Matrix: Solid  
Batch No: X4445Date Extracted: 03-21-2018  
Date Received: 03-02-2018  
Amount: 5.00 g  
% Solids: 97.28ICal: PCDDFAL4-12-20-17  
GC Column: DB5MS  
Units: pg/gAcquired: 03-24-2018  
2005 WHO TEQ: 0.0100  
Basis: Dry Weight

Compound	Conc	DL	Qual	2005 WHO Tox	MDL	Compound	Conc	DL	Qual
2,3,7,8-TCDD	ND	0.187	-	-	0.0273				
1,2,3,7,8-PeCDD	ND	0.218	-	-	0.0570				
1,2,3,4,7,8-HxCDD	ND	0.291	-	-	0.0793				
1,2,3,6,7,8-HxCDD	ND	0.309	-	-	0.0940	Total TCDD	ND	0.187	
1,2,3,7,8,9-HxCDD	ND	0.275	-	-	0.0823	Total PeCDD	ND	0.218	
1,2,3,4,6,7,8-HpCDD	0.847	-	J	0.00847	0.0842	Total HxCDD	ND	0.309	
OCDD	5.25	-	J	0.00158	0.172	Total HpCDD	1.77	-	J
2,3,7,8-TCDF	ND	0.138	-	-	0.0269				
1,2,3,7,8-PeCDF	ND	0.196	-	-	0.0449				
2,3,4,7,8-PeCDF	ND	0.206	-	-	0.0468				
1,2,3,4,7,8-HxCDF	ND	0.360	-	-	0.0437				
1,2,3,6,7,8-HxCDF	ND	0.346	-	-	0.0417				
2,3,4,6,7,8-HxCDF	ND	0.357	-	-	0.0574				
1,2,3,7,8,9-HxCDF	ND	0.387	-	-	0.0657	Total TCDF	ND	0.138	
1,2,3,4,6,7,8-HpCDF	ND	0.335	-	-	0.0747	Total PeCDF	ND	0.206	
1,2,3,4,7,8,9-HpCDF	ND	0.322	-	-	0.0883	Total HxCDF	ND	0.367	
OCDF	ND	0.550	-	-	0.170	Total HpCDF	ND	0.335	

Internal Standards	% Rec	QC Limits	Qual
13C-2,3,7,8-TCDD	88.2	40.0 - 135	
13C-1,2,3,7,8-PeCDD	97.2	40.0 - 135	
13C-1,2,3,4,7,8-HxCDD	91.7	40.0 - 135	
13C-1,2,3,6,7,8-HxCDD	94.7	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDD	89.0	40.0 - 135	
13C-OCDD	74.4	40.0 - 135	
13C-2,3,7,8-TCDF	93.9	40.0 - 135	
13C-1,2,3,7,8-PeCDF	99.5	40.0 - 135	
13C-2,3,4,7,8-PeCDF	98.6	40.0 - 135	
13C-1,2,3,4,7,8-HxCDF	90.9	40.0 - 135	
13C-1,2,3,6,7,8-HxCDF	92.0	40.0 - 135	
13C-2,3,4,6,7,8-HxCDF	89.6	40.0 - 135	
13C-1,2,3,7,8,9-HxCDF	94.1	40.0 - 135	
13C-1,2,3,4,6,7,8-HpCDF	90.4	40.0 - 135	
13C-1,2,3,4,7,8,9-HpCDF	96.4	40.0 - 135	
13C-OCDF	78.0	40.0 - 135	

## Cleanup Surrogate

37Cl-2,3,7,8-TCDD	80.1	50.0 - 150
-------------------	------	------------

- A Isotopic Labeled Standard outside QC range but signal to noise ratio is >10:1
- B Analyte is present in Method Blank
- C Chemical Interference
- D Presence of Diphenyl Ethers
- DNQ Analyte concentration is below calibration range
- E Analyte concentration is above calibration range
- F Analyte confirmation on secondary column
- J Analyte concentration is below calibration range
- M Maximum possible concentration
- ND Analyte Not Detected at Detection Limit Level
- NP Not Provided
- P Pre-filtered through a Whatman 0.7um GF/F filter
- S Sample acceptance criteria not met
- X Matrix interferences
- \* Result taken from dilution or reinjection

Analyst:

Date: 3/28/2018

Reviewed By:

Date: 3/30/2018

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**Frontier Analytical Laboratory****Sample Login Form**FAL Project ID: **11341**

Client:	BC Laboratories, Inc
Client Project ID:	1728588
Date Received:	03/02/2018
Time Received:	10:00 am
Received By:	KZ
Logged In By:	SC
# of Samples Received:	1
Duplicates:	0
Storage Location:	R-3

Method of Delivery:	Golden State Overnight
Tracking Number:	47057030118371811893
Shipping Container Received Intact	Yes
Custody seals(s) present?	No
Custody seals(s) intact?	No
Sample Arrival Temperature (C)	0
Cooling Method	Ice
Chain Of Custody Present?	Yes
Return Shipping Container To Client	Yes
Test aqueous sample for residual Chlorine	No
Sodium Thiosulfate Added	No
Adequate Sample Volume	Yes
Appropriate Sample Container	No
pH Range of Aqueous Sample	N/A
Anomalies or additional comments:	
Please note that the sample was received in a clear glass jar. NELAP requires samples be received in amber glass bottles or jars. Although this anomaly will not affect your results, we are required by NELAP to make a note of it. We will proceed with analysis unless directed otherwise by you.	

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



Subcontract Report for 1728588 PDF File Name: wo\_1728588\_sub\_FRNTL\_addn.pdf Page 8 of 8



<b>SUBCONTRACT ORDER</b> BC Laboratories 1728588		<b>RECEIVING LABORATORY:</b> Frontier Analytical Laboratory \$FRNTL-EINV 5172 Hillside Circle El Dorado Hills, CA 95762 Phone: (916) 934-0900 Fax: (916) 934-0999	
<b>SENDING LABORATORY:</b> BC Laboratories 4100 Atlas Ct Bakersfield, CA 93308 Phone: 661-327-4911 Fax: 661-327-1918 Project Manager: Molly Meyers		<b>Tracking Number:</b> 47057030118371811893	
<b>Analysis</b>	<b>Due</b>	<b>Expires</b>	<b>Laboratory ID</b>
<b>Comments</b> metals, dioxin, Cr6 added per Kirk. m			

Sample ID: 11341-001-SA  
Client ID: 1728588-01  
Storage: R-3 (01 of 01)  
1728588-01 D  
HA-37(a)-10.0  
X12: Clear Glass 250 ml (8 oz)

Released By: [Signature] Date: 3-1-18  
Received By: [Signature] Date: 3-12-2018

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5172 Hillside Circle \* El Dorado Hills, CA 95762 \* Tel (916) 934-0900 \* Fax (916) 934-0999 \* www.frontieranalytical.com

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 04/02/2018 11:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit
A01	Detection and quantitation limits are raised due to sample dilution.
A02	The difference between duplicate readings is less than the quantitation limit.
A07	Detection and quantitation limits were raised due to sample dilution caused by high analyte concentration or matrix interference.
A10	Detection and quantitation limits were raised due to matrix interference.
A57	Chromatogram not typical of motor oil.
L07	The Laboratory Control Sample (LCS) recovery is not within laboratory established control limits.
pH1:1	pH result reported on a 1:1 dilution of sample
Q01	Sample precision is not within the control limits.
Q02	Matrix spike precision is not within the control limits.
Q03	Matrix spike recovery(s) is(are) not within the control limits.
S05	The sample holding time was exceeded.
S09	The surrogate recovery on the sample for this compound was not within the control limits.

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



Date of Report: 01/16/2018

Kirk Henning

Stantec - SLO

3437 Empresa Drive, Suite A

Suite A

San Luis Obispo, CA 93401

Client Project: [none]

BCL Project: Former Northern Landfill

BCL Work Order: 1728589

Invoice ID: B282668, B291234

Enclosed are the results of analyses for samples received by the laboratory on 10/6/2017. If you have any questions concerning this report, please feel free to contact me.

Revised Report: This report supercedes Report ID 1000661341

Sincerely,

Contact Person: Molly Meyers  
Client Service Rep

Stuart Buttram  
Technical Director

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

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Total Petroleum Hydrocarbons.....	13
<b>1728589-04 - HA-39-15.0</b>	
Total Petroleum Hydrocarbons.....	14
<b>1728589-05 - HA-39-20.0</b>	
Total Petroleum Hydrocarbons.....	15
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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1728589 Page 1 of 4

# Chain of Custody Form

**LABORATORIES, INC.**

Client: **Stantec** Project #: **185850429.30.0007**  
Attn: **Kirk Hennings** Project Name: **Former Northern**  
Street Address: **3437 Foxglove Dr. Suite A** Location  
City, State, Zip: **San Luis Obispo, CA 93401**  
Phone: **(805) 230-2851** Fax: **(805) 230-2851**  
Email: **kirk.hennings@stantec.com**  
Work Order #: **17-28589**

Analysis Requested

Comments:

Please refer to the back of this page for completion instructions and method legend.

Sample Matrix  
☐ Soil  
☐ Sludge  
☐ Drinking Water  
☐ Ground Water  
☐ Waste Water  
☐ Other

Result Request \*\*Surcharge  
☐ STD ☐ 5 Day\*\* ☐ 2 Day\*\* ☐ 1 Day\*\*  
(if two)

Sample #	Description	Date Sampled	Time Sampled
1	HA-49-10.0	10/05/17	08:10
2	HA-49-15.0		08:15
3	HA-39-10.0		08:40
4	HA-39-15.0		08:45
5	HA-39-20.0		08:55
6	HA-41-10.0		10:30
7	HA-41-15.0		10:35
8	HA-41-20.0		10:45
9	HA-41-25.0		10:55
10	HA-40-10.0		11:25
11	HA-40-15.0		11:30
12	HA-40-20.0		11:40

CHK BY **[Signature]** DISTRIBUTION  
SUB-OUT ☒

<b>Billing</b>	<input checked="" type="checkbox"/> Same as above	<b>EDF Required?</b> Geotracker <input type="checkbox"/> Yes <input type="checkbox"/> No Send Copy to State of CA? (EDT) <input type="checkbox"/> Yes <input type="checkbox"/> No	<b>Global ID</b> (Needed for EDF) 1. Received By <b>[Signature]</b> Date <b>10/05/17</b> Time <b>16:00</b> 2. Received By <b>[Signature]</b> Date <b>10/05/17</b> Time <b>14:05</b> 3. Received By <b>[Signature]</b> Date <b>10/05/17</b> Time <b>16:00</b>	<b>System #</b> (Needed for EDT) 1. Received By <b>[Signature]</b> Date <b>10/05/17</b> Time <b>14:05</b> 2. Received By <b>[Signature]</b> Date <b>10/05/17</b> Time <b>14:05</b> 3. Received By <b>[Signature]</b> Date <b>10/05/17</b> Time <b>16:00</b>
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BC Laboratories, Inc. - 4100 Atlas Ct. - Bakersfield, CA 93308 - Fax: 661.327.1918 - www.bclabs.com

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Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1728589 Page 2 of 4

# Chain of Custody Form

Client:		Project #:		Project Name:		Sampler(s):		City, State, Zip:		Phone:		Fax:		Email:		Work Order #:		Analysis Requested		Comments:		Sample Matrix		Result Request "Surcharge"		Notes			
Report To:		Client:		Project #:		Project Name:		Sampler(s):		City, State, Zip:		Phone:		Fax:		Email:		Work Order #:		Analysis Requested		Comments:		Sample Matrix		Result Request "Surcharge"		Notes	
Report To:		Client:		Project #:		Project Name:		Sampler(s):		City, State, Zip:		Phone:		Fax:		Email:		Work Order #:		Analysis Requested		Comments:		Sample Matrix		Result Request "Surcharge"		Notes	
1		1A-49-10.0		10/25/17		08:10		X																					
2		1A-49-15.0		11		08:15		X																					
3		1A-39-10.0		11		08:40		X																					
4		1A-39-15.0		11		08:45		X																					
5		1A-39-20.0		11		08:55		X																					
6		1A-41-10.0		11		10:30		X																					
7		1A-41-15.0		11		10:35		X																					
8		1A-41-20.0		11		10:45		X																					
9		1A-41-25.0		11		10:55		X																					
10		1A-40-10.0		11		11:25		X																					
11		1A-40-15.0		11		11:30		X																					
12		1A-40-20.0		11		10:40		X																					

Billing		EDF Required?		Global ID		System #	
Client:		GeoTracker		1. Relinquished By		1. Received By	
Address:		Send Copy to State of CA? (EDT)		2. Relinquished By		2. Received By	
City:		State Zip		3. Relinquished By		3. Received By	
Attn:		Yes No		Date Time		Date Time	
P.O. #:		Yes No		Date Time		Date Time	
Client:		GeoTracker		1. Relinquished By		1. Received By	
Address:		Send Copy to State of CA? (EDT)		2. Relinquished By		2. Received By	
City:		State Zip		3. Relinquished By		3. Received By	
Attn:		Yes No		Date Time		Date Time	
P.O. #:		Yes No		Date Time		Date Time	

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1728589 Page 3 of 4

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page 1 Of 2							
Submission #: 17-28589											
<b>SHIPPING INFORMATION</b>		<b>SHIPPING CONTAINER</b>		<b>FREE LIQUID</b>							
Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/>		Ice Chest <input checked="" type="checkbox"/> None <input type="checkbox"/> Box <input type="checkbox"/>		YES <input type="checkbox"/> NO <input type="checkbox"/>							
BC Lab Field Service <input checked="" type="checkbox"/> Other <input type="checkbox"/> (Specify)		Other <input type="checkbox"/> (Specify)		W / S							
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments:											
Custody Seals: Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments:											
Intact? Yes <input type="checkbox"/> No <input type="checkbox"/> Intact? Yes <input type="checkbox"/> No <input type="checkbox"/>											
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											
COC Received		Emissivity: 95		Container: 5100							
<input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Thermometer ID: 274		Date/Time: 10-6-17							
		Temperature: (A) 1.9 °C / (C) 2.0 °C		Analyst: JLD/40							
<b>SAMPLE CONTAINERS</b>		<b>SAMPLE NUMBERS</b>									
		1	2	3	4	5	6	7	8	9	10
QT PE UNPRES											
4oz / 8oz / 16oz PE UNPRES											
2oz Cr*											
QT INORGANIC CHEMICAL METALS											
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz											
PT CYANIDE											
PT NITROGEN FORMS											
PT TOTAL SULFIDE											
2oz. NITRATE / NITRITE											
PT TOTAL ORGANIC CARBON											
PT CHEMICAL OXYGEN DEMAND											
PA PHENOLICS											
40ml VOA VIAL TRAVEL BLANK											
40ml VOA VIAL											
QT EPA 1664											
PT ODOR											
RADIOLOGICAL											
BACTERIOLOGICAL											
40 ml VOA VIAL- 504											
QT EPA 508/608/8080											
QT EPA 515.1/8150											
QT EPA 525											
QT EPA 525 TRAVEL BLANK											
40ml EPA 547											
40ml EPA 531.1											
8oz EPA 548											
QT EPA 549											
QT EPA 8015M											
QT EPA 8270											
8oz / 16oz / 32oz AMBER											
8oz / 16oz 32oz MAR		A	A	A	A	A	A	A	A	A	A
SOIL SLEEVE											
PCB VIAL											
PLASTIC BAG											
TEDLAR BAG											
FERROUS IRON											
ENCORE											
SMART KIT											
SUMMA CANISTER											

Comments:

Sample Numbering Completed By: KJG

Date/Time: 10-9-17 1100

Rev 21 05/23/2016

A = Actual / C = Corrected

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**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1728589 Page 4 of 4

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page <u>2</u> Of <u>2</u>							
Submission #: <u>17-28589</u>											
<b>SHIPPING INFORMATION</b> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/> BC Lab Field Service <input checked="" type="checkbox"/> Other <input type="checkbox"/> (Specify) _____			<b>SHIPPING CONTAINER</b> Ice Chest <input checked="" type="checkbox"/> None <input type="checkbox"/> Box <input type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		<b>FREE LIQUID</b> YES <input type="checkbox"/> NO <input type="checkbox"/> W / S						
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: _____											
Custody Seals: Ice Chest <input type="checkbox"/> Containers <input type="checkbox"/> None <input checked="" type="checkbox"/> Comments: _____ Intact? Yes <input type="checkbox"/> No <input type="checkbox"/> Intact? Yes <input type="checkbox"/> No <input type="checkbox"/>											
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											
<b>COC Received</b> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Emissivity: <u>95</u> Container: <u>Styro</u> Thermometer ID: <u>274</u> Temperature: (A) <u>1.9</u> °C / (C) <u>2.0</u> °C		Date/Time: <u>10.6.17</u> Analyst: <u>JD/1640</u>							
<b>SAMPLE CONTAINERS</b>		<b>SAMPLE NUMBERS</b>									
		11	12	3	4	5	6	7	8	9	10
QT PE UNPRES											
4oz / 8oz / 16oz PE UNPRES											
2oz Cr <sup>6</sup>											
QT INORGANIC CHEMICAL METALS											
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz											
PT CYANIDE											
PT NITROGEN FORMS											
PT TOTAL SULFIDE											
2oz. NITRATE / NITRITE											
PT TOTAL ORGANIC CARBON											
PT CHEMICAL OXYGEN DEMAND											
PLA PHENOLICS											
40ml VOA VIAL TRAVEL BLANK											
40ml VOA VIAL											
QT EPA 1664											
PT ODOR											
RADIOLOGICAL											
BACTERIOLOGICAL											
40 ml VOA VIAL- 504											
QT EPA 508/608/8080											
QT EPA 515.1/8150											
QT EPA 525											
QT EPA 525 TRAVEL BLANK											
40ml EPA 547											
40ml EPA 531.1											
8oz EPA 545											
QT EPA 549											
QT EPA 5015M											
QT EPA 5270											
8oz / 16oz / 32oz AMBER											
8oz / 16oz / 32oz JAR											
SOIL SLEEVE											
PCB VIAL											
PLASTIC BAG											
TEDLAR BAG											
FERROUS IRON											
ENCORE											
SMART KIT											
SUMMA CANISTER											

Comments:

Sample Numbering Completed By: JKG  
A = Actual / C = Corrected

Date/Time: 10-9-17 1100

Rev 21 05/23/2016

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/16/2018 16:39  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1728589-01	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728589-01	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-49-10.0
1728589-01	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/06/2017 16:40
1728589-01	<b>Sampling Date:</b>	10/05/2017 08:10
	<b>Sample Depth:</b>	---
1728589-01	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728589-01	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728589-01	<b>Location ID (FieldPoint):</b>	HA-49
	<b>Matrix:</b>	SO
1728589-01	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1728589-02	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728589-02	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-49-15.0
1728589-02	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/06/2017 16:40
1728589-02	<b>Sampling Date:</b>	10/05/2017 08:15
	<b>Sample Depth:</b>	---
1728589-02	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728589-02	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728589-02	<b>Location ID (FieldPoint):</b>	HA-49
	<b>Matrix:</b>	SO
1728589-02	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1728589-03	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728589-03	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-39-10.0
1728589-03	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/06/2017 16:40
1728589-03	<b>Sampling Date:</b>	10/05/2017 08:40
	<b>Sample Depth:</b>	---
1728589-03	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728589-03	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728589-03	<b>Location ID (FieldPoint):</b>	HA-39
	<b>Matrix:</b>	SO
1728589-03	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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San Luis Obispo, CA 93401

**Reported:** 01/16/2018 16:39  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
1728589-04	<b>COC Number:</b>	---	<b>Receive Date:</b> 10/06/2017 16:40
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 10/05/2017 08:45
1728589-04	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-39-15.0	<b>Lab Matrix:</b> Solids
1728589-04	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-39
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:
1728589-05	<b>COC Number:</b>	---	<b>Receive Date:</b> 10/06/2017 16:40
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 10/05/2017 08:55
1728589-05	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-39-20.0	<b>Lab Matrix:</b> Solids
1728589-05	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-39
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:
1728589-06	<b>COC Number:</b>	---	<b>Receive Date:</b> 10/06/2017 16:40
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 10/05/2017 10:30
1728589-06	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-41-10.0	<b>Lab Matrix:</b> Solids
1728589-06	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-41
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:

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San Luis Obispo, CA 93401

**Reported:** 01/16/2018 16:39  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information		
1728589-07	<b>COC Number:</b>	---	<b>Receive Date:</b> 10/06/2017 16:40
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 10/05/2017 10:35
1728589-07	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-41-15.0	<b>Lab Matrix:</b> Solids
1728589-07	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-41
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:
1728589-08	<b>COC Number:</b>	---	<b>Receive Date:</b> 10/06/2017 16:40
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 10/05/2017 10:45
1728589-08	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-41-20.0	<b>Lab Matrix:</b> Solids
1728589-08	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-41
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:
1728589-09	<b>COC Number:</b>	---	<b>Receive Date:</b> 10/06/2017 16:40
	<b>Project Number:</b>	Former Northern Landfill	<b>Sampling Date:</b> 10/05/2017 10:55
1728589-09	<b>Sampling Location:</b>	---	<b>Sample Depth:</b> ---
	<b>Sampling Point:</b>	HA-41-25.0	<b>Lab Matrix:</b> Solids
1728589-09	<b>Sampled By:</b>	SISL	<b>Sample Type:</b> Soil
			Delivery Work Order:
			Global ID:
			Location ID (FieldPoint): HA-41
			Matrix: SO
			Sample QC Type (SACode): CS
			Cooler ID:

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San Luis Obispo, CA 93401

**Reported:** 01/16/2018 16:39  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1728589-10	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728589-10	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-40-10.0
1728589-10	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/06/2017 16:40
1728589-10	<b>Sampling Date:</b>	10/05/2017 11:25
	<b>Sample Depth:</b>	---
1728589-10	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728589-10	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728589-10	<b>Location ID (FieldPoint):</b>	HA-40
	<b>Matrix:</b>	SO
1728589-10	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1728589-11	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728589-11	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-40-15.0
1728589-11	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/06/2017 16:40
1728589-11	<b>Sampling Date:</b>	10/05/2017 11:30
	<b>Sample Depth:</b>	---
1728589-11	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728589-11	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728589-11	<b>Location ID (FieldPoint):</b>	HA-40
	<b>Matrix:</b>	SO
1728589-11	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1728589-12	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728589-12	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-40-20.0
1728589-12	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/06/2017 16:40
1728589-12	<b>Sampling Date:</b>	10/05/2017 11:40
	<b>Sample Depth:</b>	---
1728589-12	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728589-12	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728589-12	<b>Location ID (FieldPoint):</b>	HA-40
	<b>Matrix:</b>	SO
1728589-12	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/16/2018 16:39  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728589-01	<b>Client Sample Name:</b>	Former Northern Landfill, HA-49-10.0, 10/5/2017 8:10:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	83.3	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/16/17 06:30	10/16/17 19:12	AS1	GC-13	1.007	BJ1691

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/16/2018 16:39  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728589-02	<b>Client Sample Name:</b>	Former Northern Landfill, HA-49-15.0, 10/5/2017 8:15:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	81.7	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/16/17 06:30	10/16/17 19:35	AS1	GC-13	0.993	BJ1691

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/16/2018 16:39  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728589-03	<b>Client Sample Name:</b>	Former Northern Landfill, HA-39-10.0, 10/5/2017 8:40:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	77.1	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/16/17 06:30	10/16/17 19:57	AS1	GC-13	1.010	BJ1691

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3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/16/2018 16:39  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728589-04	<b>Client Sample Name:</b>	Former Northern Landfill, HA-39-15.0, 10/5/2017 8:45:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	75.5	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/16/17 06:30	10/16/17 20:20	AS1	GC-13	1.017	BJ1691

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**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728589-05	<b>Client Sample Name:</b>	Former Northern Landfill, HA-39-20.0, 10/5/2017 8:55:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	76.3	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/16/17 06:30	10/16/17 20:42	AS1	GC-13	1.007	BJ1691

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**Reported:** 01/16/2018 16:39  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728589-06	<b>Client Sample Name:</b>	Former Northern Landfill, HA-41-10.0, 10/5/2017 10:30:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	66.4	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/16/17 06:30	10/16/17 21:05	AS1	GC-13	0.997	BJ1691

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**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728589-08	<b>Client Sample Name:</b>	Former Northern Landfill, HA-41-20.0, 10/5/2017 10:45:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	87.0	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/16/17 06:30	10/16/17 21:28	AS1	GC-13	1.010	BJ1691

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**Reported:** 01/16/2018 16:39  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728589-09	<b>Client Sample Name:</b>	Former Northern Landfill, HA-41-25.0, 10/5/2017 10:55:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	70.0	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/16/17 06:30	10/16/17 22:13	AS1	GC-13	1.010	BJ1691

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**Reported:** 01/16/2018 16:39  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728589-10	<b>Client Sample Name:</b>	Former Northern Landfill, HA-40-10.0, 10/5/2017 11:25:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	62.0	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/16/17 06:30	10/17/17 00:09	AS1	GC-13	0.993	BJ1691

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**Reported:** 01/16/2018 16:39  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728589-12	<b>Client Sample Name:</b>	Former Northern Landfill, HA-40-20.0, 10/5/2017 11:40:00AM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	66.8	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/16/17 06:30	10/16/17 21:51	AS1	GC-13	0.993	BJ1691

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**Reported:** 01/16/2018 16:39  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J1691</b>						
TPH - Gasoline	B[J1691-BLK1	ND	mg/kg	20	5.0	
TPH - Diesel (FFP)	B[J1691-BLK1	ND	mg/kg	10	1.2	
TPH - Motor Oil	B[J1691-BLK1	ND	mg/kg	20	6.5	
<b>Tetracosane (Surrogate)</b>	<b>B[J1691-BLK1</b>	<b>68.1</b>	<b>%</b>	<b>20 - 145 (LCL - UCL)</b>		

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**Reported:** 01/16/2018 16:39  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: B[J1691										
TPH - Diesel (FFP)	B[J1691-BS1	LCS	79.384	83.333	mg/kg	95.3		64 - 124		
Tetracosane (Surrogate)	B[J1691-BS1	LCS	2.6265	3.3347	mg/kg	78.8		20 - 145		



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**Reported:** 01/16/2018 16:39  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J1691		Used client sample: Y - Description: HA-40-10.0, 10/05/2017 11:25									
TPH - Diesel (FFP)	MS	1728589-10	ND	72.740	84.175	mg/kg		86.4		52 - 131	
	MSD	1728589-10	ND	70.548	81.967	mg/kg	3.1	86.1	30	52 - 131	
Tetracosane (Surrogate)	MS	1728589-10	ND	2.3731	3.3684	mg/kg		70.5		20 - 145	
	MSD	1728589-10	ND	2.2490	3.2800	mg/kg	5.4	68.6		20 - 145	

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**EMSL Analytical, Inc.**

464 McCormick Street San Leandro, CA 94577  
Tel/Fax: (510) 895-3675 / (510) 895-3680  
<http://www.EMSL.com> / [sanleandrolab@emsl.com](mailto:sanleandrolab@emsl.com)

EMSL Order: 091800318

Customer ID: BCLA50

Customer PO: 1728589

Project ID:

Attention: Molly Meyers  
BC Laboratories, Inc.  
4100 Atlas Court  
Bakersfield, CA 93308

Phone: (661) 327-4911  
Fax: (661) 327-1918  
Received Date: 01/04/2018 9:30 AM  
Analysis Date: 01/09/2018  
Collected Date:

Project: 1728589

**Test Report: Asbestos Analysis of Bulk Materials via EPA 600/R-93/116 and/or EPA 600/M4-82-020  
Method(s) using Polarized Light Microscopy**

Sample	Description	Appearance	% Fibrous	Non-Asbestos % Non-Fibrous	Asbestos % Type
1728589-01		Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
091800318-0001 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1728589-03		Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
091800318-0002 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					
1728589-04		Brown Non-Fibrous Homogeneous		100% Non-fibrous (Other)	None Detected
091800318-0003 Soil is a problem matrix. Other analytical options are recommended such as EPA 600 PLM/TEM with milling prep					

Analyst(s)

Adam C. Fink (3)



Matthew Batongbacal  
or Other Approved Signatory

Due to magnification limitations inherent in PLM, asbestos fibers in dimensions below the resolution capability of PLM may not be detected. Samples reported as <1% or none detected may require additional testing by TEM to confirm asbestos quantities. The limit of detection as stated in the method is 1%. The above test report relates only to the items tested and may not be reproduced in any form without the express written approval of EMSL Analytical, Inc. EMSL's liability is limited to the cost of analysis. EMSL bears no responsibility for sample collection activities or analytical method limitations. Interpretation and use of test results are the responsibility of the client. The test results contained within this report meet the requirements of NELAC unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc San Leandro, CA

Initial report from: 01/10/2018 02:56:23

ASB\_PLM\_0008\_0001 - 1.78 Printed: 1/9/2018 11:56 PM

Page 1 of 1

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**Reported:** 01/16/2018 16:39  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

### Notes And Definitions

MDL      Method Detection Limit  
ND      Analyte Not Detected  
PQL      Practical Quantitation Limit



**Laboratories, Inc.**

Environmental Testing Laboratory Since 1949



Date of Report: 01/04/2018

Kirk Henning

Stantec - SLO

3437 Empresa Drive, Suite A

Suite A

San Luis Obispo, CA 93401

Client Project: [none]

BCL Project: Former Northern Landfill

BCL Work Order: 1728590

Invoice ID: B282669

Enclosed are the results of analyses for samples received by the laboratory on 10/6/2017. If you have any questions concerning this report, please feel free to contact me.

Revised Report: This report supercedes Report ID 1000661347

Sincerely,

Contact Person: Molly Meyers  
Client Service Rep

Stuart Buttram  
Technical Director

Certifications: CA ELAP #1186; NV #CA00014; OR ELAP #4032-001; AK UST101

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## Chain of Custody Form

Analysis Requested		Comments:	
Project #: 185350429.300.0001 Client: <u>Kick Henning</u> Attn: <u>Kick Henning</u> Street Address: <u>3437 Empress Dr Suite A</u> City, State, Zip: <u>Salt Lake City, UT 84111</u> Phone: <u>(805) 250-2891</u> Fax: Email: <u>Kick.Henning@startec.com</u> Work Order #: <u>17-28590</u>		Please refer to the back of this page for completion instructions and method legend.	
Sample #	Description	Date Sampled	Time Sampled
1	HA-45-10.0	10/04/17	14:35
2	HA-45-15.0	10/04/17	14:40
3	HA-45-20.0	10/04/17	14:45
<div style="display: flex; justify-content: space-between;"> <div> <b>Sample Matrix</b>  <input checked="" type="checkbox"/> Soil  <input type="checkbox"/> Sludge  <input type="checkbox"/> Drinking Water  <input type="checkbox"/> Ground Water  <input type="checkbox"/> Waste Water         </div> <div> <b>Result Request **Surcharge</b>  <input type="checkbox"/> STD <input type="checkbox"/> 5 Day** <input type="checkbox"/> 2 Day** <input type="checkbox"/> 1 Day**  <small>(if low)</small> </div> </div>			
<div style="display: flex; justify-content: space-between;"> <div> <b>CHK BY</b>   </div> <div> <b>DISTRIBUTION</b>  <input checked="" type="checkbox"/> SUB-OUT <input type="checkbox"/> </div> </div>			
<b>Notes</b>			

Billing		System # (Needed for EDT)	
Same as above <input checked="" type="checkbox"/>	Global ID (Needed for EDT)	1. Received By Date: 10/17/17 Time: 14:05	2. Received By Date: 10/17/17 Time: 14:05
Client:	EDT Required? Geotracker <input type="checkbox"/> Yes <input type="checkbox"/> No	3. Relinquished By Date: 10/17/17 Time: 14:40	4. Relinquished By Date: 10/17/17 Time: 14:40
Address:	Send Copy to State of CA? (EDT) <input type="checkbox"/> Yes <input type="checkbox"/> No		
City:	State: Zip:		
Attn:			
P.O. #:			

BC Laboratories, Inc. - 4100 Atlas Ct. - Bakersfield, CA 93308 - 661.327.4911 - Fax: 661.327.1918 - www.bclabs.com

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Environmental Testing Laboratory Since 1949

Chain of Custody and Cooler Receipt Form for 1728590 Page 3 of 3

BC LABORATORIES INC.		COOLER RECEIPT FORM		Page 1 Of 1							
Submission #: <b>17-28590</b>											
<b>SHIPPING INFORMATION</b> Fed Ex <input type="checkbox"/> UPS <input type="checkbox"/> Ontrac <input type="checkbox"/> Hand Delivery <input type="checkbox"/> BC Lab Field Service <input checked="" type="checkbox"/> Other <input type="checkbox"/> (Specify) _____			<b>SHIPPING CONTAINER</b> Ice Chest <input checked="" type="checkbox"/> None <input type="checkbox"/> Box <input type="checkbox"/> Other <input type="checkbox"/> (Specify) _____		<b>FREE LIQUID</b> YES <input type="checkbox"/> NO <input type="checkbox"/> W / S						
Refrigerant: Ice <input checked="" type="checkbox"/> Blue Ice <input type="checkbox"/> None <input type="checkbox"/> Other <input type="checkbox"/> Comments: _____											
Custody Seals: Ice Chest <input type="checkbox"/> Containers <input checked="" type="checkbox"/> None <input checked="" type="checkbox"/> Comments: _____ Intact? Yes <input type="checkbox"/> No <input type="checkbox"/> Intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											
All samples received? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> All samples containers intact? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> Description(s) match COC? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>											
<b>COC Received</b> <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO		Emissivity: <u>95</u> Container: <u>Shipped</u> Thermometer ID: <u>274</u> Temperature: (A) <u>1.9</u> °C / (C) <u>2.0</u> °C		Date/Time: <u>10-6-17</u> Analyst-Init: <u>SDH/40</u>							
<b>SAMPLE CONTAINERS</b>		<b>SAMPLE NUMBERS</b>									
		1	2	3	4	5	6	7	8	9	10
QT PE UNPRES											
4oz / 8oz / 16oz PE UNPRES											
2oz Cr <sup>4</sup>											
QT INORGANIC CHEMICAL METALS											
INORGANIC CHEMICAL METALS 4oz / 8oz / 16oz											
PT CYANIDE											
PT NITROGEN FORMS											
PT TOTAL SULFIDE											
2oz NITRATE / NITRITE											
PT TOTAL ORGANIC CARBON											
PT CHEMICAL OXYGEN DEMAND											
PMA PHENOLICS											
40ml VOA VIAL TRAVEL BLANK											
40ml VOA VIAL											
QT EPA 1664											
PT ODOR											
RADIOLOGICAL											
BACTERIOLOGICAL											
40 ml VOA VIAL- 504											
QT EPA 503/608/8080											
QT EPA 515.1/8150											
QT EPA 525											
QT EPA 525 TRAVEL BLANK											
40ml EPA 547											
40ml EPA 531.1											
8oz EPA 548											
QT EPA 549											
QT EPA 8015M											
QT EPA 8270											
8oz / 16oz / 32oz AMBER											
8oz / 16oz / 32oz JAR											
SOIL SLEEVE		A	A	A							
PCB VIAL											
PLASTIC BAG											
TEDLAR BAG											
FERROUS IRON											
ENCORE											
SMART KIT											
SUMMA CANISTER											

Comments:

Sample Numbering Completed By: Kjg

A = Actual / C = Corrected

Date/Time: 10-9-17 1100

Rev 21 06/23/2016

[S:\WPDoc\Word\Perfect\LAB\_DOCS\FORMS\ISAMREC\Rev 20]

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**Reported:** 01/04/2018 13:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Laboratory / Client Sample Cross Reference

Laboratory	Client Sample Information	
1728590-01	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728590-01	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-45-10.0
1728590-01	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/06/2017 16:40
1728590-01	<b>Sampling Date:</b>	10/04/2017 14:35
	<b>Sample Depth:</b>	---
1728590-01	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728590-01	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728590-01	<b>Location ID (FieldPoint):</b>	HA-45-10.0
	<b>Matrix:</b>	SO
1728590-01	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1728590-02	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728590-02	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-45-15.0
1728590-02	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/06/2017 16:40
1728590-02	<b>Sampling Date:</b>	10/04/2017 14:40
	<b>Sample Depth:</b>	---
1728590-02	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728590-02	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728590-02	<b>Location ID (FieldPoint):</b>	HA-45-15.0
	<b>Matrix:</b>	SO
1728590-02	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	
1728590-03	<b>COC Number:</b>	---
	<b>Project Number:</b>	Former Northern Landfill
1728590-03	<b>Sampling Location:</b>	---
	<b>Sampling Point:</b>	HA-45-20.0
1728590-03	<b>Sampled By:</b>	SISL
	<b>Receive Date:</b>	10/06/2017 16:40
1728590-03	<b>Sampling Date:</b>	10/04/2017 14:45
	<b>Sample Depth:</b>	---
1728590-03	<b>Lab Matrix:</b>	Solids
	<b>Sample Type:</b>	Soil
1728590-03	<b>Delivery Work Order:</b>	
	<b>Global ID:</b>	
1728590-03	<b>Location ID (FieldPoint):</b>	HA-45-20.0
	<b>Matrix:</b>	SO
1728590-03	<b>Sample QC Type (SACode):</b>	CS
	<b>Cooler ID:</b>	

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

All results listed in this report are for the exclusive use of the submitting party. BC Laboratories, Inc. assumes no responsibility for report alteration, separation, detachment or third party interpretation.

Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/04/2018 13:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728590-01	<b>Client Sample Name:</b>	Former Northern Landfill, HA-45-10.0, 10/4/2017 2:35:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	ND	mg/kg	10	1.2	EPA-8015B/FFP	ND		1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	68.8	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 10:30	10/17/17 02:04	AS1	GC-13	0.984	BJ1614

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/04/2018 13:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728590-02	<b>Client Sample Name:</b>	Former Northern Landfill, HA-45-15.0, 10/4/2017 2:40:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	2.6	mg/kg	10	1.2	EPA-8015B/FFP	ND	J,A52	1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	58.6	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 10:30	10/17/17 02:27	AS1	GC-13	0.990	B[J]1614

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/04/2018 13:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

<b>BCL Sample ID:</b>	1728590-03	<b>Client Sample Name:</b>	Former Northern Landfill, HA-45-20.0, 10/4/2017 2:45:00PM					
Constituent	Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Gasoline	ND	mg/kg	20	5.0	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)	1.5	mg/kg	10	1.2	EPA-8015B/FFP	ND	J,A52	1
TPH - Motor Oil	ND	mg/kg	20	6.5	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)	45.7	%	20 - 145 (LCL - UCL)		EPA-8015B/FFP			1

Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID
1	EPA-8015B/FFP	10/13/17 10:30	10/17/17 02:49	AS1	GC-13	0.987	BJ1614

*The results in this report apply to the samples analyzed in accordance with the chain of custody document. This analytical report must be reproduced in its entirety.*

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/04/2018 13:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
<b>QC Batch ID: B[J1614</b>						
TPH - Gasoline	B[J1614-BLK1	ND	mg/kg	20	5.0	
TPH - Diesel (FFP)	B[J1614-BLK1	ND	mg/kg	10	1.2	
TPH - Motor Oil	B[J1614-BLK1	ND	mg/kg	20	6.5	
<b>Tetracosane (Surrogate)</b>	<b>B[J1614-BLK1</b>	<b>75.2</b>	<b>%</b>	<b>20 - 145 (LCL - UCL)</b>		

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/04/2018 13:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Laboratory Control Sample

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control Limits		Lab
								Percent Recovery	RPD	
QC Batch ID: B[J1614										
TPH - Diesel (FFP)	B[J1614-BS1	LCS	77.910	84.746	mg/kg	91.9		64 - 124		
Tetracosane (Surrogate)	B[J1614-BS1	LCS	2.7256	3.3912	mg/kg	80.4		20 - 145		



Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/04/2018 13:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Total Petroleum Hydrocarbons

### Quality Control Report - Precision & Accuracy

									Control Limits		
Constituent	Type	Source Sample ID	Source Result	Result	Spike Added	Units	RPD	Percent Recovery	RPD	Percent Recovery	Lab Quals
QC Batch ID: B[J1614		Used client sample: N									
TPH - Diesel (FFP)	MS	1728544-01	ND	75.873	84.459	mg/kg		89.8		52 - 131	
	MSD	1728544-01	ND	72.026	84.175	mg/kg	5.2	85.6	30	52 - 131	
Tetracosane (Surrogate)	MS	1728544-01	ND	2.7356	3.3797	mg/kg		80.9		20 - 145	
	MSD	1728544-01	ND	2.5540	3.3684	mg/kg	6.9	75.8		20 - 145	

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Stantec - SLO  
3437 Empresa Drive, Suite A  
Suite A  
San Luis Obispo, CA 93401

**Reported:** 01/04/2018 13:34  
**Project:** Former Northern Landfill  
**Project Number:** [none]  
**Project Manager:** Kirk Henning

## Notes And Definitions

J	Estimated Value (CLP Flag)
MDL	Method Detection Limit
ND	Analyte Not Detected
PQL	Practical Quantitation Limit
A52	Chromatogram not typical of diesel.



# EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

Tel/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com> / [cinnasblab@EMSL.com](mailto:cinnasblab@EMSL.com)

EMSL Order: 041727607

Customer ID: 32STAN25

Customer PO:

Project ID:

**Attention:** Melissa Baernstein  
Stantec Consulting Services Inc  
3437 Empresa Drive  
Suite A  
San Luis Obispo, CA 93401

**Project:** 185850429.300.0006 - Former Northern Landfill

**Phone:** (805) 546-0455

**Fax:**

**Received Date:** 09/20/2017 9:35 AM

**Analysis Date:** 09/20/2017

**Collected Date:** 09/18/2017

## Test Report: Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method - A Rules, Revision 3, Issue 2, 8/15/94

Sample	Location	Sample Date	Volume (liters)	Fibers	Fields	LOD (fib/cc)	Fibers/ mm <sup>2</sup>	Fibers/ cc	Notes
20170918-01	E Perimeter	9/18/2017	1222.20	16	100	0.002	20.4	0.006	

041727607-0001

This method requires the submission of field blanks with each sample set. No discernable field blanks were submitted, samples are not blank corrected.

Analyst(s):

Dave Poitras PCM (1)

Benjamin Ellis, Laboratory Manager  
or Other Approved Signatory

Limit of detection is 7 fibers/mm<sup>2</sup>. Intra-laboratory Sr values: 5-20 fibers = 0.36, 21-50 fibers = 0.39, 51-100 fibers = 0.22. Inter-laboratory Sr values (Average of EMSL round robin data) = 0.30. EMSL maintains liability limited to cost of analysis. 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. Interpretation and use of test results are the responsibility of the client. EMSL is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. Results have been blank corrected as applicable. The results in this report meet all requirements of the NELAC standards unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NYS ELAP 10872, AIHA-LAP, LLC-IHLAP Accredited #100194, NJ DEP 03036, PA ID# 68-00367

Initial report from: 09/20/2017 13:23:13

EMSL ANALYTICAL, INC.  
LABORATORY • PRODUCTS • TRAINING

# Asbestos Chain of Custody For California Samples

EMSL Order Number (Lab Use Only):

041727607

EMSL Analytical, Inc.

200 Route 130 North

EMSL

CINNAMINSON, N.J.

Cinnaminson, NJ 08077

2017 SEP 20 10:20:42

FAX: (856) 786-5974

Company Name: Stantec Consulting Services Inc.		EMSL Customer ID:	
Street: 3437 Empresa Drive Suite A		City: San Luis Obispo	State/Province: CA
Zip/Postal Code: 93401	Country: US	Telephone #: 909-362-3942	Fax #:
Report To (Name): Melissa Baernstein		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
Email Address: melissa.baernstein@stantec.com		Purchase Order:	
Project Name/Number: 185850429.300.0006		EMSL Project ID (Internal Use Only):	
U.S. State Samples Taken: CA			
EMSL Bill-to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different: If Bill-to is different, note instructions in comments/special instructions below. Third-party billing requires written authorization.			
Turnaround Time (TAT) Options - Please Check			
<input type="checkbox"/> 3 Hour* <input checked="" type="checkbox"/> 6 Hour <input type="checkbox"/> 24 Hour <input type="checkbox"/> 48 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> 96 Hour <input type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week <input type="checkbox"/> 4-4.5hr TAT (AHERA only)			
*TEM Air 3 hr., please call ahead to schedule. There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT.			
<b>PCM - Air</b> <input checked="" type="checkbox"/> NIOSH 7400 <input type="checkbox"/> w/ OSHA 8hr. TWA		<b>TEM - Air</b> <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> EPA Level II <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> ISO 10312	
<b>PLM - Bulk (Reporting Limit)</b> <input type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) <input type="checkbox"/> 400 (<0.25%) Point Count <input type="checkbox"/> 400 (<0.25%) Point Count with Gravimetric Reduction <input type="checkbox"/> 1000 (<0.1%) Point Count <input type="checkbox"/> 1000 (<0.1%) Point Count with Gravimetric Reduction <input type="checkbox"/> NIOSH 9002 (<1%)		<b>Soil/Rock/Vermiculite (Reporting Limit)</b> <input type="checkbox"/> PLM CARB 435 - A (0.25%) <input type="checkbox"/> PLM CARB 435 - B (0.1%) <input type="checkbox"/> TEM CARB 435 - B (0.1%)* <input type="checkbox"/> TEM CARB 435 - C (0.01%)* <input type="checkbox"/> TEM Qualitative via Filtration Prep <input type="checkbox"/> TEM Qualitative via Drop Mount Prep <input type="checkbox"/> PLM EPA 600/R-93/116 with Milling Prep (<1%) <input type="checkbox"/> PLM EPA 600/R-93/116 with Milling Prep (<0.25%) <input type="checkbox"/> TEM EPA 600/R-93/116 with Milling Prep (<0.1%)*	
<b>TEM - Water:</b> EPA 100.2 Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking		<b>TEM - Bulk</b> <input type="checkbox"/> TEM EPA NOB <input type="checkbox"/> Chatfield SOP <input type="checkbox"/> TEM EPA 600/R-93/116 with Milling Prep (<0.1%)* *Lower reporting limits available	
<b>TEM - Dust</b> <input type="checkbox"/> Microvac - ASTM D 5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167)		<b>Other</b> <input type="checkbox"/>	
<input type="checkbox"/> Stop At First Positive (Clearly identify homogenous groups below)		Filter Pore Size (Air Samples): <input checked="" type="checkbox"/> 0.8µm <input type="checkbox"/> 0.45µm	
Sampler's Name: Melissa Baernstein		Sampler's Signature: <i>Melissa Baernstein</i>	
Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
	See attached log		
Client Sample # (s): 20180918-01		Total # of Samples: 152	
Relinquished (Client): <i>Melissa Baernstein</i>		Date: 09/18/17	Time: 17:30
Received (Lab): <i>[Signature]</i>		Date: 09-20-17	Time: 9:35
Comments/Special Instructions:			



# Stantec

3437 Impreza Drive, Suite A,  
San Luis Obispo, CA 93401  
(805) 546-0455

709727104

## Air Sampling Record

**Project Name:** Former Northern Landfill

Project #: 185850429

Collected & Calibrated by: M. Baernstein

Date: 20/10/23

Client: Phillips 66

Laboratory: *EMSL*

Calibration Source: 1858-01

[illegible]



# EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

Tel/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com/cinnasblab@EMSL.com>

EMSL Order: 041727867

Customer ID: 32STAN25

Customer PO:

Project ID:

**Attention:** Melissa Baernstein  
Stantec Consulting Services Inc  
3437 Empresa Drive  
Suite A  
San Luis Obispo, CA 93401

**Project:** 185850429.300.0006 / Former Northern Landfill

**Phone:** (805) 546-0455

**Fax:**

**Received Date:** 09/22/2017 9:30 AM

**Analysis Date:** 09/22/2017

**Collected Date:** 09/21/2017

## Test Report: Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method - A Rules, Revision 3, Issue 2, 8/15/94

Sample	Location	Sample Date	Volume (liters)	Fibers	Fields	LOD (fib/cc)	Fibers/mm <sup>2</sup>	Fibers/cc	Notes
20170921-01	N. Perimeter	9/21/2017	1528.30	<5.5	100	0.002	<7.01	<0.002	
041727867-0001									
20170921-02	E. Perimeter	9/21/2017	1538.84	<5.5	100	0.002	<7.01	<0.002	
041727867-0002									
20170921-03	S. Perimeter	9/21/2017	1538.84	<5.5	100	0.002	<7.01	<0.002	
041727867-0003									
20170921-04	W. Perimeter	9/21/2017	1517.76	<5.5	100	0.002	<7.01	<0.002	
041727867-0004									
20170921-05	N. Perimeter	9/21/2017	1328.04	<5.5	100	0.002	<7.01	<0.002	
041727867-0005									
20170921-06	E. Perimeter	9/21/2017	1317.50	<5.5	100	0.002	<7.01	<0.002	
041727867-0006									
20170921-07	S. Perimeter	9/21/2017							Not Analyzed
041727867-0007									
20170921-08	W. Perimeter	9/21/2017	1343.54	<5.5	100	0.002	<7.01	<0.002	
041727867-0008									

This method requires the submission of field blanks with each sample set. No discernable field blanks were submitted, samples are not blank corrected.

Analyst(s):

William Nguyen PCM (7)

Benjamin Ellis, Laboratory Manager  
or Other Approved Signatory

Limit of detection is 7 fibers/mm<sup>2</sup>. Intra-laboratory Sr values: 5-20 fibers = 0.36, 21-50 fibers = 0.39, 51-100 fibers = 0.22. Inter-laboratory Sr values (Average of EMSL round robin data) = 0.30. EMSL maintains liability limited to cost of analysis. 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. Interpretation and use of test results are the responsibility of the client. EMSL is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. Results have been blank corrected as applicable. The results in this report meet all requirements of the NELAP standards unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NYS ELAP 10872, AIHA-LAP, LLC-IHLAP Accredited #100194, NJ DEP 03036, PA ID# 68-00367

Initial report from: 09/22/2017 12:25:39





EMSL ANALYTICAL, INC.  
LABORATORY • PRODUCTS • TRAINING

# Asbestos Chain of Custody For California Samples

EMSL Order Number (Lab Use Only):

041727867

EMSL Analytical, Inc.

200 Route 130 North


Cinnaminson, NJ 08077

PHONE: 1-800-220-3675

FAX: (856) 786-5974

Company Name : Stantec Consulting Services Inc.		EMSL Customer ID:	
Street: 3437 Empresa Drive Suite A		City: San Luis Obispo	State/Province: CA
Zip/Postal Code: 93401	Country: US	Telephone #: 909-362-3942	Fax #:
Report To (Name): Melissa Baernstein		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
Email Address: melissa.baernstein@stantec.com		Purchase Order:	
Project Name/Number: 185850429.300.0006		EMSL Project ID (Internal Use Only):	
U.S. State Samples Taken: CA			
EMSL Bill-to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different: If Bill-to is different, note instructions in comments/special instructions below. Third-party billing requires written authorization.			
Turnaround Time (TAT) Options – Please Check			
<input type="checkbox"/> 3 Hour* <input checked="" type="checkbox"/> 6 Hour <input type="checkbox"/> 24 Hour <input type="checkbox"/> 48 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> 96 Hour <input type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week <input type="checkbox"/> 4-4.5hr TAT (AHERA only)			
*TEM Air 3 hr., please call ahead to schedule. There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT.			
<b>PCM - Air</b> <input checked="" type="checkbox"/> NIOSH 7400 <input type="checkbox"/> w/ OSHA 8hr. TWA		<b>TEM - Air</b> <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> EPA Level II <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> ISO 10312	
<b>PLM - Bulk (Reporting Limit)</b> <input type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) <input type="checkbox"/> 400 (<0.25%) Point Count <input type="checkbox"/> 400 (<0.25%) Point Count with Gravimetric Reduction <input type="checkbox"/> 1000 (<0.1%) Point Count <input type="checkbox"/> 1000 (<0.1%) Point Count with Gravimetric Reduction <input type="checkbox"/> NIOSH 9002 (<1%)		<b>Soil/Rock/Vermiculite (Reporting Limit)</b> <input type="checkbox"/> PLM CARB 435 - A (0.25%) <input type="checkbox"/> PLM CARB 435 - B (0.1%) <input type="checkbox"/> TEM CARB 435 - B (0.1%)* <input type="checkbox"/> TEM CARB 435 - C (0.01%)* <input type="checkbox"/> TEM Qualitative via Filtration Prep <input type="checkbox"/> TEM Qualitative via Drop Mount Prep <input type="checkbox"/> PLM EPA 600/R-93/116 with Milling Prep (<1%) <input type="checkbox"/> PLM EPA 600/R-93/116 with Milling Prep (<0.25%) <input type="checkbox"/> TEM EPA 600/R-93/116 with Milling Prep (<0.1%)*	
<b>TEM - Water:</b> EPA 100.2 Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking		<b>TEM - Bulk</b> <input type="checkbox"/> TEM EPA NOB <input type="checkbox"/> Chatfield SOP <input type="checkbox"/> TEM EPA 600/R-93/116 with Milling Prep (<0.1%)* *Lower reporting limits available	
		<b>TEM - Dust</b> <input type="checkbox"/> Microvac - ASTM D 5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167)	
		<b>Other</b> <input type="checkbox"/>	
<input type="checkbox"/> Stop At First Positive (Clearly identify homogenous groups below)		Filter Pore Size (Air Samples): <input checked="" type="checkbox"/> 0.8µm <input type="checkbox"/> 0.45µm	
Sampler's Name: Melissa Baernstein		Sampler's Signature: <i>Melissa Baernstein</i>	
Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
	See attached log		
Client Sample # (s): 20170921-01 - 20170921-08		Total # of Samples: 8 <i>AR</i>	
Relinquished (Client): <i>Melissa Baernstein</i>		Date: 09/21/17	Time: 14:30
Received (Lab): <i>AR</i>		Date: 9/22/17	Time: 930 AM
Comments/Special Instructions:			



 <b>Stantec</b> 3437 Impreza Drive, Suite A San Luis Obispo, CA 93401 (805) 546-0455	<b>Air Sampling Record</b> Project Name: Former Northern Landfill Project #: 185850429		Date: 09/21/17 Client: Phillips 66 Laboratory: EMSL Calibration Source: 1858-01
	Collected & Calibrated by: M. Baernstein		
	Project #: 185850429		
	Project Name: Former Northern Landfill		

Sample No. 20170921-01 Sample Location N perimeter	Sample Type <input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input type="checkbox"/> Arsenic <input checked="" type="checkbox"/> Area	Media Type <input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time 07:35 Stop Time 10:00	Total Time 145	Pre 10.54 Post 10.54	Average 10.54	Volume 1,528.30 +1033.7	Comments
Sample No. 20170921-02 Sample Location E perimeter	Sample Type <input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input type="checkbox"/> Arsenic <input checked="" type="checkbox"/> Area	Media Type <input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time 07:38 Stop Time 10:04	Total Time 146	Pre 10.54 Post 10.54	Average 10.54	Volume 1,538.84	Comments
Sample No. 20170921-03 Sample Location S perimeter	Sample Type <input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input type="checkbox"/> Arsenic <input checked="" type="checkbox"/> Area	Media Type <input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time 07:42 Stop Time 10:08	Total Time 146	Pre 10.54 Post 10.54	Average 10.54	Volume 1,538.84	Comments
Sample No. 20170921-04 Sample Location W perimeter	Sample Type <input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input type="checkbox"/> Arsenic <input checked="" type="checkbox"/> Area	Media Type <input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time 07:45 Stop Time 10:11	Total Time 144	Pre 10.54 Post 10.94	Average 10.54	Volume 1,517.76	Comments
Sample No. 20170921-05 Sample Location N perimeter	Sample Type <input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input type="checkbox"/> Arsenic <input checked="" type="checkbox"/> Area	Media Type <input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time 10:02 Stop Time 12:08	Total Time 126	Pre 10.54 Post 10.54	Average 10.54	Volume 1,328.04	Comments
Sample No. 20170921-06 Sample Location E perimeter	Sample Type <input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input type="checkbox"/> Arsenic <input checked="" type="checkbox"/> Area	Media Type <input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time 10:05 Stop Time 12:10	Total Time 125	Pre 10.54 Post 10.54	Average 10.54	Volume 1,317.50	Comments
Sample No. 20170921-07 Sample Location S perimeter	Sample Type <input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input type="checkbox"/> Arsenic <input checked="" type="checkbox"/> Area	Media Type <input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time 10:09 Stop Time 12:14	Total Time 125	Pre 10.54 Post 10.54	Average 10.54	Volume 1,317.50	Comments
Sample No. 20170921-08 Sample Location W perimeter	Sample Type <input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input type="checkbox"/> Arsenic <input checked="" type="checkbox"/> Area	Media Type <input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time 10:12 Stop Time 12:21	Total Time 129	Pre 10.54 Post 10.29	Average 10.415	Volume 1,343.54	Comments
Sample No. Sample Location	Sample Type <input type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input type="checkbox"/> Arsenic	Media Type <input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time Stop Time	Total Time	Pre Post	Average	Volume	Comments
Sample No. Sample Location	Sample Type <input type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input type="checkbox"/> Arsenic	Media Type <input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time Stop Time	Total Time	Pre Post	Average	Volume	Comments

RECEIVED  
EMSL  
CINNAMINSON, N.J.  
2017 SEP 22 A 9:31





# EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

Tel/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com/cinnaslab@EMSL.com>

EMSL Order: 041727873

Customer ID: STTC26

Customer PO:

Project ID:

**Attention:** Melissa Baernstein  
Stantec Consulting Services Inc  
25864 Business Center Drive, Suite F  
Redlands, CA 92374

**Phone:** (909) 335-6116

**Fax:**

**Received Date:** 09/22/2017 9:30 AM

**Analysis Date:** 09/22/2017

**Collected Date:** 09/20/2017

**Project:** 185850429.300.0006 / Former Northern Landfill

## Test Report: Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method - A Rules, Revision 3, Issue 2, 8/15/94

Sample	Location	Sample Date	Volume (liters)	Fibers	Fields	LOD (fib/cc)	Fibers/mm <sup>2</sup>	Fibers/cc	Notes
20170920-01	N Perimeter	9/20/2017	1306.96	<5.5	100	0.002	<7.01	<0.002	
041727873-0001									
20170920-02	E Perimeter	9/20/2017	1301.88	<5.5	100	0.002	<7.01	<0.002	
041727873-0002									
20170920-03	S Perimeter	9/20/2017	1333.12	<5.5	100	0.002	<7.01	<0.002	
041727873-0003									
20170920-04	W Perimeter	9/20/2017	1353.95	<5.5	100	0.002	<7.01	<0.002	
041727873-0004									
20170920-05	N Perimeter	9/20/2017	1306.96	<5.5	100	0.002	<7.01	<0.002	
041727873-0005									
20170920-06	E Perimeter	9/20/2017							Filter Damaged Filter damaged upon receipt.
041727873-0006									
20170920-07	S Perimeter	9/20/2017	1249.80	<5.5	100	0.002	<7.01	<0.002	
041727873-0007									
20170920-08	W Perimeter	9/20/2017	1275.34	<5.5	100	0.002	<7.01	<0.002	
041727873-0008									
20170920-09	N Perimeter	9/20/2017	1254.93	<5.5	100	0.002	<7.01	<0.002	
041727873-0009									
20170920-10	E Perimeter	9/20/2017	1239.27	<5.5	100	0.002	<7.01	<0.002	
041727873-0010									
20170920-11	S Perimeter	9/20/2017	1177.92	<5.5	100	0.002	<7.01	<0.002	
041727873-0011									
20170920-12	W Perimeter	9/20/2017	1216.38	<5.5	100	0.002	<7.01	<0.002	
041727873-0012									

This method requires the submission of field blanks with each sample set. No discernable field blanks were submitted, samples are not blank corrected.

Limit of detection is 7 fibers/mm<sup>2</sup>. Intra-laboratory Sr values: 5-20 fibers = 0.36, 21-50 fibers = 0.39, 51-100 fibers = 0.22. Inter-laboratory Sr values (Average of EMSL round robin data) = 0.30. EMSL maintains liability limited to cost of analysis. 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. Interpretation and use of test results are the responsibility of the client. EMSL is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. Results have been blank corrected as applicable. The results in this report meet all requirements of the NELAC standards unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NYS ELAP 10872, AIHA-LAP, LLC-IHLAP Accredited #100194, NJ DEP 03036, PA ID# 68-00367

Report amended: 09/27/2017 13:15:25 Replaces amended report from: 09/23/2017 12:18:47 Reason Code: Data Entry-Change to Appearance





# EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

Tel/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com> / [cinnasblab@EMSL.com](mailto:cinnasblab@EMSL.com)

EMSL Order: 041727873

Customer ID: STTC26

Customer PO:

Project ID:

**Attention:** Melissa Baernstein  
Stantec Consulting Services Inc  
25864 Business Center Drive, Suite F  
Redlands, CA 92374

**Phone:** (909) 335-6116

**Fax:**

**Received Date:** 09/22/2017 9:30 AM

**Analysis Date:** 09/22/2017

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**Project:** 185850429.300.0006 / Former Northern Landfill

## Test Report: Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method - A Rules, Revision 3, Issue 2, 8/15/94

Sample	Location	Sample Date	Volume (liters)	Fibers	Fields	LOD (fib/cc)	Fibers/ mm <sup>2</sup>	Fibers/ cc	Notes
--------	----------	-------------	--------------------	--------	--------	-----------------	----------------------------	---------------	-------

Analyst(s):

William Nguyen PCM (11)

Benjamin Ellis, Laboratory Manager  
or Other Approved Signatory

Limit of detection is 7 fibers/mm<sup>2</sup>. Intra-laboratory Sr values: 5-20 fibers = 0.36, 21-50 fibers = 0.39, 51-100 fibers = 0.22. Inter-laboratory Sr values (Average of EMSL round robin data) = 0.30. EMSL maintains liability limited to cost of analysis. 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. Interpretation and use of test results are the responsibility of the client. EMSL is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. Results have been blank corrected as applicable. The results in this report meet all requirements of the NELAC standards unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NYS ELAP 10872, AIHA-LAP, LLC-IHLAP Accredited #100194, NJ DEP 03036, PA ID# 68-00367

Report amended: 09/27/2017 13:15:25 Replaces amended report from: 09/23/2017 12:18:47 Reason Code: Data Entry-Change to Appearance



EMSL ANALYTICAL, INC.  
LABORATORY PRODUCTS TRAINING

# Asbestos Chain of Custody For California Samples

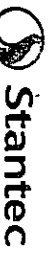
EMSL Order Number (Lab Use Only):

041727873

EMSL Analytical, Inc.  
200 Route 130 North  
CINNAMINSON, N.J.  
Cinnaminson, NJ 08077  
PHONE: 856-240-3675  
FAX: (856) 786-5974

2017 SEP 22 10:30 AM

Company Name : Stantec Consulting Services Inc.		EMSL Customer ID:	
Street: 3437 Empresa Drive Suite A		City: San Luis Obispo	State/Province: CA
Zip/Postal Code: 93401	Country: US	Telephone #: 909-362-3942	Fax #:
Report To (Name): Melissa Baernstein		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
Email Address: melissa.baernstein@stantec.com		Purchase Order:	
Project Name/Number: 185850429.300.0006		EMSL Project ID (Internal Use Only):	
U.S. State Samples Taken: CA			
EMSL Bill-to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different: If Bill-to is different, note instructions in comments/special instructions below. Third-party billing requires written authorization.			
Turnaround Time (TAT) Options – Please Check			
<input type="checkbox"/> 3 Hour* <input checked="" type="checkbox"/> 6 Hour <input type="checkbox"/> 24 Hour <input type="checkbox"/> 48 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> 96 Hour <input type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week <input type="checkbox"/> 4-4.5hr TAT (AHERA only)			
*TEM Air 3 hr., please call ahead to schedule. There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT.			
<b>PCM - Air</b> <input checked="" type="checkbox"/> NIOSH 7400 <input type="checkbox"/> w/ OSHA 8hr. TWA		<b>TEM - Air</b> <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> EPA Level II <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> ISO 10312	
<b>PLM - Bulk (Reporting Limit)</b> <input type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) <input type="checkbox"/> 400 (<0.25%) Point Count <input type="checkbox"/> 400 (<0.25%) Point Count with Gravimetric Reduction <input type="checkbox"/> 1000 (<0.1%) Point Count <input type="checkbox"/> 1000 (<0.1%) Point Count with Gravimetric Reduction <input type="checkbox"/> NIOSH 9002 (<1%)		<b>Soil/Rock/Vermiculite (Reporting Limit)</b> <input type="checkbox"/> PLM CARB 435 - A (0.25%) <input type="checkbox"/> PLM CARB 435 - B (0.1%) <input type="checkbox"/> TEM CARB 435 - B (0.1%)* <input type="checkbox"/> TEM CARB 435 - C (0.01%)* <input type="checkbox"/> TEM Qualitative via Filtration Prep <input type="checkbox"/> TEM Qualitative via Drop Mount Prep <input type="checkbox"/> PLM EPA 600/R-93/116 with Milling Prep (<1%) <input type="checkbox"/> PLM EPA 600/R-93/116 with Milling Prep (<0.25%) <input type="checkbox"/> TEM EPA 600/R-93/116 with Milling Prep (<0.1%)*	
<b>TEM - Water:</b> EPA 100.2 Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking		<b>TEM - Bulk</b> <input type="checkbox"/> TEM EPA NOB <input type="checkbox"/> Chatfield SOP <input type="checkbox"/> TEM EPA 600/R-93/116 with Milling Prep (<0.1%)* *Lower reporting limits available	
		<b>TEM - Dust</b> <input type="checkbox"/> Microvac - ASTM D 5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167)	
		<b>Other</b> <input type="checkbox"/>	
<input type="checkbox"/> Stop At First Positive (Clearly identify homogenous groups below)		Filter Pore Size (Air Samples): <input checked="" type="checkbox"/> 0.8µm <input type="checkbox"/> 0.45µm	
Sampler's Name: Melissa Baernstein		Sampler's Signature: <i>Melissa Baernstein</i>	
Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
	See attached log		
Client Sample # (s): 20170920-01		- 20170920-12 Total # of Samples: 12	
Relinquished (Client): <i>Melissa Baernstein</i>		Date: 09/20/17	Time: 10:30
Received (Lab): <i>PK</i>		Date: 09-22-17	Time: 9:30am
Comments/Special Instructions:			



3437 Impreza Drive, Suite A  
San Luis Obispo, CA 93401  
(805) 546-0455

# Air Sampling Record

Project Name: Former Northern Landfill

Project #: 185850429

Date: 09/20/17  
Client: Phillips 66  
Laboratory: ENMSL

Collected & Calibrated by: M. Baernstein

Calibration Source: 1858-01

Sample No.	20170920-01	Sample Type	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Arsenic	Media Type	<input checked="" type="checkbox"/> 25mm, 0.8um	Start Time	08:32	Total Time (min)	Pre	10.54	Average	Volume	Comments
Sample Location		<input type="checkbox"/> TEM <input checked="" type="checkbox"/> Area		<input type="checkbox"/> 25mm, 0.45um		Stop Time	10:36	124	Post	10.54	10.54	1,306.96	5.0 mph sustained. 09:53 same
Sample No.	20170920-02	Sample Type	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Arsenic	Media Type	<input checked="" type="checkbox"/> 25mm, 0.8um	Start Time	08:36	125	Pre	10.54	Average	Volume	Comments
Sample Location		<input type="checkbox"/> TEM <input checked="" type="checkbox"/> Area		<input type="checkbox"/> 25mm, 0.45um		Stop Time	10:41	125	Post	10.29	10.415	1,301.88	HA-34
Sample No.	20170920-03	Sample Type	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Arsenic	Media Type	<input checked="" type="checkbox"/> 25mm, 0.8um	Start Time	08:40	128	Pre	10.54	Average	Volume	Comments
Sample Location		<input type="checkbox"/> TEM <input checked="" type="checkbox"/> Area		<input type="checkbox"/> 25mm, 0.45um		Stop Time	10:48	128	Post	10.29	10.415	1,333.12	
Sample No.	20170920-04	Sample Type	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Arsenic	Media Type	<input checked="" type="checkbox"/> 25mm, 0.8um	Start Time	08:43	130	Pre	10.54	Average	Volume	Comments
Sample Location		<input type="checkbox"/> TEM <input checked="" type="checkbox"/> Area		<input type="checkbox"/> 25mm, 0.45um		Stop Time	10:58	130	Post	10.29	10.415	1,353.95	
Sample No.	20170920-05	Sample Type	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Arsenic	Media Type	<input checked="" type="checkbox"/> 25mm, 0.8um	Start Time	10:58	124	Pre	10.54	Average	Volume	Comments
Sample Location		<input type="checkbox"/> TEM <input checked="" type="checkbox"/> Area		<input type="checkbox"/> 25mm, 0.45um		Stop Time	12:12	124	Post	10.54	10.54	1,306.96	
Sample No.	20170920-06	Sample Type	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Arsenic	Media Type	<input checked="" type="checkbox"/> 25mm, 0.8um	Start Time	10:44	121	Pre	10.54	Average	Volume	Comments
Sample Location		<input type="checkbox"/> TEM <input checked="" type="checkbox"/> Area		<input type="checkbox"/> 25mm, 0.45um		Stop Time	12:15	121	Post	10.54	10.54	1,275.34	
Sample No.	20170920-07	Sample Type	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Arsenic	Media Type	<input checked="" type="checkbox"/> 25mm, 0.8um	Start Time	10:48	120	Pre	10.54	Average	Volume	Comments
Sample Location		<input type="checkbox"/> TEM <input checked="" type="checkbox"/> Area		<input type="checkbox"/> 25mm, 0.45um		Stop Time	12:18	120	Post	10.29	10.415	1,249.80	
Sample No.	20170920-08	Sample Type	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Arsenic	Media Type	<input checked="" type="checkbox"/> 25mm, 0.8um	Start Time	10:53	121	Pre	10.54	Average	Volume	Comments
Sample Location		<input type="checkbox"/> TEM <input checked="" type="checkbox"/> Area		<input type="checkbox"/> 25mm, 0.45um		Stop Time	12:54	121	Post	10.54	10.54	1,275.34	
Sample No.	20170920-09	Sample Type	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Arsenic	Media Type	<input checked="" type="checkbox"/> 25mm, 0.8um	Start Time	13:52	102	Pre	12.58	Average	Volume	Comments
Sample Location		<input type="checkbox"/> TEM <input checked="" type="checkbox"/> Area		<input type="checkbox"/> 25mm, 0.45um		Stop Time	15:34	102	Post	12.27	12.43	1,254.93	
Sample No.	20170920-10	Sample Type	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Arsenic	Media Type	<input checked="" type="checkbox"/> 25mm, 0.8um	Start Time	13:54	101	Pre	12.58	Average	Volume	Comments
Sample Location		<input type="checkbox"/> TEM <input checked="" type="checkbox"/> Area		<input type="checkbox"/> 25mm, 0.45um		Stop Time	15:37	101	Post	11.96	12.27	1,239.27	

2017 SEP 22 10:01  
CINNAMINSON, N.J.

**Project Name: Former Northern Landfill**

Project #: 185850429

Collected &amp; Calibrated by: M. Baernstein

Date: 09/20/17

Client: Phillips 66

Laboratory: EMS

Calibration Source: 1858-2

GINNAYMINSON, N.J. 2017 SEP 22 P 10:01



# EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

Tel/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com/cinnasblab@EMSL.com>

EMSL Order: 041728156

Customer ID: STTC26

Customer PO:

Project ID:

**Attention:** Melissa Baernstein  
Stantec Consulting Services Inc  
25864 Business Center Drive, Suite F  
Redlands, CA 92374

**Phone:** (909) 335-6116

**Fax:**

**Received Date:** 09/26/2017 9:40 AM

**Analysis Date:** 09/26/2017

**Collected Date:** 09/22/2017

**Project:** 185850429.300.0006 - Former Northern Landfill

## Test Report: Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method - A Rules, Revision 3, Issue 2, 8/15/94

Sample	Location	Sample Date	Volume (liters)	Fibers	Fields	LOD (fib/cc)	Fibers/mm <sup>2</sup>	Fibers/cc	Notes
20170922-01	N Perimeter	9/22/2017	1317.50	9	100	0.002	11.5	0.003	
041728156-0001									
20170922-02	E Perimeter	9/22/2017	1328.04	<5.5	100	0.002	<7.01	<0.002	
041728156-0002									
20170922-03	S Perimeter	9/22/2017	1333.12	7	100	0.002	8.92	0.003	
041728156-0003									
20170922-04	W Perimeter	9/22/2017	1353.95	6	100	0.002	7.64	0.002	
041728156-0004									
20170922-05	N Perimeter	9/22/2017	1359.66	<5.5	100	0.002	<7.01	<0.002	
041728156-0005									
20170922-06	E Perimeter	9/22/2017	1353.95	<5.5	100	0.002	<7.01	<0.002	
041728156-0006									
20170922-07	S Perimeter	9/22/2017	1380.74	<5.5	100	0.002	<7.01	<0.002	
041728156-0007									
20170922-08	W Perimeter	9/22/2017	1422.90	<5.5	100	0.002	<7.01	<0.002	
041728156-0008									
20170922-09	N Perimeter	9/22/2017							Not Analyzed
041728156-0009									
20170922-10	E Perimeter	9/22/2017							Not Analyzed
041728156-0010									
20170922-11	S Perimeter	9/22/2017	1370.20	<5.5	100	0.002	<7.01	<0.002	
041728156-0011									
20170922-12	W Perimeter	9/22/2017	1301.88	<5.5	100	0.002	<7.01	<0.002	
041728156-0012									

This method requires the submission of field blanks with each sample set. No discernable field blanks were submitted, samples are not blank corrected.

Limit of detection is 7 fibers/mm<sup>2</sup>. Intra-laboratory Sr values: 5-20 fibers = 0.36, 21-50 fibers = 0.39, 51-100 fibers = 0.22. Inter-laboratory Sr values (Average of EMSL round robin data) = 0.30. EMSL maintains liability limited to cost of analysis. 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. Interpretation and use of test results are the responsibility of the client. EMSL is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. Results have been blank corrected as applicable. The results in this report meet all requirements of the NELAC standards unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NYS ELAP 10872, AIHA-LAP, LLC-IHLAP Accredited #100194, NJ DEP 03036, PA ID# 68-00367

Report amended: 09/27/2017 13:10:45 Replaces amended report from: 09/27/2017 13:07:13 Reason Code: Data Entry-Change to Appearance



# EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

Tel/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com> / [cinnasblab@EMSL.com](mailto:cinnasblab@EMSL.com)

EMSL Order: 041728156

Customer ID: STTC26

Customer PO:

Project ID:

**Attention:** Melissa Baernstein  
Stantec Consulting Services Inc  
25864 Business Center Drive, Suite F  
Redlands, CA 92374

**Phone:** (909) 335-6116

**Fax:**

**Received Date:** 09/26/2017 9:40 AM

**Analysis Date:** 09/26/2017

**Collected Date:** 09/22/2017

**Project:** 185850429.300.0006 - Former Northern Landfill

## Test Report: Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method - A Rules, Revision 3, Issue 2, 8/15/94

Sample	Location	Sample Date	Volume (liters)	Fibers	Fields	LOD (fib/cc)	Fibers/ mm <sup>2</sup>	Fibers/ cc	Notes
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Analyst(s):

Dave Poitras PCM (10)

Benjamin Ellis, Laboratory Manager  
or Other Approved Signatory

Limit of detection is 7 fibers/mm<sup>2</sup>. Intra-laboratory Sr values: 5-20 fibers = 0.36, 21-50 fibers = 0.39, 51-100 fibers = 0.22. Inter-laboratory Sr values (Average of EMSL round robin data) = 0.30. EMSL maintains liability limited to cost of analysis. 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. Interpretation and use of test results are the responsibility of the client. EMSL is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. Results have been blank corrected as applicable. The results in this report meet all requirements of the NELAP standards unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NYS ELAP 10872, AIHA-LAP, LLC-IHLAP Accredited #100194, NJ DEP 03036, PA ID# 68-00367

Report amended: 09/27/2017 13:10:45 Replaces amended report from: 09/27/2017 13:07:13 Reason Code: Data Entry-Change to Appearance



EMSL ANALYTICAL, INC.  
LABORATORY PRODUCTS TRADING

# Asbestos Chain of Custody For California Samples

EMSL Order Number (Lab Use Only):

041728156

EMSL Analytical, Inc.

200 Route 130 North

Cincinnati, OH 45228-7777

PHONE: 1-800-220-3675

2017 SEP 28 10:57

Company Name : Stantec Consulting Services Inc.		EMSL Customer ID:	
Street: 3437 Empresa Drive Suite A		City: San Luis Obispo	State/Province: CA
Zip/Postal Code: 93401	Country: US	Telephone #: 909-362-3942	Fax #:
Report To (Name): Melissa Baernstein		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
Email Address: melissa.baernstein@stantec.com		Purchase Order:	
Project Name/Number: 185850429.300.0006		EMSL Project ID (Internal Use Only):	
U.S. State Samples Taken: CA			

EMSL Bill-to: ☒ Same ☐ Different: If Bill-to is different, note instructions in comments/special instructions below.  
Third-party billing requires written authorization.

## Turnaround Time (TAT) Options - Please Check

☐ 3 Hour\* ☒ 6 Hour ☐ 24 Hour ☐ 48 Hour ☐ 72 Hour ☐ 96 Hour ☐ 1 Week ☐ 2 Week  
☐ 4-4.5hr TAT (AHERA only)

\*TEM Air 3 hr., please call ahead to schedule. There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT.

<b>PCM - Air</b> <input checked="" type="checkbox"/> NIOSH 7400 <input type="checkbox"/> w/ OSHA 8hr. TWA <b>PLM - Bulk (Reporting Limit)</b> <input type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) <input type="checkbox"/> 400 (<0.25%) Point Count <input type="checkbox"/> 400 (<0.25%) Point Count with Gravimetric Reduction <input type="checkbox"/> 1000 (<0.1%) Point Count <input type="checkbox"/> 1000 (<0.1%) Point Count with Gravimetric Reduction <input type="checkbox"/> NIOSH 9002 (<1%) <b>TEM - Water: EPA 100.2</b> Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking	<b>TEM - Air</b> <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> EPA Level II <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> ISO 10312 <b>TEM - Bulk</b> <input type="checkbox"/> TEM EPA NOB <input type="checkbox"/> Chatfield SOP <input type="checkbox"/> TEM EPA 600/R-93/116 with Milling Prep (<0.1%)* *Lower reporting limits available <b>TEM - Dust</b> <input type="checkbox"/> Microvac - ASTM D 5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167)	<b>Soil/Rock/Vermiculite (Reporting Limit)</b> <input type="checkbox"/> PLM CARB 435 - A (0.25%) <input type="checkbox"/> PLM CARB 435 - B (0.1%) <input type="checkbox"/> TEM CARB 435 - B (0.1%)* <input type="checkbox"/> TEM CARB 435 - C (0.01%)* <input type="checkbox"/> TEM Qualitative via Filtration Prep <input type="checkbox"/> TEM Qualitative via Drop Mount Prep <input type="checkbox"/> PLM EPA 600/R-93/116 with Milling Prep (<1%) <input type="checkbox"/> PLM EPA 600/R-93/116 with Milling Prep (<0.25%) <input type="checkbox"/> TEM EPA 600/R-93/116 with Milling Prep (<0.1%)* *Lower reporting limits available <b>Other</b> <input type="checkbox"/>
--	--	--

☐ Stop At First Positive (Clearly identify homogenous groups below) Filter Pore Size (Air Samples): ☒ 0.8µm ☐ 0.45µm

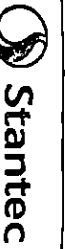
Sampler's Name: Melissa Baernstein

Sampler's Signature: *Melissa Baernstein*

Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
	See attached log		

Client Sample # (s): 20170922-01	- 20170922-12	Total # of Samples:
Relinquished (Client): <i>Melissa Baernstein</i>	Date: 09/23/17	Time: 15:
Received (Lab): <i>PCO</i>	Date: 9-26-17	Time: 9:40
Comments/Special Instructions:		

12



3437 Impreza Drive, Suite A  
San Luis Obispo, CA 93401  
(805) 546-0455

041728156

# Air Sampling Record

Project Name: Former Northern Landfill

Project #: 185850429

Collected & Calibrated by: M. Boernstein

Date: 09/22/17

Client: Phillips 66

Laboratory: EMSL

Calibration Source: 1858-01

Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
20170922-01	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Area	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	07:11 Stop Time	125	10.54 Post	10.54	1,317.50	no wind @ this time (cross wind)
20170922-02	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Area	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	07:14 Stop Time	126	10.54 Post	10.54	1,328.04	no wind @ this time (up)
20170922-03	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Area	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	07:19 Stop Time	128	10.54 Post	10.415	1,333.12	no wind @ this time
20170922-04	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Area	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	07:21 Stop Time	130	10.54 Post	10.415	1,353.95	no wind @ this time
20170922-05	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Area	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:18 Stop Time	129	10.54 Post	10.54	1,359.66	cross wind
20170922-06	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Area	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:22 Stop Time	130	10.54 Post	10.415	1,353.95	cross wind
20170922-07	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Area	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:28 Stop Time	131	10.54 Post	10.54	1,380.74	cross wind
20170922-08	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Area	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	11:39 Stop Time	135	10.54 Post	10.54	1,422.90	cross wind
20170922-09	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Area	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	11:28 Stop Time	(70)	10.54 Post	(10.54)	(737.80)	cross wind
20170922-10	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Area	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	11:34 Stop Time	(70)	10.54 Post	(10.54)	(737.80)	cross wind
20170922-11	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Area	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	12:44 Stop Time	(70)	10.54 Post	(10.54)	(737.80)	cross wind





## Air Sampling Record

Date: 08/27/13

Client: Phillips 66

Project Name: Former Northern Landfill

**Project #: 185850429**

Laboratory: EMSI

3437 Impreza Drive, Suite A  
San Luis Obispo, CA 93401  
(805) 546-0455

04/72856

Collected &amp; Calibrated by: M Baernstein

Calibration Source: 1858-01

[illegible]



# EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

Tel/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com/cinnaslab@EMSL.com>

EMSL Order: 041728216

Customer ID: STTC26

Customer PO: 185850429.300

Project ID:

**Attention:** Melissa Baernstein  
Stantec Consulting Services Inc  
25864 Business Center Drive, Suite F  
Redlands, CA 92374

**Phone:** (909) 335-6116  
**Fax:**  
**Received Date:** 09/26/2017 9:40 AM  
**Analysis Date:** 09/26/2017  
**Collected Date:** 09/25/2017

**Project:** 185850429.300.0006 / Former Northern Landfill / Phillips 66

## Test Report: Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method - A Rules, Revision 3, Issue 2, 8/15/94

Sample	Location	Sample Date	Volume (liters)	Fibers	Fields	LOD (fib/cc)	Fibers/mm <sup>2</sup>	Fibers/cc	Notes
20170925-01	N Perimeter	9/25/2017	1317.50	16	100	0.002	20.4	0.006	
041728216-0001									
20170925-02	E Perimeter	9/25/2017	1317.50	6	100	0.002	7.64	0.002	
041728216-0002									
20170925-03	S Perimeter	9/25/2017	1365.25	<5.5	100	0.002	<7.01	<0.002	
041728216-0003									
20170925-04	W Perimeter	9/25/2017	1359.66	8	100	0.002	10.2	0.003	
041728216-0004									
20170925-05	N Perimeter	9/25/2017	1365.25	13	100	0.002	16.6	0.005	
041728216-0005									
20170925-06	E Perimeter	9/25/2017	1338.58	<5.5	100	0.002	<7.01	<0.002	
041728216-0006									
20170925-07	S Perimeter	9/25/2017	1338.58	<5.5	100	0.002	<7.01	<0.002	
041728216-0007									
20170925-08	W Perimeter	9/25/2017	1433.44	14	100	0.002	17.8	0.005	
041728216-0008									
20170925-09	N Perimeter	9/25/2017	1370.20	<5.5	100	0.002	<7.01	<0.002	
041728216-0009									
20170925-10	E Perimeter	9/25/2017	1349.12	<5.5	100	0.002	<7.01	<0.002	
041728216-0010									
20170925-11	S Perimeter	9/25/2017	1376.00	<5.5	100	0.002	<7.01	<0.002	
041728216-0011									
20170925-12	W Perimeter	9/25/2017	1359.66	<5.5	100	0.002	<7.01	<0.002	
041728216-0012									

This method requires the submission of field blanks with each sample set. No discernable field blanks were submitted, samples are not blank corrected.

Limit of detection is 7 fibers/mm<sup>2</sup>. Intra-laboratory Sr values: 5-20 fibers = 0.36, 21-50 fibers = 0.39, 51-100 fibers = 0.22. Inter-laboratory Sr values (Average of EMSL round robin data) = 0.30. EMSL maintains liability limited to cost of analysis. 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. Interpretation and use of test results are the responsibility of the client. EMSL is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. Results have been blank corrected as applicable. The results in this report meet all requirements of the NELAC standards unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NYS ELAP 10872, AIHA-LAP, LLC-IHLAP Accredited #100194, NJ DEP 03036, PA ID# 68-00367

Initial report from: 09/26/2017 22:18:58



# EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

Tel/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com> / [cinnasblab@EMSL.com](mailto:cinnasblab@EMSL.com)

EMSL Order: 041728216

Customer ID: STTC26

Customer PO: 185850429.300

Project ID:

**Attention:** Melissa Baernstein  
Stantec Consulting Services Inc  
25864 Business Center Drive, Suite F  
Redlands, CA 92374

**Phone:** (909) 335-6116

**Fax:**

**Received Date:** 09/26/2017 9:40 AM

**Analysis Date:** 09/26/2017

**Collected Date:** 09/25/2017

**Project:** 185850429.300.0006 / Former Northern Landfill / Phillips 66

## Test Report: Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method - A Rules, Revision 3, Issue 2, 8/15/94

Sample	Location	Sample Date	Volume (liters)	Fibers	Fields	LOD (fib/cc)	Fibers/ mm <sup>2</sup>	Fibers/ cc	Notes
--------	----------	-------------	--------------------	--------	--------	-----------------	----------------------------	---------------	-------

Analyst(s):

Susan Muir PCM (12)

Benjamin Ellis, Laboratory Manager  
or Other Approved Signatory

Limit of detection is 7 fibers/mm<sup>2</sup>. Intra-laboratory Sr values: 5-20 fibers = 0.36, 21-50 fibers = 0.39, 51-100 fibers = 0.22. Inter-laboratory Sr values (Average of EMSL round robin data) = 0.30. EMSL maintains liability limited to cost of analysis. 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. Interpretation and use of test results are the responsibility of the client. EMSL is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. Results have been blank corrected as applicable. The results in this report meet all requirements of the NELAC standards unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NYS ELAP 10872, AIHA-LAP, LLC-IHLAP Accredited #100194, NJ DEP 03036, PA ID# 68-00367

Initial report from: 09/26/2017 22:18:58

EMSL ANALYTICAL, INC.  
LABORATORY PRODUCTS TRAINING

# Asbestos Chain of Custody For California Samples

EMSL Order Number (Lab Use Only):

241728216

EMSL Analytical, Inc.

200 Route 130 North

RELAYED

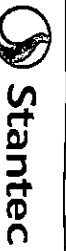
EMSL

Cinnaminson, NJ 08077

PHONE: 1-800-220-3675

2017 SEP 26 10:16:12

Company Name: Stantec Consulting Services Inc.		EMSL Customer ID:	
Street: 3437 Empresa Drive Suite A		City: San Luis Obispo	State/Province: CA
Zip/Postal Code: 93401	Country: US	Telephone #: 909-362-3942	Fax #:
Report To (Name): Melissa Baernstein		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
Email Address: melissa.baernstein@stantec.com		Purchase Order:	
Project Name/Number: 185850429.300.0006		EMSL Project ID (Internal Use Only):	
U.S. State Samples Taken: CA			
EMSL Bill-to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different: If Bill-to is different, note instructions in comments/special instructions below. Third-party billing requires written authorization.			
Turnaround Time (TAT) Options - Please Check			
<input type="checkbox"/> 3 Hour* <input checked="" type="checkbox"/> 6 Hour* <input type="checkbox"/> 24 Hour <input checked="" type="checkbox"/> 48 Hour* <input type="checkbox"/> 72 Hour* <input type="checkbox"/> 96 Hour <input type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week <input type="checkbox"/> 4-4.5hr TAT (AHERA only)			
*TEM Air 3 hr., please call ahead to schedule. There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT.			
<b>PCM - Air</b> <input checked="" type="checkbox"/> NIOSH 7400 <input type="checkbox"/> w/ OSHA 8hr. TWA <b>PLM - Bulk (Reporting Limit)</b> <input type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) <input type="checkbox"/> 400 (<0.25%) Point Count <input type="checkbox"/> 400 (<0.25%) Point Count with Gravimetric Reduction <input type="checkbox"/> 1000 (<0.1%) Point Count <input type="checkbox"/> 1000 (<0.1%) Point Count with Gravimetric Reduction <input type="checkbox"/> NIOSH 9002 (<1%) <b>TEM - Water: EPA 100.2</b> Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking		<b>TEM - Air</b> <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> EPA Level II <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> ISO 10312 <b>TEM - Bulk</b> <input type="checkbox"/> TEM EPA NOB <input type="checkbox"/> Chatfield SOP <input type="checkbox"/> TEM EPA 600/R-93/116 with Milling Prep (<0.1%)* *Lower reporting limits available <b>TEM - Dust</b> <input type="checkbox"/> Microvac - ASTM D 5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167)	
		<b>Soil/Rock/Vermiculite (Reporting Limit)</b> <input type="checkbox"/> PLM CARB 435 - A (0.25%) <input type="checkbox"/> PLM CARB 435 - B (0.1%) <input type="checkbox"/> TEM CARB 435 - B (0.1%)* <input type="checkbox"/> TEM CARB 435 - C (0.01%)* <input type="checkbox"/> TEM Qualitative via Filtration Prep <input type="checkbox"/> TEM Qualitative via Drop Mount Prep <input type="checkbox"/> PLM EPA 600/R-93/116 with Milling Prep (<1%) <input type="checkbox"/> PLM EPA 600/R-93/116 with Milling Prep (<0.25%) <input type="checkbox"/> TEM EPA 600/R-93/116 with Milling Prep (<0.1%)* *Lower reporting limits available <b>Other</b> <input type="checkbox"/>	
<input type="checkbox"/> Stop At First Positive (Clearly identify homogenous groups below)		Filter Pore Size (Air Samples): <input checked="" type="checkbox"/> 0.8µm <input type="checkbox"/> 0.45µm	
Sampler's Name: Melissa Baernstein		Sampler's Signature: <i>Melissa Baernstein</i>	
Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
	See attached log		
Client Sample # (s): 20170925-01		Total # of Samples:	
Relinquished (Client): <i>Melissa Baernstein</i>		Date: 09/25/17	Time:
Received (Lab): <i>[Signature]</i>		Date: 9-26-17	Time: 9:40
Comments/Special Instructions:			



# Air Sampling Record

Date: 09/25/17  
Client: Phillips 66

3437 Impreza Drive, Suite A  
San Luis Obispo, CA 93401  
(805) 546-0455

Project Name: Former Northern Landfill  
Project #: 185850429

Laboratory: EMSL

Collected & Calibrated by: M. Baernstein

Calibration Source: 1858-01

Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume (L)	Comments
20170925-01	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input checked="" type="checkbox"/> 25mm, 0.8um	07:21	125	10.54	10.54	1,317.50	no wind @ 07:21 08:30-09:15 3mph SSE crosswind/crosswind
N perimeter	<input type="checkbox"/> TEM <input checked="" type="checkbox"/> Area	<input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:26	125	10.54	10.54	1,317.50	no wind @ 07:26 08:30-09:15 3mph SSE upwind/crosswind
20170925-02	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input checked="" type="checkbox"/> 25mm, 0.8um	07:26	125	10.54	10.54	1,317.50	no wind @ 07:26 08:30-09:15 3mph SSE upwind/crosswind
Sample location	<input type="checkbox"/> TEM <input checked="" type="checkbox"/> Area	<input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:31	125	10.54	10.54	1,317.50	no wind @ 07:29 08:30-09:15 3mph SSE cross/crosswind
E perimeter	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	09:31	125	10.54	10.54	1,317.50	no wind @ 07:31 08:30-09:15 3mph SSE cross/crosswind
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
20170925-03	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input checked="" type="checkbox"/> 25mm, 0.8um	07:29	127	10.54	10.75	1,365.25	no wind @ 07:29 08:30-09:15 3mph SSE cross/crosswind
Sample location	<input type="checkbox"/> TEM <input checked="" type="checkbox"/> Area	<input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:36	127	10.95	10.75	1,365.25	no wind @ 07:31 08:30-09:15 3mph SSE cross/crosswind
S perimeter	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	09:36	127	10.95	10.75	1,365.25	no wind @ 07:31 08:30-09:15 3mph SSE cross/crosswind
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
20170925-04	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input checked="" type="checkbox"/> 25mm, 0.8um	07:31	129	10.54	10.54	1,359.66	no wind @ 07:31 08:30-09:15 3mph SSE cross/crosswind
Sample location	<input type="checkbox"/> TEM <input checked="" type="checkbox"/> Area	<input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:40	129	10.54	10.54	1,359.66	no wind @ 07:31 08:30-09:15 3mph SSE cross/crosswind
W perimeter	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	09:40	129	10.54	10.54	1,359.66	no wind @ 07:31 08:30-09:15 3mph SSE cross/crosswind
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
20170925-05	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input checked="" type="checkbox"/> 25mm, 0.8um	09:28	127	10.54	10.75	1,365.25	no wind @ 07:31 08:30-09:15 3mph SSE cross/crosswind
Sample location	<input type="checkbox"/> TEM <input checked="" type="checkbox"/> Area	<input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	11:35	127	10.95	10.75	1,365.25	no wind @ 07:31 08:30-09:15 3mph SSE cross/crosswind
N perimeter	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	11:35	127	10.95	10.75	1,365.25	no wind @ 07:31 08:30-09:15 3mph SSE cross/crosswind
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
20170925-06	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input checked="" type="checkbox"/> 25mm, 0.8um	09:33	127	10.54	10.54	1,338.58	no wind @ 07:31 08:30-09:15 3mph SSE cross/crosswind
Sample location	<input type="checkbox"/> TEM <input checked="" type="checkbox"/> Area	<input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	11:40	127	10.54	10.54	1,338.58	no wind @ 07:31 08:30-09:15 3mph SSE cross/crosswind
E perimeter	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	11:40	127	10.54	10.54	1,338.58	no wind @ 07:31 08:30-09:15 3mph SSE cross/crosswind
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
20170925-07	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input checked="" type="checkbox"/> 25mm, 0.8um	09:37	127	10.54	10.54	1,338.58	no wind @ 07:31 08:30-09:15 3mph SSE cross/crosswind
Sample location	<input type="checkbox"/> TEM <input checked="" type="checkbox"/> Area	<input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	11:47	127	10.54	10.54	1,338.58	no wind @ 07:31 08:30-09:15 3mph SSE cross/crosswind
S perimeter	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	11:47	127	10.54	10.54	1,338.58	no wind @ 07:31 08:30-09:15 3mph SSE cross/crosswind
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
20170925-08	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input checked="" type="checkbox"/> 25mm, 0.8um	09:44	126	10.54	10.54	1,433.44	no wind @ 07:31 08:30-09:15 3mph SSE cross/crosswind
Sample location	<input type="checkbox"/> TEM <input checked="" type="checkbox"/> Area	<input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	11:47	126	10.54	10.54	1,433.44	no wind @ 07:31 08:30-09:15 3mph SSE cross/crosswind
W perimeter	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	11:47	126	10.54	10.54	1,433.44	no wind @ 07:31 08:30-09:15 3mph SSE cross/crosswind
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
20170925-09	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input checked="" type="checkbox"/> 25mm, 0.8um	11:37	130	10.54	10.54	1,370.20	no wind @ 07:31 08:30-09:15 3mph SSE cross/crosswind
Sample location	<input type="checkbox"/> TEM <input checked="" type="checkbox"/> Area	<input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	13:47	130	10.54	10.54	1,370.20	no wind @ 07:31 08:30-09:15 3mph SSE cross/crosswind
N perimeter	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	13:47	130	10.54	10.54	1,370.20	no wind @ 07:31 08:30-09:15 3mph SSE cross/crosswind
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
20170925-10	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input checked="" type="checkbox"/> 25mm, 0.8um	11:42	128	10.54	10.54	1,349.12	no wind @ 07:31 08:30-09:15 3mph SSE cross/crosswind
Sample location	<input type="checkbox"/> TEM <input checked="" type="checkbox"/> Area	<input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	13:50	128	10.54	10.54	1,349.12	no wind @ 07:31 08:30-09:15 3mph SSE cross/crosswind
E perimeter	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	13:50	128	10.54	10.54	1,349.12	no wind @ 07:31 08:30-09:15 3mph SSE cross/crosswind

3437 Impreza Drive, Suite A  
San Luis Obispo, CA 93401  
(805) 546-0455

### Air Sampling Record

**Project Name: Former Northern Landfill**

**Project #:** 185850429

Collected &amp; Calibrated by: M. Baernstein

Date: 09/25/17

**Client:** Phillips 66

Laboratory: EMSL

Calibration Source: ~~1858-01~~

Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
20170925-11	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input checked="" type="checkbox"/> 25mm, 0.8um	11:45	128	10.54			Wind 4-6mph
Sample Location	<input type="checkbox"/> TEM <input checked="" type="checkbox"/> Area	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post 10.95	10.75	1,376	crosswind
8 perimeter	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	13:53					
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
20170925-12	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input checked="" type="checkbox"/> 25mm, 0.8um	11:48	129	10.54			
Sample Location	<input type="checkbox"/> TEM <input checked="" type="checkbox"/> Area	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post 10.54	10.54	1,359.66	upwind
10 perimeter	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	13:57					
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
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Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
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Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
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Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 25mm, 0.45um	Stop Time		Post			
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/>	<input type="checkbox"/> 37mm, 0.8um	Stop Time		Post			
Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre	Average	Volume	Comments
Sample Location	<input type="checkbox"/> PCM <input type="checkbox"/> Arsenic	<input type="checkbox"/> 25mm, 0.8um	Stop Time		Post			
Sample Location	<input type="checkbox"/> TEM <input type="checkbox"/>	<input type="checkbox"/> 2						



# EMSL Analytical, Inc.

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Tel/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com> / [cinnasblab@EMSL.com](mailto:cinnasblab@EMSL.com)

EMSL Order: 041728325

Customer ID: 32STAN25

Customer PO:

Project ID:

**Attention:** Melissa Baernstein  
Stantec Consulting Services Inc  
3437 Empresa Drive  
Suite A  
San Luis Obispo, CA 93401

**Project:** 185850429.300.0006

**Phone:** (805) 546-0455

**Fax:**

**Received Date:** 09/27/2017 9:30 AM

**Analysis Date:** 09/27/2017

**Collected Date:** 09/26/2017

## Test Report: Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method - A Rules, Revision 3, Issue 2, 8/15/94

Sample	Location	Sample Date	Volume (liters)	Fibers	Fields	LOD (fib/cc)	Fibers/mm <sup>2</sup>	Fibers/cc	Notes
20170926-01	N Perimeter	9/26/2017	1391.28	20	100	0.002	25.5	0.007	
041728325-0001									
20170926-02	E Perimeter	9/26/2017	1395.88	11	100	0.002	14.0	0.004	
041728325-0002									
20170926-03	S Perimeter	9/26/2017	1437.55	7	100	0.002	8.92	0.002	
041728325-0003									
20170926-04	W Perimeter	9/26/2017	1454.52	12	100	0.002	15.3	0.004	
041728325-0004									
20170926-05	N Perimeter	9/26/2017	1275.34	6	100	0.002	7.64	0.002	
041728325-0005									
20170926-06	E Perimeter	9/26/2017	1275.34	<5.5	100	0.002	<7.01	<0.002	
041728325-0006									
20170926-07	S Perimeter	9/26/2017	1285.88	7	100	0.002	8.92	0.003	
041728325-0007									
20170926-08	W Perimeter	9/26/2017	1285.88	14.5	100	0.002	18.5	0.006	
041728325-0008									
20170926-11	S Perimeter	9/26/2017	1328.04	6	100	0.002	7.64	0.002	
041728325-0009									
20170926-12	W Perimeter	9/26/2017	1317.50	<5.5	100	0.002	<7.01	<0.002	
041728325-0010									

This method requires the submission of field blanks with each sample set. No discernable field blanks were submitted, samples are not blank corrected.

Limit of detection is 7 fibers/mm<sup>2</sup>. Intra-laboratory Sr values: 5-20 fibers = 0.36, 21-50 fibers = 0.39, 51-100 fibers = 0.22. Inter-laboratory Sr values (Average of EMSL round robin data) = 0.30. EMSL maintains liability limited to cost of analysis. 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. Interpretation and use of test results are the responsibility of the client. EMSL is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. Results have been blank corrected as applicable. The results in this report meet all requirements of the NELAC standards unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NYS ELAP 10872, AIHA-LAP, LLC-IHLAP Accredited #100194, NJ DEP 03036, PA ID# 68-00367

Initial report from: 09/27/2017 20:46:17



# EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

Tel/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com> / [cinnasblab@EMSL.com](mailto:cinnasblab@EMSL.com)

EMSL Order: 041728325

Customer ID: 32STAN25

Customer PO:

Project ID:

**Attention:** Melissa Baernstein  
Stantec Consulting Services Inc  
3437 Empresa Drive  
Suite A  
San Luis Obispo, CA 93401

**Project:** 185850429.300.0006

**Phone:** (805) 546-0455

**Fax:**

**Received Date:** 09/27/2017 9:30 AM

**Analysis Date:** 09/27/2017

**Collected Date:** 09/26/2017

## Test Report: Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method - A Rules, Revision 3, Issue 2, 8/15/94

Sample	Location	Sample Date	Volume (liters)	Fibers	Fields	LOD (fib/cc)	Fibers/ mm <sup>2</sup>	Fibers/ cc	Notes
--------	----------	-------------	--------------------	--------	--------	-----------------	----------------------------	---------------	-------

Analyst(s):

Susan Muir PCM (10)

Benjamin Ellis, Laboratory Manager  
or Other Approved Signatory

Limit of detection is 7 fibers/mm<sup>2</sup>. Intra-laboratory Sr values: 5-20 fibers = 0.36, 21-50 fibers = 0.39, 51-100 fibers = 0.22. Inter-laboratory Sr values (Average of EMSL round robin data) = 0.30. EMSL maintains liability limited to cost of analysis. 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. Interpretation and use of test results are the responsibility of the client. EMSL is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. Results have been blank corrected as applicable. The results in this report meet all requirements of the NELAC standards unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NYS ELAP 10872, AIHA-LAP, LLC-IHLAP Accredited #100194, NJ DEP 03036, PA ID# 68-00367

Initial report from: 09/27/2017 20:46:17





# EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

Tel/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com/cinnaslab@EMSL.com>

EMSL Order: 041728453

Customer ID: 32STAN25

Customer PO:

Project ID:

**Attention:** Melissa Baernstein  
Stantec Consulting Services Inc  
3437 Empresa Drive  
Suite A  
San Luis Obispo, CA 93401

**Project:** 185850429.300.0006 / Former Northern Landfill

**Phone:** (805) 546-0455

**Fax:**

**Received Date:** 09/28/2017 9:30 AM

**Analysis Date:** 09/28/2017

**Collected Date:** 09/27/2017

## Test Report: Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method - A Rules, Revision 3, Issue 2, 8/15/94

Sample	Location	Sample Date	Volume (liters)	Fibers	Fields	LOD (fib/cc)	Fibers/mm <sup>2</sup>	Fibers/cc	Notes
20170927-01	N Perimeter	9/27/2017	1443.00	<5.5	100	0.002	<7.01	<0.002	
041728453-0001									
20170927-02	E Perimeter	9/27/2017	1375.00	6	100	0.002	7.64	0.002	
041728453-0002									
20170927-03	S Perimeter	9/27/2017	1370.00	8	100	0.002	10.2	0.003	
041728453-0003									
20170927-04	W Perimeter	9/27/2017	1391.00	9	100	0.002	11.5	0.003	
041728453-0004									
20170927-05	N Perimeter	9/27/2017	1317.50	6	100	0.002	7.64	0.002	
041728453-0005									
20170927-06	E Perimeter	9/27/2017	1306.96	7	100	0.002	8.92	0.003	
041728453-0006									
20170927-07	S Perimeter	9/27/2017	1306.96	<5.5	100	0.002	<7.01	<0.002	
041728453-0007									
20170927-08	W Perimeter	9/27/2017	1321.84	6	100	0.002	7.64	0.002	
041728453-0008									
20170927-09	N Perimeter	9/27/2017	1507.22	8	100	0.002	10.2	0.003	
041728453-0009									
20170927-10	E Perimeter	9/27/2017	1492.40	12	100	0.002	15.3	0.004	
041728453-0010									
20170927-11	S Perimeter	9/27/2017	1475.60	6	100	0.002	7.64	0.002	
041728453-0011									
20170927-12	W Perimeter	9/27/2017	1465.06	8	100	0.002	10.2	0.003	
041728453-0012									

This method requires the submission of field blanks with each sample set. No discernable field blanks were submitted, samples are not blank corrected.

Limit of detection is 7 fibers/mm<sup>2</sup>. Intra-laboratory Sr values: 5-20 fibers = 0.36, 21-50 fibers = 0.39, 51-100 fibers = 0.22. Inter-laboratory Sr values (Average of EMSL round robin data) = 0.30. EMSL maintains liability limited to cost of analysis. 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. Interpretation and use of test results are the responsibility of the client. EMSL is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. Results have been blank corrected as applicable. The results in this report meet all requirements of the NELAP standards unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NYS ELAP 10872, AIHA-LAP, LLC-IHLAP Accredited #100194, NJ DEP 03036, PA ID# 68-00367

Report amended: 09/29/2017 08:25:01 Replaces initial report from: 09/28/2017 18:53:35 Reason Code: Data Entry-Change to Appearance



# EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

Tel/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com> / [cinnasblab@EMSL.com](mailto:cinnasblab@EMSL.com)

EMSL Order: 041728453

Customer ID: 32STAN25

Customer PO:

Project ID:

**Attention:** Melissa Baernstein  
Stantec Consulting Services Inc  
3437 Empresa Drive  
Suite A  
San Luis Obispo, CA 93401

**Project:** 185850429.300.0006 / Former Northern Landfill

**Phone:** (805) 546-0455

**Fax:**

**Received Date:** 09/28/2017 9:30 AM

**Analysis Date:** 09/28/2017

**Collected Date:** 09/27/2017

## Test Report: Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method - A Rules, Revision 3, Issue 2, 8/15/94

Sample	Location	Sample Date	Volume (liters)	Fibers	Fields	LOD (fib/cc)	Fibers/ mm <sup>2</sup>	Fibers/ cc	Notes
--------	----------	-------------	--------------------	--------	--------	-----------------	----------------------------	---------------	-------

Analyst(s):

Susan Muir PCM (12)

Benjamin Ellis, Laboratory Manager  
or Other Approved Signatory

Limit of detection is 7 fibers/mm<sup>2</sup>. Intra-laboratory Sr values: 5-20 fibers = 0.36, 21-50 fibers = 0.39, 51-100 fibers = 0.22. Inter-laboratory Sr values (Average of EMSL round robin data) = 0.30. EMSL maintains liability limited to cost of analysis. 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. Interpretation and use of test results are the responsibility of the client. EMSL is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. Results have been blank corrected as applicable. The results in this report meet all requirements of the NELAC standards unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NYS ELAP 10872, AIHA-LAP, LLC-IHLAP Accredited #100194, NJ DEP 03036, PA ID# 68-00367

Report amended: 09/29/2017 08:25:01 Replaces initial report from: 09/28/2017 18:53:35 Reason Code: Data Entry-Change to Appearance



EMSL ANALYTICAL, INC.  
LABORATORY • PRODUCTS • TRAINING

# Asbestos Chain of Custody For California Samples

EMSL Order Number (Lab Use Only):

041728453

EMSL Analytical, Inc.

200 Route 130 North

NEW JERSEY

EMSL

CINNAMEN, NJ 08077

PHONE: 1-800-220-3675

FAX: 856-786-5974

2017 SEP 28

Company Name : Stantec Consulting Services Inc.		EMSL Customer ID:	
Street: 3437 Empresa Drive Suite A		City: San Luis Obispo	State/Province: CA
Zip/Postal Code: 93401	Country: US	Telephone #: 909-362-3942	Fax #:
Report To (Name): Melissa Baernstein		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
Email Address: melissa.baernstein@stantec.com		Purchase Order:	
Project Name/Number: 185850429.300.0006		EMSL Project ID (Internal Use Only):	
U.S. State Samples Taken: CA			
EMSL Bill-to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different: If Bill-to is different, note instructions in comments/special instructions below. Third-party billing requires written authorization.			
Turnaround Time (TAT) Options - Please Check			
<input type="checkbox"/> 3 Hour* <input checked="" type="checkbox"/> 6 Hour <input type="checkbox"/> 24 Hour <input checked="" type="checkbox"/> 48 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> 96 Hour <input type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week <input type="checkbox"/> 4-5 hr TAT (AHERA only)			
*TEM Air 3 hr., please call ahead to schedule. There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT.			
<b>PCM - Air</b> <input checked="" type="checkbox"/> NIOSH 7400 <input type="checkbox"/> w/ OSHA 8hr. TWA		<b>TEM - Air</b> <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> EPA Level II <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> ISO 10312	
<b>PLM - Bulk (Reporting Limit)</b> <input type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) <input type="checkbox"/> 400 (<0.25%) Point Count <input type="checkbox"/> 400 (<0.25%) Point Count with Gravimetric Reduction <input type="checkbox"/> 1000 (<0.1%) Point Count <input type="checkbox"/> 1000 (<0.1%) Point Count with Gravimetric Reduction <input type="checkbox"/> NIOSH 9002 (<1%)		<b>TEM - Bulk</b> <input type="checkbox"/> TEM EPA NOB <input type="checkbox"/> Chatfield SOP <input type="checkbox"/> TEM EPA 600/R-93/116 with Milling Prep (<0.1%)* *Lower reporting limits available**	
<b>TEM - Water: EPA 100.2</b> Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking		<b>TEM - Dust</b> <input type="checkbox"/> Microvac - ASTM D 5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167)	
<b>Spill/Rock/Vermiculite (Reporting Limit)</b> <input type="checkbox"/> PLM CARB 435 - A (0.25%) <input type="checkbox"/> PLM CARB 435 - B (0.1%) <input type="checkbox"/> TEM CARB 435 - B (0.1%)* <input type="checkbox"/> TEM CARB 435 - C (0.01%)* <input type="checkbox"/> TEM Qualitative via Filtration Prep <input type="checkbox"/> TEM Qualitative via Drop Mount Prep <input type="checkbox"/> PLM EPA 600/R-93/116 with Milling Prep (<1%) <input type="checkbox"/> PLM EPA 600/R-93/116 with Milling Prep (<0.25%) <input type="checkbox"/> TEM EPA 600/R-93/116 with Milling Prep (<0.1%)* *Lower reporting limits available		<b>Other</b> <input type="checkbox"/>	
<input type="checkbox"/> Stop At First Positive (Clearly identify homogenous groups below)		Filter Pore Size (Air Samples): <input checked="" type="checkbox"/> 0.8µm <input type="checkbox"/> 0.45µm	
Sampler's Name: Melissa Baernstein		Sampler's Signature: <i>Melissa Baernstein</i>	
Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
	See attached log		
Client Sample # (s): 20170927-01 -20170927-12		Total # of Samples: 12	
Relinquished (Client): <i>Melissa Baernstein</i>		Date: 09/27/17 Time: 15:20	
Received (Lab): <i>[Signature]</i>		Date: 9-28-17 Time: 9:30	
Comments/Special Instructions:			

12



# Stantec

3437 Impreza Drive, Suite A  
San Luis Obispo, CA 93401  
(805) 250-2854

## Air Sampling Record

Date: 09/27/17

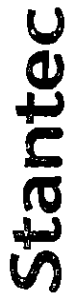
Project Name: Former Northernland Client: PLDProject #: 185850429.300.0006 Laboratory: EMSLCollected & Calibrated by: M. Baerstein Calibration Source: 1858-01

Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
20170927-01	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	07:10 Stop Time	131	10.54 Post (LPM)	11.05	1,443	Wind < 1.0 mph Easterly
N perimeter			09:21 Stop Time					crosswind
20170927-02	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	07:13 Stop Time	132	10.54 Post (LPM)	10.41	1,375	upwind
E perimeter			09:25 Stop Time					Comments
20170927-03	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	07:21 Stop Time	130	10.54 Post (LPM)	10.54	1,370	crosswind
S perimeter			09:31 Stop Time					Comments
20170927-04	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	07:24 Stop Time	132	10.54 Post (LPM)	10.54	1,391	downwind
W perimeter			09:36 Stop Time					Comments sustained wind 3.0 mph westerly
20170927-05	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:23 Stop Time	125	10.54 Post (LPM)	10.54	1,317.50	crosswind
N perimeter			11:28 Stop Time					Comments
20170927-06	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:28 Stop Time	124	10.54 Post (LPM)	10.54	1,306.96	downwind
E perimeter			11:32 Stop Time					Comments
20170927-07	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:33 Stop Time	124	10.54 Post (LPM)	10.54	1,306.96	crosswind
S perimeter			11:37 Stop Time					Comments
20170927-08	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:38 Stop Time	124	10.54 Post (LPM)	10.66	1,321.84	upwind
W perimeter			11:42 Stop Time					Comments sustained wind 6.0 mph @ 13:07, gusts 9.0 mph westerly
20170927-09	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	11:30 Stop Time	143	10.54 Post (LPM)	10.94	1,507.22	crosswind
N perimeter			13:53 Stop Time					Comments
20170927-10	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	11:35 Stop Time	140	10.54 Post (LPM)	10.66	1,492.40	downwind
E perimeter			13:55 Stop Time					

CINNAMINSON, N.J.

2017 SEP 28

A 13



## Air Sampling Record

Project Name: Former Northern Landfill Client: P666

Project #: 185850429.300.0006  
Laboratory: EML

Collected & Calibrated by: M. Bernstein  
Calibration Source: 1858-01

Date: 09/27/17

Client: P66

Laboratory: EMLSL

Calibration Source: 1858-01

CINNAMONSON, H.J.  
2017 SEP 28 A 10:13



# EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

Tel/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com/cinnaslab@EMSL.com>

EMSL Order: 041728544

Customer ID: STTC26

Customer PO: 185850429.300

Project ID:

**Attention:** Melissa Baernstein  
Stantec Consulting Services Inc  
25864 Business Center Drive, Suite F  
Redlands, CA 92374

**Phone:** (909) 335-6116  
**Fax:**  
**Received Date:** 09/29/2017 9:30 AM  
**Analysis Date:** 09/29/2017  
**Collected Date:** 09/28/2017

**Project:** 185850429.300.0006 / Former Northern Landfill / Phillips 66

## Test Report: Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method - A Rules, Revision 3, Issue 2, 8/15/94

Sample	Location	Sample Date	Volume (liters)	Fibers	Fields	LOD (fib/cc)	Fibers/mm <sup>2</sup>	Fibers/cc	Notes
20170928-01	N Perimeter	9/28/2017	1349.12	16	100	0.002	20.4	0.006	
041728544-0001									
20170928-02	E Perimeter	9/28/2017	1302.13	<5.5	100	0.002	<7.01	<0.002	
041728544-0002									
20170928-03	S Perimeter	9/28/2017	1321.84	<5.5	100	0.002	<7.01	<0.002	
041728544-0003									
20170928-04	W Perimeter	9/28/2017	1338.58	11	100	0.002	14.0	0.004	
041728544-0004									
20170928-05	N Perimeter	9/28/2017	1359.66	10	100	0.002	12.7	0.004	
041728544-0005									
20170928-06	E Perimeter	9/28/2017	1359.66	<5.5	100	0.002	<7.01	<0.002	
041728544-0006									
20170928-07	S Perimeter	9/28/2017	1306.96	14	100	0.002	17.8	0.005	
041728544-0007									
20170928-08	W Perimeter	9/28/2017	1285.88	<5.5	100	0.002	<7.01	<0.002	
041728544-0008									
20170928-09	N Perimeter	9/28/2017	1328.04	<5.5	100	0.002	<7.01	<0.002	
041728544-0009									
20170928-10	E Perimeter	9/28/2017	1338.58	6	100	0.002	7.64	0.002	
041728544-0010									
20170928-11	S Perimeter	9/28/2017	1322.96	<5.5	100	0.002	<7.01	<0.002	
041728544-0011									
20170928-12	W Perimeter	9/28/2017	1359.66	<5.5	100	0.002	<7.01	<0.002	
041728544-0012									

This method requires the submission of field blanks with each sample set. No discernable field blanks were submitted, samples are not blank corrected.

Limit of detection is 7 fibers/mm<sup>2</sup>. Intra-laboratory Sr values: 5-20 fibers = 0.36, 21-50 fibers = 0.39, 51-100 fibers = 0.22. Inter-laboratory Sr values (Average of EMSL round robin data) = 0.30. EMSL maintains liability limited to cost of analysis. 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. Interpretation and use of test results are the responsibility of the client. EMSL is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. Results have been blank corrected as applicable. The results in this report meet all requirements of the NELAP standards unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NYS ELAP 10872, AIHA-LAP, LLC-IHLAP Accredited #100194, NJ DEP 03036, PA ID# 68-00367

Initial report from: 09/29/2017 19:53:58



# EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

Tel/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com> / [cinnasblab@EMSL.com](mailto:cinnasblab@EMSL.com)

EMSL Order: 041728544

Customer ID: STTC26

Customer PO: 185850429.300

Project ID:

**Attention:** Melissa Baernstein  
Stantec Consulting Services Inc  
25864 Business Center Drive, Suite F  
Redlands, CA 92374

**Phone:** (909) 335-6116

**Fax:**

**Received Date:** 09/29/2017 9:30 AM

**Analysis Date:** 09/29/2017

**Collected Date:** 09/28/2017

**Project:** 185850429.300.0006 / Former Northern Landfill / Phillips 66

## Test Report: Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method - A Rules, Revision 3, Issue 2, 8/15/94

Sample	Location	Sample Date	Volume (liters)	Fibers	Fields	LOD (fib/cc)	Fibers/ mm <sup>2</sup>	Fibers/ cc	Notes
--------	----------	-------------	--------------------	--------	--------	-----------------	----------------------------	---------------	-------

Analyst(s):

Susan Muir PCM (12)

Benjamin Ellis, Laboratory Manager  
or Other Approved Signatory

Limit of detection is 7 fibers/mm<sup>2</sup>. Intra-laboratory Sr values: 5-20 fibers = 0.36, 21-50 fibers = 0.39, 51-100 fibers = 0.22. Inter-laboratory Sr values (Average of EMSL round robin data) = 0.30. EMSL maintains liability limited to cost of analysis. 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. Interpretation and use of test results are the responsibility of the client. EMSL is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. Results have been blank corrected as applicable. The results in this report meet all requirements of the NELAC standards unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NYS ELAP 10872, AIHA-LAP, LLC-IHLAP Accredited #100194, NJ DEP 03036, PA ID# 68-00367

Initial report from: 09/29/2017 19:53:58



EMSL ANALYTICAL, INC.  
LABORATORY PRODUCTS TRAINING

# Asbestos Chain of Custody For California Samples

EMSL Order Number (Lab Use Only):

041728544

EMSL Analytical, Inc.  
200 Route 130 North  
CINNAMINSON, N.J.

2017 SEP 29 A 10:51  
Cinnaminson, NJ 08077  
PHONE: 1-800-220-5375  
FAX: (856) 786-5974

Company Name: Stantec Consulting Services Inc.		EMSL Customer ID:	
Street: 3437 Empresa Drive Suite A		City: San Luis Obispo	State/Province: CA
Zip/Postal Code: 93401	Country: US	Telephone #: 909-362-3942	Fax #:
Report To (Name): Melissa Baernstein		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
Email Address: melissa.baernstein@stantec.com		Purchase Order:	
Project Name/Number: 185850429.300.0006		EMSL Project ID (Internal Use Only):	
U.S. State Samples Taken: CA			
EMSL Bill-to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different: If Bill-to is different, note instructions in comments/special instructions below. Third-party billing requires written authorization.			
Turnaround Time (TAT) Options - Please Check			
<input type="checkbox"/> 3 Hour* <input checked="" type="checkbox"/> 6 Hour <input type="checkbox"/> 24 Hour <input checked="" type="checkbox"/> 48 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> 96 Hour <input type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week			
*TEM Air 3 hr., please call ahead to schedule. There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT.			
<b>PCM - Air</b> <input checked="" type="checkbox"/> NIOSH 7400 <input type="checkbox"/> w/ OSHA 8hr. TWA		<b>TEM - Air</b> <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> EPA Level II <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> ISO 10312	
<b>PLM - Bulk (Reporting Limit)</b> <input type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) <input type="checkbox"/> 400 (<0.25%) Point Count <input type="checkbox"/> 400 (<0.25%) Point Count with Gravimetric Reduction <input type="checkbox"/> 1000 (<0.1%) Point Count <input type="checkbox"/> 1000 (<0.1%) Point Count with Gravimetric Reduction <input type="checkbox"/> NIOSH 9002 (<1%)		<b>Soil/Rock/Vermiculite (Reporting Limit)</b> <input type="checkbox"/> PLM CARB 435 - A (0.25%) <input type="checkbox"/> PLM CARB 435 - B (0.1%) <input type="checkbox"/> TEM CARB 435 - B (0.1%)* <input type="checkbox"/> TEM CARB 435 - C (0.01%)* <input type="checkbox"/> TEM Qualitative via Filtration Prep <input type="checkbox"/> TEM Qualitative via Drop Mount Prep <input type="checkbox"/> PLM EPA 600/R-93/116 with Milling Prep (<1%) <input type="checkbox"/> PLM EPA 600/R-93/116 with Milling Prep (<0.25%) <input type="checkbox"/> TEM EPA 600/R-93/116 with Milling Prep (<0.1%)*	
<b>TEM - Water: EPA 100.2</b> Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking		<b>TEM - Bulk</b> <input type="checkbox"/> TEM EPA NOB <input type="checkbox"/> Chatfield SOP <input type="checkbox"/> TEM EPA 600/R-93/116 with Milling Prep (<0.1%)* *Lower reporting limits available	
		<b>TEM - Dust</b> <input type="checkbox"/> Microvac - ASTM D 5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167)	
		<b>Other</b> <input type="checkbox"/>	
<input type="checkbox"/> Stop At First Positive (Clearly identify homogenous groups below)		Filter Pore Size (Air Samples): <input checked="" type="checkbox"/> 0.8µm <input type="checkbox"/> 0.45µm	
Sampler's Name: Melissa Baernstein		Sampler's Signature: <i>Melissa Baernstein</i>	
Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
	See attached log		
Client Sample # (s): 20170928-01 - 20170928-12		Total # of Samples: 12	
Relinquished (Client): <i>Melissa Baernstein</i>		Date: 09/28/17	Time: 14:45
Received (Lab): <i>[Signature]</i>		Date: 9-29-17	Time: 9:30
Comments/Special Instructions:			





Stantec

3437 Impreza Drive, Suite A  
San Luis Obispo, CA 93401  
(805) 250-2854

Air Sampling Record

Date: 09/28/17

Project Name: Former Northern Landfill

Client: Phillips 66

Project #: 185850429-300-0006

Laboratory: EMSL

Collected & Calibrated by: M. Baernstein

Calibration Source: 1858-01

Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
20170928-01	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	07:17	128	10.54	10.54	1,349.12	no wind
N perimeter	<input type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:25	125	10.54	10.417	1,302.13	no wind
20170928-02	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	07:27	124	10.54	10.66	1,321.84	no wind
E perimeter	<input type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:32	129	10.54	10.54	1,359.66	crosswind
20170928-03	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	07:32	127	10.54	10.54	1,338.58	no wind
S perimeter	<input type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:36	129	10.54	10.54	1,359.66	crosswind
20170928-04	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	07:34	124	10.54	10.54	1,321.84	no wind
W perimeter	<input type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:41	129	10.54	10.54	1,359.66	crosswind
20170928-05	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:26	124	10.54	10.54	1,321.84	no wind
N perimeter	<input type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	11:35	129	10.54	10.54	1,359.66	crosswind
20170928-06	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:33	129	10.54	10.54	1,359.66	crosswind
E perimeter	<input type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	11:39	124	10.54	10.54	1,321.84	no wind
20170928-07	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:38	124	10.54	10.54	1,321.84	no wind
S perimeter	<input type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	11:42	122	10.54	10.54	1,285.88	crosswind
20170928-08	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:43	126	10.54	10.54	1,328.04	crosswind
W perimeter	<input type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	11:45	127	10.54	10.54	1,338.58	downwind
20170928-09	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	11:37	127	10.54	10.54	1,338.58	downwind
N perimeter	<input type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	13:43	127	10.54	10.54	1,338.58	downwind
20170928-10	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	11:40	127	10.54	10.54	1,338.58	downwind
E perimeter	<input type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	13:47	127	10.54	10.54	1,338.58	downwind





# EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

Tel/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com/cinnaslab@EMSL.com>

EMSL Order: 041728786

Customer ID: STTC26

Customer PO:

Project ID:

**Attention:** Melissa Baernstein  
Stantec Consulting Services Inc  
25864 Business Center Drive, Suite F  
Redlands, CA 92374

**Phone:** (909) 335-6116

**Fax:**

**Received Date:** 10/02/2017 9:10 AM

**Analysis Date:** 10/03/2017

**Collected Date:** 09/29/2017

**Project:** 185850429.300.0006 / Former Northern Landfill

## Test Report: Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method - A Rules, Revision 3, Issue 2, 8/15/94

Sample	Location	Sample Date	Volume (liters)	Fibers	Fields	LOD (fib/cc)	Fibers/mm <sup>2</sup>	Fibers/cc	Notes
20170929-01	N Perimeter	9/29/2017	1353.82	<5.5	100	0.002	<7.01	<0.002	
041728786-0001									
20170929-02	E Perimeter	9/29/2017	1359.66	11	100	0.002	14.0	0.004	
041728786-0002									
20170929-03	S Perimeter	9/29/2017	1364.63	10	100	0.002	12.7	0.004	
041728786-0003									
20170929-04	W Perimeter	9/29/2017	1391.28	8	100	0.002	10.2	0.003	
041728786-0004									
20170929-05	N Perimeter	9/29/2017	1296.42	<5.5	100	0.002	<7.01	<0.002	
041728786-0005									
20170929-06	E Perimeter	9/29/2017	1291.71	<5.5	100	0.002	<7.01	<0.002	
041728786-0006									
20170929-07	S Perimeter	9/29/2017	1306.96	<5.5	100	0.002	<7.01	<0.002	
041728786-0007									
20170929-08	W Perimeter	9/29/2017	1296.42	7	100	0.002	8.92	0.003	
041728786-0008									
20170929-09	N Perimeter	9/29/2017	1306.96	8	100	0.002	10.2	0.003	
041728786-0009									
20170929-10	E Perimeter	9/29/2017	1311.18	<5.5	100	0.002	<7.01	<0.002	
041728786-0010									
20170929-11	S Perimeter	9/29/2017	1296.42	10	100	0.002	12.7	0.004	
041728786-0011									
20170929-12	W Perimeter	9/29/2017	1296.42	8	100	0.002	10.2	0.003	
041728786-0012									

This method requires the submission of field blanks with each sample set. No discernable field blanks were submitted, samples are not blank corrected.

Limit of detection is 7 fibers/mm<sup>2</sup>. Intra-laboratory Sr values: 5-20 fibers = 0.36, 21-50 fibers = 0.39, 51-100 fibers = 0.22. Inter-laboratory Sr values (Average of EMSL round robin data) = 0.30. EMSL maintains liability limited to cost of analysis. 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. Interpretation and use of test results are the responsibility of the client. EMSL is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. Results have been blank corrected as applicable. The results in this report meet all requirements of the NELAP standards unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NYS ELAP 10872, AIHA-LAP, LLC-IHLAP Accredited #100194, NJ DEP 03036, PA ID# 68-00367

Initial report from: 10/03/2017 23:12:52



# EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

Tel/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com> / [cinnasblab@EMSL.com](mailto:cinnasblab@EMSL.com)

EMSL Order: 041728786

Customer ID: STTC26

Customer PO:

Project ID:

**Attention:** Melissa Baernstein  
Stantec Consulting Services Inc  
25864 Business Center Drive, Suite F  
Redlands, CA 92374

**Phone:** (909) 335-6116

**Fax:**

**Received Date:** 10/02/2017 9:10 AM

**Analysis Date:** 10/03/2017

**Collected Date:** 09/29/2017

**Project:** 185850429.300.0006 / Former Northern Landfill

## Test Report: Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method - A Rules, Revision 3, Issue 2, 8/15/94

Sample	Location	Sample Date	Volume (liters)	Fibers	Fields	LOD (fib/cc)	Fibers/ mm <sup>2</sup>	Fibers/ cc	Notes
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Analyst(s):

Susan Muir PCM (12)

Benjamin Ellis, Laboratory Manager  
or Other Approved Signatory

Limit of detection is 7 fibers/mm<sup>2</sup>. Intra-laboratory Sr values: 5-20 fibers = 0.36, 21-50 fibers = 0.39, 51-100 fibers = 0.22. Inter-laboratory Sr values (Average of EMSL round robin data) = 0.30. EMSL maintains liability limited to cost of analysis. 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. Interpretation and use of test results are the responsibility of the client. EMSL is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. Results have been blank corrected as applicable. The results in this report meet all requirements of the NELAC standards unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NYS ELAP 10872, AIHA-LAP, LLC-IHLAP Accredited #100194, NJ DEP 03036, PA ID# 68-00367

Initial report from: 10/03/2017 23:12:52

EMSL ANALYTICAL, INC.  
LABORATORY PRODUCTS TRAINING

# Asbestos Chain of Custody For California Samples

EMSL Order Number (Lab Use Only):

041728786

EMSL Analytical, Inc.  
200 Route 130 North

Cinnaminson, NJ 08077

PHONE: 1-800-220-3675

FAX: (856) 786-5974

Company Name : Stantec Consulting Services Inc.		EMSL Customer ID:	
Street: 3437 Empresa Drive Suite A		City: San Luis Obispo	State/Province: CA
Zip/Postal Code: 93401	Country: US	Telephone #: 909-362-3942	Fax #:
Report To (Name): Melissa Baernstein		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
Email Address: melissa.baernstein@stantec.com		Purchase Order:	
Project Name/Number: 185850429.300.0006		EMSL Project ID (Internal Use Only):	
U.S. State Samples Taken: CA			
EMSL Bill-to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different: If Bill-to is different, note instructions in comments/special instructions below. Third-party billing requires written authorization.			
Turnaround Time (TAT) Options - Please Check			
<input type="checkbox"/> 3 Hour* <input checked="" type="checkbox"/> 6 Hour <input type="checkbox"/> 24 Hour <input checked="" type="checkbox"/> 48 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> 96 Hour <input type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week <input type="checkbox"/> 4-4.5hr TAT (AHERA only)			
*TEM Air 3 hr., please call ahead to schedule. There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT.			
<b>PCM - Air</b> <input checked="" type="checkbox"/> NIOSH 7400 <input type="checkbox"/> w/ OSHA 8hr. TWA <b>PLM - Bulk (Reporting Limit)</b> <input type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) <input type="checkbox"/> 400 (<0.25%) Point Count <input type="checkbox"/> 400 (<0.25%) Point Count with Gravimetric Reduction <input type="checkbox"/> 1000 (<0.1%) Point Count <input type="checkbox"/> 1000 (<0.1%) Point Count with Gravimetric Reduction <input type="checkbox"/> NIOSH 9002 (<1%) <b>TEM - Water: EPA 100.2</b> Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking		<b>TEM - Air</b> <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> EPA Level II <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> ISO 10312 <b>TEM - Bulk</b> <input type="checkbox"/> TEM EPA NOB <input type="checkbox"/> Chatfield SOP <input type="checkbox"/> TEM EPA 600/R-93/116 with Milling Prep (<0.1%)* *Lower reporting limits available <b>TEM - Dust</b> <input type="checkbox"/> Microvac - ASTM D 5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167)	
		<b>Soil/Rock/Vermiculite (Reporting Limit)</b> <input type="checkbox"/> PLM CARB 435 - A (0.25%) <input type="checkbox"/> PLM CARB 435 - B (0.1%) <input type="checkbox"/> TEM CARB 435 - B (0.1%)* <input type="checkbox"/> TEM CARB 435 - C (0.01%)* <input type="checkbox"/> TEM Qualitative via Filtration Prep <input type="checkbox"/> TEM Qualitative via Drop Mount Prep <input type="checkbox"/> PLM EPA 600/R-93/116 with Milling Prep (<1%) <input type="checkbox"/> PLM EPA 600/R-93/116 with Milling Prep (<0.25%) <input type="checkbox"/> TEM EPA 600/R-93/116 with Milling Prep (<0.1%)* *Lower reporting limits available <b>Other</b> <input type="checkbox"/>	
<input type="checkbox"/> Stop At First Positive (Clearly identify homogenous groups below)		Filter Pore Size (Air Samples): <input checked="" type="checkbox"/> 0.8µm <input type="checkbox"/> 0.4µm	
Sampler's Name: Melissa Baernstein		Sampler's Signature: <i>Melissa Baernstein</i>	
Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
	See attached log		
Client Sample # (s): 20170929-01 - 20170929-12		Total # of Samples: 12	
Relinquished (Client): <i>Melissa Baernstein</i>		Date: 09/29/17 Time: 14:14	
Received (Lab): <i>Beb</i>		Date: 10/2/17 Time: 9:10	
Comments/Special Instructions:			



# Stantec

3437 Impreza Drive, Suite A  
San Luis Obispo, CA 93401  
(805) 250-2854

## Air Sampling Record

Date: 09/29/17

Project Name: Farmer Northern Landfill Client: Phillips 66

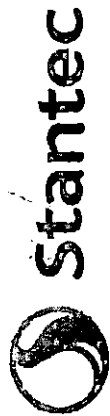
Laboratory: EMSL

Project #: 185850429.300.0006

Calibration Source: 1858-01

Collected &amp; Calibrated by: M. Baerstein

Sample No.	Sample Location	Sample Type	Media Type	Start Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
20170929-01	N perimeter	PCM	25mm, 0.8um	07:16	127	10.54	10.60	1,353.82	no wind
		TEM	25mm, 0.45um	09:23		10.78			
20170929-02	E perimeter	PCM	25mm, 0.8um	07:18	129	10.54	10.54	1,359.66	no wind
		TEM	25mm, 0.45um	09:27		10.54			
20170929-03	S perimeter	PCM	25mm, 0.8um	07:20	131	10.54	10.47	1,364.63	no wind
		TEM	25mm, 0.45um	09:31		10.295			
20170929-04	W perimeter	PCM	25mm, 0.8um	07:22	132	10.54	10.54	1,391.28	no wind
		TEM	25mm, 0.45um	09:34		10.54			
20170929-05	N perimeter	PCM	25mm, 0.8um	09:25	123	10.54	10.54	1,296.42	Comments sustained 30 mph, gusts 16.0 mph westerly
		TEM	25mm, 0.45um	11:28		10.54			
20170929-06	E perimeter	PCM	25mm, 0.8um	09:28	124	10.54	10.47	1,291.71	downwind
		TEM	25mm, 0.45um	11:32		10.295			
20170929-07	S perimeter	PCM	25mm, 0.8um	09:32	124	10.54	10.54	1,306.96	crosswind
		TEM	25mm, 0.45um	11:36		10.54			
20170929-08	W perimeter	PCM	25mm, 0.8um	09:36	123	10.54	10.54	1,296.42	upwind
		TEM	25mm, 0.45um	11:39		10.54			
20170929-09	N perimeter	PCM	25mm, 0.8um	11:30	124	10.54	10.54	1,306.96	Comments sustained wind 4.0-6.0 mph westerly
		TEM	25mm, 0.45um	13:24		10.54			
20170929-10	E perimeter	PCM	25mm, 0.8um	11:34	123	10.54	10.66	1,311.18	downwind
		TEM	25mm, 0.45um	13:37		10.78			



3437 Impreza Drive, Suite A  
San Luis Obispo, CA 93401  
(805) 250-2854

## Air Sampling Record

Date: 09/29/17

Project Name: Farmer Northern Levittell Client: Phillip Cel

Project #: 18585N429.300.0006 Laboratory: EMSL

Collected &amp; Calibrated by: M. Baerstein Calibration Source: 1858-01

Sample No. 20170929-11	Sample Type <input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	Media Type <input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time 11:37	Stop Time 12:40	Total Time 123	Pre (LPM) 10.54	Average (LPM) 10.54	Volume (L) 1,296.42	Comments Sustained wind 4.0 mph - 6.0 mph
Sample Location Sportmeter									
Sample No. 20170929-12	Sample Type <input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	Media Type <input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time 11:40	Stop Time 12:43	Total Time 123	Pre (LPM) 10.54	Average (LPM) 10.54	Volume (L) 1,296.42	Comments crosswind
Sample Location W perimeter									
Sample No.	Sample Type <input type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	Media Type <input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time	Stop Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
Sample Location									
Sample No.	Sample Type <input type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	Media Type <input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time	Stop Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
Sample Location									
Sample No.	Sample Type <input type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	Media Type <input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time	Stop Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
Sample Location									
Sample No.	Sample Type <input type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	Media Type <input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time	Stop Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
Sample Location									
Sample No.	Sample Type <input type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	Media Type <input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time	Stop Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
Sample Location									
Sample No.	Sample Type <input type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	Media Type <input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time	Stop Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
Sample Location									
Sample No.	Sample Type <input type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	Media Type <input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time	Stop Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
Sample Location									
Sample No.	Sample Type <input type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	Media Type <input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time	Stop Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
Sample Location									

CINNAMINSON, N.J.  
2017 OCT - 2 A 10:26



# EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

Tel/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com/cinnaslab@EMSL.com>

EMSL Order: 041729125

Customer ID: 32STAN25

Customer PO:

Project ID:

**Attention:** Melissa Baernstein  
Stantec Consulting Services Inc  
3437 Empresa Drive  
Suite A  
San Luis Obispo, CA 93401

**Project:** 185850429.300.0007 / Former Northern Landfill

**Phone:** (805) 546-0455

**Fax:**

**Received Date:** 10/05/2017 9:20 AM

**Analysis Date:** 10/05/2017

**Collected Date:** 10/03/2017

## Test Report: Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method - A Rules, Revision 3, Issue 2, 8/15/94

Sample	Location	Sample Date	Volume (liters)	Fibers	Fields	LOD (fib/cc)	Fibers/mm <sup>2</sup>	Fibers/cc	Notes
20171003-01	N Perimeter	10/03/2017	1354.21	6	100	0.002	7.64	0.002	
041729125-0001									
20171003-02	E Perimeter	10/03/2017	1380.74	<5.5	100	0.002	<7.01	<0.002	
041729125-0002									
20171003-03	S Perimeter	10/03/2017	1375.04	6	100	0.002	7.64	0.002	
041729125-0003									
20171003-04	W Perimeter	10/03/2017	1410.87	<5.5	100	0.002	<7.01	<0.002	
041729125-0004									
20171003-05	N Perimeter	10/03/2017	1401.82	7	100	0.002	8.92	0.002	
041729125-0005									
20171003-06	E Perimeter	10/03/2017	1380.74	6	100	0.002	7.64	0.002	
041729125-0006									
20171003-07	S Perimeter	10/03/2017	1370.20	<5.5	100	0.002	<7.01	<0.002	
041729125-0007									
20171003-08	W Perimeter	10/03/2017	1349.12	<5.5	100	0.002	<7.01	<0.002	
041729125-0008									
20171003-09	N Perimeter	10/03/2017	1231.56	<5.5	100	0.002	<7.01	<0.002	
041729125-0009									
20171003-10	E Perimeter	10/03/2017	1258.00	<5.5	100	0.002	<7.01	<0.002	
041729125-0010									
20171003-11	S Perimeter	10/03/2017	1219.12	<5.5	100	0.002	<7.01	<0.002	
041729125-0011									
20171003-12	W Perimeter	10/03/2017	1231.56	<5.5	100	0.002	<7.01	<0.002	
041729125-0012									

This method requires the submission of field blanks with each sample set. No discernable field blanks were submitted, samples are not blank corrected.

Limit of detection is 7 fibers/mm<sup>2</sup>. Intra-laboratory Sr values: 5-20 fibers = 0.36, 21-50 fibers = 0.39, 51-100 fibers = 0.22. Inter-laboratory Sr values (Average of EMSL round robin data) = 0.30. EMSL maintains liability limited to cost of analysis. 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. Interpretation and use of test results are the responsibility of the client. EMSL is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. Results have been blank corrected as applicable. The results in this report meet all requirements of the NELAC standards unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NYS ELAP 10872, AIHA-LAP, LLC-IHLAP Accredited #100194, NJ DEP 03036, PA ID# 68-00367

Report amended: 10/06/2017 06:52:18 Replaces initial report from: 10/05/2017 22:29:45 Reason Code: Data Entry-Change to Appearance





# EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

Tel/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com> / [cinnasblab@EMSL.com](mailto:cinnasblab@EMSL.com)

EMSL Order: 041729125

Customer ID: 32STAN25

Customer PO:

Project ID:

**Attention:** Melissa Baernstein  
Stantec Consulting Services Inc  
3437 Empresa Drive  
Suite A  
San Luis Obispo, CA 93401

**Project:** 185850429.300.0007 / Former Northern Landfill

**Phone:** (805) 546-0455

**Fax:**

**Received Date:** 10/05/2017 9:20 AM

**Analysis Date:** 10/05/2017

**Collected Date:** 10/03/2017

## Test Report: Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method - A Rules, Revision 3, Issue 2, 8/15/94

Sample	Location	Sample Date	Volume (liters)	Fibers	Fields	LOD (fib/cc)	Fibers/ mm <sup>2</sup>	Fibers/ cc	Notes
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Analyst(s):

Susan Muir PCM (12)

Benjamin Ellis, Laboratory Manager  
or Other Approved Signatory

Limit of detection is 7 fibers/mm<sup>2</sup>. Intra-laboratory Sr values: 5-20 fibers = 0.36, 21-50 fibers = 0.39, 51-100 fibers = 0.22. Inter-laboratory Sr values (Average of EMSL round robin data) = 0.30. EMSL maintains liability limited to cost of analysis. 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. Interpretation and use of test results are the responsibility of the client. EMSL is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. Results have been blank corrected as applicable. The results in this report meet all requirements of the NELAC standards unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NYS ELAP 10872, AIHA-LAP, LLC-IHLAP Accredited #100194, NJ DEP 03036, PA ID# 68-00367

Report amended: 10/06/2017 06:52:18 Replaces initial report from: 10/05/2017 22:29:45 Reason Code: Data Entry-Change to Appearance

EMSL ANALYTICAL, INC.  
LABORATORY PRODUCTS TRAINING

## Asbestos Chain of Custody

EMSL Order Number (Lab Use Only):

041729125

REC'D  
EMSL  
CINNAMINSON, N.J.2017 OCT -5 A 10:32  
PHONE:  
FAX:

Company Name : Stantec Consulting Services, Inc.		EMSL Customer ID:	
Street: 3437 Empresa Drive, Suite A		City: San Luis Obispo	State/Province: CA
Zip/Postal Code: 93401	Country: USA	Telephone #: 909-362-3942	Fax #: 909-335-6120
Report To (Name): Melissa Baernstein		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
Email Address: Melissa.Baernstein@stantec.com		Purchase Order:	
Project Name/Number: 185850429.300.0007		EMSL Project ID (Internal Use Only):	
U.S. State Samples Taken: California		CT Samples: <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt	
EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different - If Bill to is Different note instructions in Comments** Third Party Billing requires written authorization from third party			
Turnaround Time (TAT) Options* - Please Check			
<input type="checkbox"/> 3 Hour <input type="checkbox"/> 6 Hour <input type="checkbox"/> 24 Hour <input checked="" type="checkbox"/> 48 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> 96 Hour <input type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week			
*For TEM Air 3 hr through 6 hr, please call ahead to schedule. There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.			
<b>PCM - Air</b> <input type="checkbox"/> Check if samples are from NY NIOSH 7400 <input type="checkbox"/> w/ OSHA 8hr. TWA <b>PLM - Bulk (reporting limit)</b> <input type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) <input type="checkbox"/> NYS 198.1 (friable in NY) <input type="checkbox"/> NYS 198.6 NOB (non-friable-NY) <input type="checkbox"/> NYS 198.8 SOF-V <input type="checkbox"/> NIOSH 9002 (<1%)		<b>TEM - Air</b> <input type="checkbox"/> 4-4.5hr TAT (AHERA only) <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> EPA Level II <input type="checkbox"/> ISO 10312 <b>TEM - Bulk</b> <input type="checkbox"/> TEM EPA NOB <input type="checkbox"/> NYS NOB 198.4 (non-friable-NY) <input type="checkbox"/> Chatfield SOP <input type="checkbox"/> TEM Mass Analysis-EPA 600 sec. 2.5 <b>TEM - Water:</b> EPA 100.2 Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking	
<b>TEM - Dust</b> <input type="checkbox"/> Microvac - ASTM D 5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167)		<b>Soil/Rock/Vermiculite</b> <input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (<1%) <input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (<0.25%) <input type="checkbox"/> TEM EPA 600/R-93/116 with milling prep (<0.1%) <input type="checkbox"/> TEM Qualitative via Filtration Prep <input type="checkbox"/> TEM Qualitative via Drop Mount Prep <input type="checkbox"/> Cincinnati Method EPA 600/R-04/004 - PLM/TEM (BC only)	
<input type="checkbox"/> Check For Positive Stop - Clearly Identify Homogenous Group		Filter Pore Size (Air Samples): <input checked="" type="checkbox"/> 0.8µm <input type="checkbox"/> 0.45µm	
Samplers Name: Melissa Baernstein		Samplers Signature: <i>Melissa Baernstein</i>	
Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
	See attached logs		
Client Sample # (s): 20171003-01 - 20171003-12		Total # of Samples: 12	
Relinquished (Client): <i>Melissa Baernstein</i>		Date: 10/03/17	Time: 10:16
Received (Lab): <i>CMX</i>		Date: 10-5-17	Time: 9:20
Comments/Special Instructions:		<div style="border: 1px solid black; border-radius: 50%; padding: 10px; display: inline-block;">         12 pul       </div>	

**Stantec**  
 3435 Sample 20 Drive, Suite A  
 San Luis Obispo, CA 93401  
 (805) 250-2854

## Air Sampling Record

Date: 10/23/17

Project Name: Former Northern Landfill Client: Phillips 66Project #: 185850429.300.0007 Laboratory: EMSLCollected & Calibrated by: M. Baernstein Calibration Source: 1858-01

Sample No.	Sample Location	Sample Type	Media Type	Start Time	Total Time	Pre (LPM)	Post (LPM)	Average (LPM)	Volume (L)	Comments
20171003-01	N perimeter	<input checked="" type="checkbox"/> PCM <input checked="" type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	07:19	130	10.54	10.295	10.417	1,354.21	Comments Sustained wind 0.0 mph - 3.5 westerly
20171003-02	N perimeter	<input checked="" type="checkbox"/> PCM <input checked="" type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	07:22	131	10.54	10.54	10.54	1,380.74	downwind
20171003-03	E perimeter	<input checked="" type="checkbox"/> PCM <input checked="" type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	07:25	132	10.54	10.295	10.417	1,375.04	downwind
20171003-04	W perimeter	<input checked="" type="checkbox"/> PCM <input checked="" type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	07:27	131	10.54	10.00	10.77	1,410.87	upwind
20171003-05	N perimeter	<input checked="" type="checkbox"/> PCM <input checked="" type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:31	133	10.54	10.54	10.54	1,401.82	Comments Sustained wind 1.0 mph - 2.5 mph westerly
20171003-06	E perimeter	<input checked="" type="checkbox"/> PCM <input checked="" type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:35	131	10.54	10.54	10.54	1,380.74	downwind
20171003-07	S perimeter	<input checked="" type="checkbox"/> PCM <input checked="" type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:39	130	10.54	10.54	10.54	1,370.20	downwind
20171003-08	W perimeter	<input checked="" type="checkbox"/> PCM <input checked="" type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:43	128	10.54	10.54	10.54	1,349.12	downwind
20171003-09	N perimeter	<input checked="" type="checkbox"/> PCM <input checked="" type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	13:02	99	12.58	12.31	12.44	1,231.56	Comments Sustained wind 7.0 mph - 10.0 mph westerly
20171003-10	E perimeter	<input checked="" type="checkbox"/> PCM <input checked="" type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	13:05	100	12.58	12.58	12.58	1,258	downwind



**Air Sampling Record** Date: 10/03/17  
Project Name: Former Northern Landfill Client: Phillips 66  
Project #: 18550429.300.0007 Laboratory: SMSL  
Collected & Calibrated by: M. Baermeister Calibration Source: 1858-01

Calibration Source: 1858-61

Sample No. 20171003-11	Sample Type <input checked="" type="checkbox"/> PCM	Media Type <input checked="" type="checkbox"/> 25mm, 0.8um	Start Time 13:10	Total Time 108	Pre (LPM) 12.58	Average (LPM)	Volume (L)	Comments Sustained wind 7.0-10.0 mph westerly
Sample Location <i>perimeter</i>	<input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Stop Time 14:48	98	Post (LPM) 12.31	12.44	1,129.12	Cross wind
Sample No. 20171003-12	Sample Type <input checked="" type="checkbox"/> PCM	Media Type <input checked="" type="checkbox"/> 25mm, 0.8um	Start Time 13:13	Total Time 99	Pre (LPM) 12.58	Average (LPM)	Volume (L)	Comments
Sample Location <i>W perimeter</i>	<input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Stop Time 14:52	99	Post (LPM) 12.31	12.44	1,231.56	upwind
Sample No.	Sample Type <input type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	Media Type <input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/> Clearance		Stop Time		Post (LPM)			
Sample No.	Sample Type <input type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	Media Type <input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/> Clearance		Stop Time		Post (LPM)			
Sample No.	Sample Type <input type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	Media Type <input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/> Clearance		Stop Time		Post (LPM)			
Sample No.	Sample Type <input type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	Media Type <input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/> Clearance		Stop Time		Post (LPM)			
Sample No.	Sample Type <input type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	Media Type <input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/> Clearance		Stop Time		Post (LPM)			
Sample No.	Sample Type <input type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	Media Type <input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/> Clearance		Stop Time		Post (LPM)			
Sample No.	Sample Type <input type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	Media Type <input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/> Clearance		Stop Time		Post (LPM)			
Sample No.	Sample Type <input type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	Media Type <input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/> Clearance		Stop Time		Post (LPM)			
Sample No.	Sample Type <input type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	Media Type <input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/> Clearance		Stop Time		Post (LPM)			
Sample No.	Sample Type <input type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	Media Type <input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/> Clearance		Stop Time		Post (LPM)			
Sample No.	Sample Type <input type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	Media Type <input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/> Clearance		Stop Time		Post (LPM)			
Sample No.	Sample Type <input type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	Media Type <input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/> Clearance		Stop Time		Post (LPM)			
Sample No.	Sample Type <input type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	Media Type <input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/> Clearance		Stop Time		Post (LPM)			
Sample No.	Sample Type <input type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	Media Type <input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/> Clearance		Stop Time		Post (LPM)			
Sample No.	Sample Type <input type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	Media Type <input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/> Clearance		Stop Time		Post (LPM)			
Sample No.	Sample Type <input type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	Media Type <input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/> Clearance		Stop Time		Post (LPM)			
Sample No.	Sample Type <input type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	Media Type <input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
Sample Location	<input type="checkbox"/> Lead <input type="checkbox"/> Clearance		Stop Time		Post (LPM)			
Sample No.	Sample Type <input type="checkbox"/> PCM <input type="checkbox"/> Area <input type="checkbox"/> TEM <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	Media Type <input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
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# EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

Tel/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com/cinnaslab@EMSL.com>

EMSL Order: 041729126

Customer ID: 32STAN25

Customer PO:

Project ID:

**Attention:** Melissa Baernstein  
Stantec Consulting Services Inc  
3437 Empresa Drive  
Suite A  
San Luis Obispo, CA 93401

**Project:** 185850429.300.0007 / Former Northern Landfill / Phillips 66

**Phone:** (805) 546-0455

**Fax:**

**Received Date:** 10/05/2017 9:20 AM

**Analysis Date:** 10/05/2017

**Collected Date:** 10/02/2017

## Test Report: Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method - A Rules, Revision 3, Issue 2, 8/15/94

Sample	Location	Sample Date	Volume (liters)	Fibers	Fields	LOD (fib/cc)	Fibers/mm <sup>2</sup>	Fibers/cc	Notes
20171002-01	N Perimeter	10/02/2017	1317.50	9	100	0.002	11.5	0.003	
041729126-0001									
20171002-02	E Perimeter	10/02/2017	1338.58	10	100	0.002	12.7	0.004	
041729126-0002									
20171002-03	S Perimeter	10/02/2017	1338.58	<5.5	100	0.002	<7.01	<0.002	
041729126-0003									
20171002-04	W Perimeter	10/02/2017	1345.28	<5.5	100	0.002	<7.01	<0.002	
041729126-0004									
20171002-05	N Perimeter	10/02/2017	1401.82	<5.5	100	0.002	<7.01	<0.002	
041729126-0005									
20171002-06	E Perimeter	10/02/2017	1401.82	<5.5	100	0.002	<7.01	<0.002	
041729126-0006									
20171002-07	S Perimeter	10/02/2017	1391.28	11	100	0.002	14.0	0.004	
041729126-0007									
20171002-08	W Perimeter	10/02/2017	1407.12	<5.5	100	0.002	<7.01	<0.002	
041729126-0008									
20171002-09	N Perimeter	10/02/2017	1258.00	7	100	0.002	8.92	0.003	
041729126-0009									
20171002-10	E Perimeter	10/02/2017	1258.00	<5.5	100	0.002	<7.01	<0.002	
041729126-0010									
20171002-11	S Perimeter	10/02/2017	1232.84	7	100	0.002	8.92	0.003	
041729126-0011									
20171002-12	W Perimeter	10/02/2017	1232.84	<5.5	100	0.002	<7.01	<0.002	
041729126-0012									

This method requires the submission of field blanks with each sample set. No discernable field blanks were submitted, samples are not blank corrected.

Limit of detection is 7 fibers/mm<sup>2</sup>. Intra-laboratory Sr values: 5-20 fibers = 0.36, 21-50 fibers = 0.39, 51-100 fibers = 0.22. Inter-laboratory Sr values (Average of EMSL round robin data) = 0.30. EMSL maintains liability limited to cost of analysis. 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. Interpretation and use of test results are the responsibility of the client. EMSL is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. Results have been blank corrected as applicable. The results in this report meet all requirements of the NELAC standards unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NYS ELAP 10872, AIHA-LAP, LLC-IHLAP Accredited #100194, NJ DEP 03036, PA ID# 68-00367

Initial report from: 10/05/2017 23:21:36



# EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

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<http://www.EMSL.com> / [cinnasblab@EMSL.com](mailto:cinnasblab@EMSL.com)

EMSL Order: 041729126

Customer ID: 32STAN25

Customer PO:

Project ID:

**Attention:** Melissa Baernstein  
Stantec Consulting Services Inc  
3437 Empresa Drive  
Suite A  
San Luis Obispo, CA 93401

**Project:** 185850429.300.0007 / Former Northern Landfill / Phillips 66

**Phone:** (805) 546-0455

**Fax:**

**Received Date:** 10/05/2017 9:20 AM

**Analysis Date:** 10/05/2017

**Collected Date:** 10/02/2017

## Test Report: Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method - A Rules, Revision 3, Issue 2, 8/15/94

Sample	Location	Sample Date	Volume (liters)	Fibers	Fields	LOD (fib/cc)	Fibers/ mm <sup>2</sup>	Fibers/ cc	Notes
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Analyst(s):

Susan Muir PCM (12)

Benjamin Ellis, Laboratory Manager  
or Other Approved Signatory

Limit of detection is 7 fibers/mm<sup>2</sup>. Intra-laboratory Sr values: 5-20 fibers = 0.36, 21-50 fibers = 0.39, 51-100 fibers = 0.22. Inter-laboratory Sr values (Average of EMSL round robin data) = 0.30. EMSL maintains liability limited to cost of analysis. 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. Interpretation and use of test results are the responsibility of the client. EMSL is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. Results have been blank corrected as applicable. The results in this report meet all requirements of the NELAC standards unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NYS ELAP 10872, AIHA-LAP, LLC-IHLAP Accredited #100194, NJ DEP 03036, PA ID# 68-00367

Initial report from: 10/05/2017 23:21:36





EMSL ANALYTICAL, INC.  
LABORATORY • PRODUCTS • TRAINING

# Asbestos Chain of Custody For California Samples

EMSL Order Number (Lab Use Only):

041729126

EMSL Analytical, Inc.

200 Route 130 North

EMSL  
CINNAMINSON, NJ 08077

PHONE: 1-800-220-3675

FAX: (856) 786-5974

Company Name : Stantec Consulting Services Inc.		EMSL Customer ID:	
Street: 3437 Empresa Drive Suite A		City: San Luis Obispo	State/Province: CA
Zip/Postal Code: 93401	Country: US	Telephone #: 909-362-3942	Fax #:
Report To (Name): Melissa Baernstein		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
Email Address: melissa.baernstein@stantec.com		Purchase Order:	
Project Name/Number: 185850429.300.0009		EMSL Project ID (Internal Use Only):	
U.S. State Samples Taken: CA			
EMSL Bill-to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different: If Bill-to is different, note instructions in comments/special instructions below. Third-party billing requires written authorization.			
Turnaround Time (TAT) Options – Please Check			
<input type="checkbox"/> 3 Hour* <input checked="" type="checkbox"/> 6 Hour <input type="checkbox"/> 24 Hour <input checked="" type="checkbox"/> 48 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> 96 Hour <input type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week <input type="checkbox"/> 4-4.5hr TAT (AHERA only)			
*TEM Air 3 hr., please call ahead to schedule. There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT.			
<b>PCM - Air</b> <input checked="" type="checkbox"/> NIOSH 7400 <input type="checkbox"/> w/ OSHA 8hr. TWA <b>PLM - Bulk (Reporting Limit)</b> <input type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) <input type="checkbox"/> 400 (<0.25%) Point Count <input type="checkbox"/> 400 (<0.25%) Point Count with Gravimetric Reduction <input type="checkbox"/> 1000 (<0.1%) Point Count <input type="checkbox"/> 1000 (<0.1%) Point Count with Gravimetric Reduction <input type="checkbox"/> NIOSH 9002 (<1%) <b>TEM - Water:</b> EPA 100.2 Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking		<b>TEM - Air</b> <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> EPA Level II <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> ISO 10312 <b>TEM - Bulk</b> <input type="checkbox"/> TEM EPA NOB <input type="checkbox"/> Chatfield SOP <input type="checkbox"/> TEM EPA 600/R-93/116 with Milling Prep (<0.1%)* *Lower reporting limits available <b>TEM - Dust</b> <input type="checkbox"/> Microvac - ASTM D 5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167)	
		<b>Soil/Rock/Vermiculite (Reporting Limit)</b> <input type="checkbox"/> PLM CARB 435 - A (0.25%) <input type="checkbox"/> PLM CARB 435 - B (0.1%) <input type="checkbox"/> TEM CARB 435 - B (0.1%)* <input type="checkbox"/> TEM CARB 435 - C (0.01%)* <input type="checkbox"/> TEM Qualitative via Filtration Prep <input type="checkbox"/> TEM Qualitative via Drop Mount Prep <input type="checkbox"/> PLM EPA 600/R-93/116 with Milling Prep (<1%) <input type="checkbox"/> PLM EPA 600/R-93/116 with Milling Prep (<0.25%) <input type="checkbox"/> TEM EPA 600/R-93/116 with Milling Prep (<0.1%)* *Lower reporting limits available <b>Other</b> <input type="checkbox"/>	
<input type="checkbox"/> Stop At First Positive (Clearly identify homogenous groups below)		Filter Pore Size (Air Samples): <input checked="" type="checkbox"/> 0.8µm <input type="checkbox"/> 0.45µm	
Sampler's Name: Melissa Baernstein		Sampler's Signature: <i>Melissa Baernstein</i>	
Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
	See attached log		
Client Sample # (s): 20171002-01 - 20171002-12		Total # of Samples: 12	
Relinquished (Client): <i>Melissa Baernstein</i>		Date: 10/03/17	Time: 16:16
Received (Lab): <i>[Signature]</i>		Date: 10-5-17	Time: 9:20a
Comments/Special Instructions:			



041729126

## Air Sampling Record

Date: 10/02/17

Client: Phillips Co

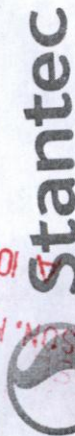
Project Name: Former Northern Landfill

Laboratory: EMSL

Project #: 18533429

Calibration Source: 1858-01

Collected &amp; Calibrated by: M. Baernstein



3437 Impreza Drive, Suite A  
San Luis Obispo, CA 93401  
(805) 250-2854

Sample No.	Sample Location	Sample Type	Media Type	Start Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
20171002-01	N perimeter	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time: 08:47 Stop Time: 10:52	125	Pre (LPM): 10.54 Post (LPM): 10.54	10.54	1,137.50	Comments: Sustained wind 0.0 mph - 3.0 mph westerly gusts @ 10:00 3.0 (s) 6.0 (g) crosswind
20171002-02	N perimeter	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time: 08:49 Stop Time: 10:56	127	Pre (LPM): 10.54 Post (LPM): 10.54	10.54	1,338.58	downwind
20171002-03	E perimeter	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time: 08:53 Stop Time: 11:04	127	Pre (LPM): 10.54 Post (LPM): 10.54	10.54	1,338.58	crosswind
20171002-04	S perimeter	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time: 08:56 Stop Time: 11:04	128	Pre (LPM): 10.54 Post (LPM): 10.54	10.54	1,345.28	upwind
20171002-05	W perimeter	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time: 10:54 Stop Time: 13:07	133	Pre (LPM): 10.54 Post (LPM): 10.54	10.54	1,401.82	Comments: sustained wind 5.0 mph westerly
20171002-06	N perimeter	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time: 10:58 Stop Time: 13:11	133	Pre (LPM): 10.54 Post (LPM): 10.54	10.54	1,401.82	crosswind
20171002-07	E perimeter	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time: 11:02 Stop Time: 13:14	132	Pre (LPM): 10.54 Post (LPM): 10.54	10.54	1,391.28	downwind
20171002-08	S perimeter	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time: 11:06 Stop Time: 13:18	132	Pre (LPM): 10.54 Post (LPM): 10.54	10.54	1,401.12	crosswind
20171002-09	W perimeter	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time: 13:09 Stop Time: 14:49	100	Pre (LPM): 12.58 Post (LPM): 12.58	12.58	1,258	upwind
20171002-10	N perimeter	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time: 13:12 Stop Time: 14:52	100	Pre (LPM): 12.58 Post (LPM): 12.58	12.58	1,258	Comments: sustained wind 4.0 mph gusts 6.0 mph
20171002-11	E perimeter	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time: 13:12 Stop Time: 14:52	100	Pre (LPM): 12.58 Post (LPM): 12.58	12.58	1,258	crosswind
20171002-12	S perimeter	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Start Time: 13:12 Stop Time: 14:52	100	Pre (LPM): 12.58 Post (LPM): 12.58	12.58	1,258	downwind



## Air Sampling Record

Date: 10/02/17

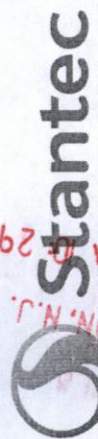
Project Name: Former Northern Landfill

Client: Polo

Project #: 185850429

Laboratory: **EMSL**

Collected & Calibrated by: M. Baernstein  
Calibration Source: 1858-01



3437 Impreza Drive, Suite A  
San Luis Obispo, CA 93401

Sample No.	Sample Location	Sample Type	Media Type	Start Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
20171002-11	S perimeter	<input checked="" type="checkbox"/> PCM	<input checked="" type="checkbox"/> Area	13:17	498	12:58	12.58	1,232.84	crosswind
		<input type="checkbox"/> TEM	<input type="checkbox"/> Blank	Stop Time		Post (LPM)		2,490.84	
		<input type="checkbox"/> Lead	<input type="checkbox"/> Clearance	14:55		12:58			
20171002-12	W perimeter	<input checked="" type="checkbox"/> PCM	<input checked="" type="checkbox"/> Area	13:21	498	12:58	12.58	1,232.84	upwind
		<input type="checkbox"/> TEM	<input type="checkbox"/> Blank	Stop Time		Post (LPM)		2	
		<input type="checkbox"/> Lead	<input type="checkbox"/> Clearance	14:59		12:58			
		<input type="checkbox"/> PCM	<input type="checkbox"/> Area	Start Time		Pre (LPM)		Volume (L)	
		<input type="checkbox"/> TEM	<input type="checkbox"/> Blank	Stop Time		Post (LPM)			
		<input type="checkbox"/> Lead	<input type="checkbox"/> Clearance	Start Time		Pre (LPM)		Volume (L)	
		<input type="checkbox"/> PCM	<input type="checkbox"/> Area	Start Time		Pre (LPM)		Volume (L)	
		<input type="checkbox"/> TEM	<input type="checkbox"/> Blank	Stop Time		Post (LPM)			
		<input type="checkbox"/> Lead	<input type="checkbox"/> Clearance	Start Time		Pre (LPM)		Volume (L)	
		<input type="checkbox"/> PCM	<input type="checkbox"/> Area	Start Time		Pre (LPM)		Volume (L)	
		<input type="checkbox"/> TEM	<input type="checkbox"/> Blank	Stop Time		Post (LPM)			
		<input type="checkbox"/> Lead	<input type="checkbox"/> Clearance	Start Time		Pre (LPM)		Volume (L)	
		<input type="checkbox"/> PCM	<input type="checkbox"/> Area	Start Time		Pre (LPM)		Volume (L)	
		<input type="checkbox"/> TEM	<input type="checkbox"/> Blank	Stop Time		Post (LPM)			
		<input type="checkbox"/> Lead	<input type="checkbox"/> Clearance	Start Time		Pre (LPM)		Volume (L)	
		<input type="checkbox"/> PCM	<input type="checkbox"/> Area	Start Time		Pre (LPM)		Volume (L)	
		<input type="checkbox"/> TEM	<input type="checkbox"/> Blank	Stop Time		Post (LPM)			
		<input type="checkbox"/> Lead	<input type="checkbox"/> Clearance	Start Time		Pre (LPM)		Volume (L)	
		<input type="checkbox"/> PCM	<input type="checkbox"/> Area	Start Time		Pre (LPM)		Volume (L)	
		<input type="checkbox"/> TEM	<input type="checkbox"/> Blank	Stop Time		Post (LPM)			
		<input type="checkbox"/> Lead	<input type="checkbox"/> Clearance	Start Time		Pre (LPM)		Volume (L)	
		<input type="checkbox"/> PCM	<input type="checkbox"/> Area	Start Time		Pre (LPM)		Volume (L)	
		<input type="checkbox"/> TEM	<input type="checkbox"/> Blank	Stop Time		Post (LPM)			
		<input type="checkbox"/> Lead	<input type="checkbox"/> Clearance	Start Time		Pre (LPM)		Volume (L)	
		<input type="checkbox"/> PCM	<input type="checkbox"/> Area	Start Time		Pre (LPM)		Volume (L)	
		<input type="checkbox"/> TEM	<input type="checkbox"/> Blank	Stop Time		Post (LPM)			
		<input type="checkbox"/> Lead	<input type="checkbox"/> Clearance	Start Time		Pre (LPM)		Volume (L)	
		<input type="checkbox"/> PCM	<input type="checkbox"/> Area	Start Time		Pre (LPM)		Volume (L)	
		<input type="checkbox"/> TEM	<input type="checkbox"/> Blank	Stop Time		Post (LPM)			
		<input type="checkbox"/> Lead	<input type="checkbox"/> Clearance	Start Time		Pre (LPM)		Volume (L)	
		<input type="checkbox"/> PCM	<input type="checkbox"/> Area	Start Time		Pre (LPM)		Volume (L)	
		<input type="checkbox"/> TEM	<input type="checkbox"/> Blank	Stop Time		Post (LPM)			
		<input type="checkbox"/> Lead	<input type="checkbox"/> Clearance	Start Time		Pre (LPM)		Volume (L)	
		<input type="checkbox"/> PCM	<input type="checkbox"/> Area	Start Time		Pre (LPM)		Volume (L)	
		<input type="checkbox"/> TEM	<input type="checkbox"/> Blank	Stop Time		Post (LPM)			
		<input type="checkbox"/> Lead	<input type="checkbox"/> Clearance	Start Time		Pre (LPM)		Volume (L)	
		<input type="checkbox"/> PCM	<input type="checkbox"/> Area	Start Time		Pre (LPM)		Volume (L)	
		<input type="checkbox"/> TEM	<input type="checkbox"/> Blank	Stop Time		Post (LPM)			
		<input type="checkbox"/> Lead	<input type="checkbox"/> Clearance	Start Time		Pre (LPM)		Volume (L)	



# EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

Tel/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com/cinnaslab@EMSL.com>

EMSL Order: 041729258

Customer ID: 32STAN25

Customer PO:

Project ID:

**Attention:** Melissa Baernstein  
Stantec Consulting Services Inc  
3437 Empresa Drive  
Suite A  
San Luis Obispo, CA 93401

**Project:** 185850429.300.0007 / Former Northern Landfill / Phillips 66

**Phone:** (805) 546-0455

**Fax:**

**Received Date:** 10/06/2017 9:20 AM

**Analysis Date:** 10/06/2017

**Collected Date:** 10/04/2017

## Test Report: Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method - A Rules, Revision 3, Issue 2, 8/15/94

Sample	Location	Sample Date	Volume (liters)	Fibers	Fields	LOD (fib/cc)	Fibers/mm <sup>2</sup>	Fibers/cc	Notes
20171004-01	N Perimeter	10/04/2017	1517.76	12	100	0.002	15.3	0.004	
041729258-0001									
20171004-02	E Perimeter	10/04/2017	1510.47	<5.5	100	0.002	<7.01	<0.002	
041729258-0002									
20171004-03	S Perimeter	10/04/2017	1556.36	<5.5	100	0.002	<7.01	<0.002	
041729258-0003									
20171004-04	W Perimeter	10/04/2017	1549.38	<5.5	100	0.002	<7.01	<0.002	
041729258-0004									
20171004-05	N Perimeter	10/04/2017	1528.30	10	100	0.002	12.7	0.003	
041729258-0005									
20171004-06	E Perimeter	10/04/2017	1507.22	7	100	0.002	8.92	0.002	
041729258-0006									
20171004-07	S Perimeter	10/04/2017	1507.22	<5.5	100	0.002	<7.01	<0.002	
041729258-0007									
20171004-08	W Perimeter	10/04/2017	1496.68	8	100	0.002	10.2	0.003	
041729258-0008									
20171004-09	N Perimeter	10/04/2017	1222.64	<5.5	100	0.002	<7.01	<0.002	
041729258-0009									
20171004-10	E Perimeter	10/04/2017							Overloaded
041729258-0010									
20171004-11	S Perimeter	10/04/2017							Overloaded
041729258-0011									
20171004-12	W Perimeter	10/04/2017							Overloaded
041729258-0012									

This method requires the submission of field blanks with each sample set. No discernable field blanks were submitted, samples are not blank corrected.

Limit of detection is 7 fibers/mm<sup>2</sup>. Intra-laboratory Sr values: 5-20 fibers = 0.36, 21-50 fibers = 0.39, 51-100 fibers = 0.22. Inter-laboratory Sr values (Average of EMSL round robin data) = 0.30. EMSL maintains liability limited to cost of analysis. 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. Interpretation and use of test results are the responsibility of the client. EMSL is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. Results have been blank corrected as applicable. The results in this report meet all requirements of the NELAC standards unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NYS ELAP 10872, AIHA-LAP, LLC-IHLAP Accredited #100194, NJ DEP 03036, PA ID# 68-00367

Initial report from: 10/06/2017 21:09:35



# EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

Tel/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com> / [cinnasblab@EMSL.com](mailto:cinnasblab@EMSL.com)

EMSL Order: 041729258

Customer ID: 32STAN25

Customer PO:

Project ID:

**Attention:** Melissa Baernstein  
Stantec Consulting Services Inc  
3437 Empresa Drive  
Suite A  
San Luis Obispo, CA 93401

**Project:** 185850429.300.0007 / Former Northern Landfill / Phillips 66

**Phone:** (805) 546-0455

**Fax:**

**Received Date:** 10/06/2017 9:20 AM

**Analysis Date:** 10/06/2017

**Collected Date:** 10/04/2017

## Test Report: Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method - A Rules, Revision 3, Issue 2, 8/15/94

Sample	Location	Sample Date	Volume (liters)	Fibers	Fields	LOD (fib/cc)	Fibers/ mm <sup>2</sup>	Fibers/ cc	Notes
--------	----------	-------------	--------------------	--------	--------	-----------------	----------------------------	---------------	-------

Analyst(s):

Susan Muir PCM (12)

Benjamin Ellis, Laboratory Manager  
or Other Approved Signatory

Limit of detection is 7 fibers/mm<sup>2</sup>. Intra-laboratory Sr values: 5-20 fibers = 0.36, 21-50 fibers = 0.39, 51-100 fibers = 0.22. Inter-laboratory Sr values (Average of EMSL round robin data) = 0.30. EMSL maintains liability limited to cost of analysis. 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. Interpretation and use of test results are the responsibility of the client. EMSL is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. Results have been blank corrected as applicable. The results in this report meet all requirements of the NELAC standards unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NYS ELAP 10872, AIHA-LAP, LLC-IHLAP Accredited #100194, NJ DEP 03036, PA ID# 68-00367

Initial report from: 10/06/2017 21:09:35





EMSL ANALYTICAL, INC.  
LABORATORY • PRODUCTS • TRAINING

# Asbestos Chain of Custody

EMSL Order Number (Lab Use Only):

041729258

EMSL  
CINNAMINSON, N.J.  
PHONE:  
2017 OCT -6 11:04  
FAX:

Company Name : Stantec Consulting Services, Inc.		EMSL Customer ID:	
Street: 3437 Empresa Drive, Suite A		City: San Luis Obispo	State/Province: CA
Zip/Postal Code: 93401	Country: USA	Telephone #: 909-362-3942	Fax #: 909-335-6120
Report To (Name): Melissa Baernstein		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
Email Address: Melissa.Baernstein@stantec.com		Purchase Order:	
Project Name/Number: 185850429, 300,0007		EMSL Project ID (Internal Use Only):	
U.S. State Samples Taken: California		CT Samples: <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt	
EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different - If Bill to is Different note instructions in Comments** Third Party Billing requires written authorization from third party			
Turnaround Time (TAT) Options* - Please Check			
<input type="checkbox"/> 3 Hour <input type="checkbox"/> 6 Hour <input type="checkbox"/> 24 Hour <input checked="" type="checkbox"/> 48 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> 96 Hour <input type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week			
*For TEM Air 3 hr through 6 hr, please call ahead to schedule. *There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.			
<b>PCM - Air</b> <input type="checkbox"/> Check if samples are from NY <input checked="" type="checkbox"/> NIOSH 7400 <input type="checkbox"/> w/ OSHA 8hr. TWA <b>PLM - Bulk (reporting limit)</b> <input type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) <input type="checkbox"/> NYS 198.1 (friable in NY) <input type="checkbox"/> NYS 198.6 NOB (non-friable-NY) <input type="checkbox"/> NYS 198.8 SOF-V <input type="checkbox"/> NIOSH 9002 (<1%)		<b>TEM - Air</b> <input type="checkbox"/> 4-4.5hr TAT (AHERA only) <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> EPA Level II <input type="checkbox"/> ISO 10312 <b>TEM - Bulk</b> <input type="checkbox"/> TEM EPA NOB <input type="checkbox"/> NYS NOB 198.4 (non-friable-NY) <input type="checkbox"/> Chatfield SOP <input type="checkbox"/> TEM Mass Analysis-EPA 600 sec. 2.5 <b>TEM - Water:</b> EPA 100.2 Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking	
<b>TEM - Dust</b> <input type="checkbox"/> Microvac - ASTM D 5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167)		<b>Soil/Rock/Vermiculite</b> <input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (<1%) <input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (<0.25%) <input type="checkbox"/> TEM EPA 600/R-93/116 with milling prep (<0.1%) <input type="checkbox"/> TEM Qualitative via Filtration Prep <input type="checkbox"/> TEM Qualitative via Drop Mount Prep <input type="checkbox"/> Cincinnati Method EPA 600/R-04/004 - PLM/TEM (BC only)	
<input type="checkbox"/> Check For Positive Stop - Clearly Identify Homogenous Group		Filter Pore Size (Air Samples): <input checked="" type="checkbox"/> 0.8µm <input type="checkbox"/> 0.45µm	
Samplers Name: Melissa Baernstein		Samplers Signature: <i>McGinnis Baernstein</i>	
Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
	See attached logs		
Client Sample # (s): 20171004-01 - 20171004-12		Total # of Samples: 12 (ZCV)	
Relinquished (Client): <i>McGinnis Baernstein</i>		Date: 10/04/17	Time: 17:17
Received (Lab): <i>McGinnis Baernstein</i>		Date: 10-6-17	Time: 9:20am
Comments/Special Instructions:			

70

04172925A



**Stantec**

3437 Imperial Drive, Suite A  
San Luis Obispo, CA 93401  
(805) 250-2554

**Air Sampling Record**

Date: 10/04/17

Project Name: Former Northern Landfill

Client: Philips 66

Project #: 185850429.300.0007

Laboratory: EMSL

Collected & Calibrated by: M. Baernstein

Calibration Source: 1858-01

Sample No.	Sample Type	Media Type	Start Time	Total Time	Pre (PPM)	Average (PPM)	Volume (l)	Comments
20171004-01	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Area <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	07:11	144	10.54	10.54	1,517.76	Comments Sustained wind 8.0-2.0 mph NW
N perimeter	<input type="checkbox"/> Lead <input type="checkbox"/> Clearance		09:35	145	10.54	10.417	1,510.47	crosswind
20171004-02	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Area <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	07:14	145	10.54	10.417	1,510.47	cross/downwind
E perimeter	<input type="checkbox"/> Lead <input type="checkbox"/> Clearance		09:39	146	10.295	10.66	1,536.36	down/crosswind
20171004-03	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Area <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	07:17	146	10.54	10.66	1,536.36	down/crosswind
S perimeter	<input type="checkbox"/> Lead <input type="checkbox"/> Clearance		09:43	147	10.78	10.54	1,549.38	Comments Sustained wind 2.0 mph - 5.5 mph NW
20171004-04	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Area <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	07:19	147	10.54	10.54	1,549.38	cross/upwind
N perimeter	<input type="checkbox"/> Lead <input type="checkbox"/> Clearance		09:46	145	10.54	10.54	1,528.30	crosswind
20171004-05	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Area <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:37	143	10.54	10.54	1,507.22	cross/downwind
N perimeter	<input type="checkbox"/> Lead <input type="checkbox"/> Clearance		12:02	143	10.54	10.54	1,507.22	Comments
20171004-06	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Area <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:41	143	10.54	10.54	1,507.22	cross/downwind
E perimeter	<input type="checkbox"/> Lead <input type="checkbox"/> Clearance		12:04	142	10.54	10.54	1,496.68	crosswind
20171004-07	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Area <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:45	142	10.54	10.54	1,496.68	crosswind
S perimeter	<input type="checkbox"/> Lead <input type="checkbox"/> Clearance		12:08	142	10.54	10.54	1,496.68	Comments
20171004-08	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Area <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:48	142	10.54	10.54	1,496.68	crosswind
N perimeter	<input type="checkbox"/> Lead <input type="checkbox"/> Clearance		12:10	142	10.54	10.54	1,496.68	Comments
20171004-09	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Area <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	13:36	142	10.54	10.54	1,496.68	crosswind
N perimeter	<input type="checkbox"/> Lead <input type="checkbox"/> Clearance		15:32	142	10.54	10.54	1,496.68	Comments
20171004-10	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Area <input type="checkbox"/> Blank <input type="checkbox"/> Clearance	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	13:38	142	10.54	10.54	1,496.68	crosswind
E perimeter	<input type="checkbox"/> Lead <input type="checkbox"/> Clearance		15:34	142	10.54	10.54	1,496.68	Comments





# EMSL Analytical, Inc.

200 Route 130 North Cinnaminson, NJ 08077

Tel/Fax: (800) 220-3675 / (856) 786-5974

<http://www.EMSL.com/cinnaslab@EMSL.com>

EMSL Order: 041729272

Customer ID: 32STAN25

Customer PO:

Project ID:

**Attention:** Melissa Baernstein  
Stantec Consulting Services Inc  
3437 Empresa Drive  
Suite A  
San Luis Obispo, CA 93401

**Project:** 185850429 / Former Northern Landfill / Phillips 66

**Phone:** (805) 546-0455

**Fax:**

**Received Date:** 10/06/2017 9:20 AM

**Analysis Date:** 10/06/2017

**Collected Date:** 10/05/2017

## Test Report: Fiber Count by Phase Contrast Microscopy (PCM), NIOSH 7400 Method - A Rules, Revision 3, Issue 2, 8/15/94

Sample	Location	Sample Date	Volume (liters)	Fibers	Fields	LOD (fib/cc)	Fibers/mm <sup>2</sup>	Fibers/cc	Notes
20171005-01	N Perimeter	10/05/2017	1354.21	16	100	0.002	20.4	0.006	
041729272-0001									
20171005-02	E Perimeter	10/05/2017	1364.63	7	100	0.002	8.92	0.003	
041729272-0002									
20171005-03	S Perimeter	10/05/2017	1391.28	6	100	0.002	7.64	0.002	
041729272-0003									
20171005-04	W Perimeter	10/05/2017	1412.36	23	100	0.002	29.3	0.008	
041729272-0004									
20171005-05	N Perimeter	10/05/2017	1370.20	16	100	0.002	20.4	0.006	
041729272-0005									
20171005-06	E Perimeter	10/05/2017	1359.66	6	100	0.002	7.64	0.002	
041729272-0006									
20171005-07	S Perimeter	10/05/2017	1338.58	7	100	0.002	8.92	0.003	
041729272-0007									
20171005-08	W Perimeter	10/05/2017	1328.04	10	100	0.002	12.7	0.004	
041729272-0008									

This method requires the submission of field blanks with each sample set. No discernable field blanks were submitted, samples are not blank corrected.

Analyst(s):

Susan Muir PCM (8)

Benjamin Ellis, Laboratory Manager  
or Other Approved Signatory

Limit of detection is 7 fibers/mm<sup>2</sup>. Intra-laboratory Sr values: 5-20 fibers = 0.36, 21-50 fibers = 0.39, 51-100 fibers = 0.22. Inter-laboratory Sr values (Average of EMSL round robin data) = 0.30. EMSL maintains liability limited to cost of analysis. 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. Interpretation and use of test results are the responsibility of the client. EMSL is not responsible for data reported in fibers/cc, which is dependent on volume collected by non-laboratory personnel. Results have been blank corrected as applicable. The results in this report meet all requirements of the NELAP standards unless otherwise noted. Samples received in good condition unless otherwise noted.

Samples analyzed by EMSL Analytical, Inc. Cinnaminson, NJ NYS ELAP 10872, AIHA-LAP, LLC-IHLAP Accredited #100194, NJ DEP 03036, PA ID# 68-00367

Report amended: 10/09/2017 07:53:38 Replaces initial report from: 10/06/2017 20:15:21 Reason Code: Data Entry-Change to Appearance

EMSL ANALYTICAL, INC.  
LABORATORY PRODUCTS TRADING

## Asbestos Chain of Custody

EMSL Order Number (Lab Use Only):


041729272

 REC'D  
 EMSL  
 CINNAMINSON, N.J.  
 PHONE:  
 FAX:  
 2017 OCT -6 P 11:02

Company Name: Stantec Consulting Services, Inc.		EMSL Customer ID:	
Street: 3437 Empresa Drive, Suite A		City: San Luis Obispo	State/Province: CA
Zip/Postal Code: 93401	Country: USA	Telephone #: 909-362-3942	Fax #: 909-335-6120
Report To (Name): Melissa Baernstein		Please Provide Results: <input type="checkbox"/> Fax <input checked="" type="checkbox"/> Email	
Email Address: Melissa.Baernstein@stantec.com		Purchase Order:	
Project Name/Number: 185850429		EMSL Project ID (Internal Use Only):	
U.S. State Samples Taken: California		CT Samples: <input type="checkbox"/> Commercial/Taxable <input type="checkbox"/> Residential/Tax Exempt	
EMSL-Bill to: <input checked="" type="checkbox"/> Same <input type="checkbox"/> Different - If Bill to is Different note instructions in Comments** Third Party Billing requires written authorization from third party			
Turnaround Time (TAT) Options* - Please Check			
<input type="checkbox"/> 3 Hour <input type="checkbox"/> 6 Hour <input type="checkbox"/> 24 Hour <input checked="" type="checkbox"/> 48 Hour <input type="checkbox"/> 72 Hour <input type="checkbox"/> 96 Hour <input type="checkbox"/> 1 Week <input type="checkbox"/> 2 Week			
*For TEM Air 3 hr through 6 hr, please call ahead to schedule. There is a premium charge for 3 Hour TEM AHERA or EPA Level II TAT. You will be asked to sign an authorization form for this service. Analysis completed in accordance with EMSL's Terms and Conditions located in the Analytical Price Guide.			
<b>PCM - Air</b> <input type="checkbox"/> Check if samples are from NY <input checked="" type="checkbox"/> NIOSH 7400 <input type="checkbox"/> w/ OSHA 8hr. TWA <b>PLM - Bulk (reporting limit)</b> <input type="checkbox"/> PLM EPA 600/R-93/116 (<1%) <input type="checkbox"/> PLM EPA NOB (<1%) Point Count <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) Point Count w/Gravimetric <input type="checkbox"/> 400 (<0.25%) <input type="checkbox"/> 1000 (<0.1%) <input type="checkbox"/> NYS 198.1 (friable in NY) <input type="checkbox"/> NYS 198.6 NOB (non-friable-NY) <input type="checkbox"/> NYS 198.8 SOF-V <input type="checkbox"/> NIOSH 9002 (<1%)		<b>TEM - Air</b> <input type="checkbox"/> 4-4.5hr TAT (AHERA only) <input type="checkbox"/> AHERA 40 CFR, Part 763 <input type="checkbox"/> NIOSH 7402 <input type="checkbox"/> EPA Level II <input type="checkbox"/> ISO 10312 <b>TEM - Bulk</b> <input type="checkbox"/> TEM EPA NOB <input type="checkbox"/> NYS NOB 198.4 (non-friable-NY) <input type="checkbox"/> Chatfield SOP <input type="checkbox"/> TEM Mass Analysis-EPA 600 sec. 2.5 <b>TEM - Water:</b> EPA 100.2 Fibers >10µm <input type="checkbox"/> Waste <input type="checkbox"/> Drinking All Fiber Sizes <input type="checkbox"/> Waste <input type="checkbox"/> Drinking	
<b>TEM - Dust</b> <input type="checkbox"/> Microvac - ASTM D 5755 <input type="checkbox"/> Wipe - ASTM D6480 <input type="checkbox"/> Carpet Sonication (EPA 600/J-93/167)		<b>Soil/Rock/Vermiculite</b> <input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (<1%) <input type="checkbox"/> PLM EPA 600/R-93/116 with milling prep (<0.25%) <input type="checkbox"/> TEM EPA 600/R-93/116 with milling prep (<0.1%) <input type="checkbox"/> TEM Qualitative via Filtration Prep <input type="checkbox"/> TEM Qualitative via Drop Mount Prep <input type="checkbox"/> Cincinnati Method EPA 600/R-04/004 - PLM/TEM (BC only) <b>Other:</b> <input type="checkbox"/>	
<input type="checkbox"/> Check For Positive Stop - Clearly Identify Homogenous Group		Filter Pore Size (Air Samples): <input checked="" type="checkbox"/> 0.8µm <input type="checkbox"/> 0.45µm	
Samplers Name: Melissa Baernstein		Samplers Signature: Melissa Baernstein	
Sample #	Sample Description	Volume/Area (Air) HA # (Bulk)	Date/Time Sampled
	See attached logs		
Client Sample # (s): 20171005-01 - 20171005-08		Total # of Samples: 8	
Relinquished (Client): Melissa Baernstein		Date: 10/05/17	Time: 15:15
Received (Lab): [Signature]		Date: 10-6-17	Time: 9:10a
Comments/Special Instructions:			



041729272



**Stantec**  
3437 Impresza Drive, Suite A  
San Jose, CA 95134  
(408) 255-2854

**Air Sampling Record**

Date: 10/05/17

Project Name: Former Northern Landfill Client: Phillips 66

Project #: 185850429.300.0007 Laboratory: EMSL

Collected & Calibrated by: M. Baernstein Calibration Source: 1858-01

Sample No.	Sample Location	Sample Type	Media Type	Start Time	Total Time	Pre (LPM)	Average (LPM)	Volume (L)	Comments
20171005-01	N perimeter	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	07:26 Stop Time	130	10.54 10.295	10.417	1,354.21	no wind
20171005-02	E perimeter	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	07:29 Stop Time	131	10.54 10.295	10.417	1,364.63	no wind
20171005-03	S perimeter	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	07:32 Stop Time	132	10.54 10.295	10.54	1,391.28	no wind
20171005-04	W perimeter	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	07:34 Stop Time	134	10.54 10.54	10.54	1,412.36	no wind
20171005-05	N perimeter	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:39 Stop Time	130	10.54 10.54	10.54	1,370.20	Comments sustained wind 0.0-4.0 mph Easterly then Westerly crosswind
20171005-06	E perimeter	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:42 Stop Time	129	10.54 10.54	10.54	1,359.66	Comments upwind then downwind
20171005-07	S perimeter	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:46 Stop Time	127	10.54 10.54	10.54	1,338.58	crosswind
20171005-08	W perimeter	<input checked="" type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input checked="" type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	09:49 Stop Time	126	10.54 10.54	10.54	1,328.04	Comments upwind then downwind
		<input type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Stop Time					Comments
		<input type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Stop Time					Comments
		<input type="checkbox"/> PCM <input type="checkbox"/> TEM <input type="checkbox"/> Lead	<input type="checkbox"/> 25mm, 0.8um <input type="checkbox"/> 25mm, 0.45um <input type="checkbox"/> 37mm, 0.8um	Stop Time					Comments

Emissions in SLOAPCD		Emissions (lb/day)	
Source	ROG	NOX	PM10 Exhaust
Offroad Equipment	2.89	30.67	1.53
Fugitive Dust	0.00	0.00	0.00
Worker (Gasoline)	0.07	0.16	0.01
Trucks (Diesel)	0.01	0.36	0.00
Rail	0.42	7.49	0.26
<b>Totals</b>	<b>3.38</b>	<b>38.67</b>	<b>1.80</b>
SLOAPCD Daily Threshold <sup>1</sup>	137		7
<b>Exceeds Threshold?</b>	<b>No</b>		<b>No</b>

## Notes:

1. SLOAPCD, CEQA Air Quality Handbook, April 2012.

## OFFROAD EMISSIONS

Project Schedule<sup>1</sup>

Phase	Start Date	End Date	Total Workdays	# of Workers Trips per day (In/Out)
Site Access & Access Road	9/21/2021	9/27/2021	4	8
Excavation	9/28/2021	12/10/2021	44	12
Backfill & Compaction	12/14/2021	12/18/2021	4	4
Access Road Removal	12/21/2021	12/23/2021	3	4
Rail Loadout	9/28/2021	12/17/2021	48	8

Project Equipment<sup>4</sup>

Phase	Offroad Equipment	CalEEMod Equipment Type	# of Equipment	Usage (Hours/day)	Horsepower	Load Factor	Location	# of Workers <sup>7</sup>	# of Workers Trips/day (In/Out) <sup>7</sup>	Worker Trip Length (mi)
Site Access & Access Road	Tractors/Loaders/Backhoes <sup>3</sup>	Tractors/Loaders/Backhoes	2	10	97	0.37	Excavation Site	4	8	13
Excavation	Heavy Forklift <sup>2</sup>	Rough Terrain Forklifts	1	10	100	0.4	Excavation Site	2	4	13
Excavation	Man-lifts <sup>2</sup>	Aerial Lifts	1	10	63	0.31	Excavation Site	2	4	13
Excavation	Tracked Excavator <sup>2</sup>	Excavators	1	10	158	0.38	Excavation Site	2	4	13
Rail Loadout	Heavy Forklift <sup>2</sup>	Rough Terrain Forklifts	1	10	100	0.4	Railyard	2	4	13
Backfill & Compaction	Tracked Dozers <sup>2</sup>	Rubber Tired Dozers	1	10	247	0.4	Excavation Site	2	4	13
Access Road Removal	Tractors/Loaders/Backhoes <sup>3</sup>	Tractors/Loaders/Backhoes	2	10	97	0.37	Excavation Site	4	8	13

Emission Factors<sup>5</sup>

Construction Year: 2021

Phase	Offroad Equipment	CalEEMod Equipment Type	Exhaust Emission Factor (g/bhp-hr)							
			ROG	NOX	CO	SOX	PM10	PM2.5	CO2	CH4
Site Access & Access Road	Tractors/Loaders/Backhoes <sup>3</sup>	Tractors/Loaders/Backhoes	0.296	2.995	3.571	0.005	0.177	0.162	475.362	0.154
Excavation	Heavy Forklift <sup>2</sup>	Rough Terrain Forklifts	0.175	2.285	3.252	0.005	0.089	0.081	473.110	0.153
Excavation	Man-lifts <sup>2</sup>	Aerial Lifts	0.109	1.744	3.176	0.005	0.033	0.031	472.114	0.153
Excavation	Tracked Excavator <sup>2</sup>	Excavators	0.216	2.034	3.090	0.005	0.099	0.091	472.359	0.153
Rail Loadout	Heavy Forklift <sup>2</sup>	Rough Terrain Forklifts	0.175	2.285	3.252	0.005	0.089	0.081	473.110	0.153
Backfill & Compaction	Tracked Dozers <sup>2</sup>	Rubber Tired Dozers	0.600	6.296	2.317	0.005	0.306	0.281	474.798	0.154
Access Road Removal	Tractors/Loaders/Backhoes <sup>3</sup>	Tractors/Loaders/Backhoes	0.296	2.995	3.571	0.005	0.177	0.162	475.362	0.154

Daily Emissions			Exhaust Emissions (lb/day)							
Phase	Offroad Equipment	CalEEMod Equipment Type	ROG	NOX	CO	SOX	PM10	PM2.5	CO2	CH4
Site Access & Access Road	Tractors/Loaders/Backhoes <sup>3</sup>	Tractors/Loaders/Backhoes	0.47	4.74	5.65	0.01	0.28	0.26	752.24	0.24
Excavation	Heavy Forklift <sup>2</sup>	Rough Terrain Forklifts	0.15	2.02	2.87	0.00	0.08	0.07	417.20	0.13
Excavation	Man-lifts <sup>2</sup>	Aerial Lifts	0.05	0.75	1.37	0.00	0.01	0.01	203.27	0.07
Excavation	Tracked Excavator <sup>2</sup>	Excavators	0.29	2.69	4.09	0.01	0.13	0.12	625.23	0.20
Rail Loadout	Heavy Forklift <sup>2</sup>	Rough Terrain Forklifts	0.15	2.02	2.87	0.00	0.08	0.07	417.20	0.13
Backfill & Compaction	Tracked Dozers <sup>2</sup>	Rubber Tired Dozers	1.31	13.71	5.05	0.01	0.67	0.61	1034.17	0.34
Access Road Removal	Tractors/Loaders/Backhoes <sup>3</sup>	Tractors/Loaders/Backhoes	0.47	4.74	5.65	0.01	0.28	0.26	752.24	0.24
Total Emissions			2.89	30.67	27.54	0.04	1.53	1.40	4201.56	1.36

GWP<sup>6</sup>

CO2

CH4

1

25

Annual Emissions			Exhaust Emission (tons)						Exhaust Emissions (MT)		
Phase	Offroad Equipment	Total Workdays	ROG	NOX	CO	SOX	PM10	PM2.5	CO2	CH4	CO2e
Site Access & Access Road	Tractors/Loaders/Backhoes <sup>3</sup>	4	0.00	0.01	0.01	0.00	0.00	0.00	1.36	0.00	1.376
Excavation	Heavy Forklift <sup>2</sup>	44	0.00	0.04	0.06	0.00	0.00	0.00	8.33	0.00	8.394
Excavation	Man-lifts <sup>2</sup>	44	0.00	0.02	0.03	0.00	0.00	0.00	4.06	0.00	4.090
Excavation	Tracked Excavator <sup>2</sup>	44	0.01	0.06	0.09	0.00	0.00	0.00	12.48	0.00	12.579
Rail Loadout	Heavy Forklift <sup>2</sup>	48	0.00	0.05	0.07	0.00	0.00	0.00	9.08	0.00	9.157
Backfill & Compaction	Tracked Dozers <sup>2</sup>	4	0.00	0.03	0.01	0.00	0.00	0.00	1.88	0.00	1.892
Access Road Removal	Tractors/Loaders/Backhoes <sup>3</sup>	3	0.00	0.01	0.01	0.00	0.00	0.00	1.02	0.00	1.032
Total Emissions			0.02	0.21	0.28	0.00	0.01	0.01	38.21	0.01	38.52

## Notes:

- 1 Based on information provided from client-"ENTACT Budget Estimate"
- 2 Equipment based on information provided from client
- 3 Added equipment to account for development/removal of access road
- 4 Horsepower and Load Factors based on CalEEMod User's Guide, Appendix D, Default Data Tables
- 5 2021 Emission Factors from CalEEMod User's Guide, Appendix D, Default Data Tables
- 6 CARB, GWPs based on IPCC AR4  
<https://ww2.arb.ca.gov/ghg-gwps>
- 7 # of workers derived based on CalEEMod methodologies

FUGITIVE DUST EMISSIONS

Truck Loading				Emission Factor (lb/ton)		Daily Emission (lbs/day)		Total Emissions (lbs)	
Quantity (CY)	tons/CY	Throughput (tons)	Days in Grading Phase	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
14520	1.2641662	18355.69	44	1.45E-04	2.20E-05	6.06E-02	9.18E-03	2.67E+00	4.04E-01

Bulldozing				Emission Factor (lb/hr)		Daily Emission (lbs/day)		Total Emissions (lbs)	
Phase	CalEEMod Equipment Type	# of Equipment	Usage (Hours/day)	PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
Backfill & Compaction	Rubber Tired Dozers	1	10	7.53E-01	4.14E-01	7.53E+00	4.14E+00	3.01E+01	1.66E+01

Grading					
Phase	CalEEMod Equipment Type	# of Equipment	Usage (Hours/day)	Acres/8-hr day	Scaling Factor
Backfill & Compaction	Rubber Tired Dozers	1	10	0.5	8

Grading Estimates for equipment

Equipment Type	Acres/8-hr day
Crawler Tractors	0.5
Graders	0.5
Rubber Tired Dozers	0.5
Scrapers	1
Paremeters:	Value
Width of grading blade	12
Feet/acre conversion	43560
feet/mile conversion	5280
Acres graded per day	0.625
VMT	0.4297

Emission Factor (lb/VMT)		Daily Emission (lbs/day)		Total Emissions (lbs)	
PM10	PM2.5	PM10	PM2.5	PM10	PM2.5
1.54E+00	1.67E-01	6.63E-01	7.16E-02	2.65E+00	2.86E-01

Total Dust Emissions

Daily Emission (lbs/day)		Total Emissions (lbs)	
PM10	PM2.5	PM10	PM2.5
8.25E+00	4.22E+00	3.54E+01	1.72E+01
Total Emissions (tons)			
		PM10	PM2.5
		1.77E-02	8.62E-03

Notes:  
1. Fugitive dust calculations consistent with CalEEMod methodologies

## MOBILE EMISSIONS

## Worker Emissions

Phase	Vehicle Category/Fuel	Year	# of Workers Trips per day (In/Out)	Trip Length (mi)	Total Workdays
Site Access & Access Road	LDA, GAS	2021	8	13	4
Excavation	LDA, GAS	2021	12	13	44
Backfill & Compaction	LDA, GAS	2021	4	13	4
Access Road Removal	LDA, GAS	2021	4	13	3
Rail Loadout	LDA, GAS	2021	8	13	48

## EMFAC2017 LDA Emission Factors

	Running Emission Factors (g/mi)												
Phase	ROG	NOX	CO	SOX	PM10 Fugitive	PM10 Exhaust	Total PM10	PM2.5 Fugitive	PM2.5 Exhaust	Total PM2.5	CO2	CH4	N2O
Site Access & Access Road	1.14E-02	4.91E-02	6.89E-01	2.63E-03	3.45E-01	1.45E-03	3.46E-01	9.14E-02	1.34E-03	9.27E-02	2.66E+02	2.85E-03	5.16E-03
Excavation	1.14E-02	4.91E-02	6.89E-01	2.63E-03	3.45E-01	1.45E-03	3.46E-01	9.14E-02	1.34E-03	9.27E-02	2.66E+02	2.85E-03	5.16E-03
Rail Loadout	1.14E-02	4.91E-02	6.89E-01	2.63E-03	3.45E-01	1.45E-03	3.46E-01	9.14E-02	1.34E-03	9.27E-02	2.66E+02	2.85E-03	5.16E-03
Backfill & Compaction	1.14E-02	4.91E-02	6.89E-01	2.63E-03	3.45E-01	1.45E-03	3.46E-01	9.14E-02	1.34E-03	9.27E-02	2.66E+02	2.85E-03	5.16E-03
Access Road Removal	1.14E-02	4.91E-02	6.89E-01	2.63E-03	3.45E-01	1.45E-03	3.46E-01	9.14E-02	1.34E-03	9.27E-02	2.66E+02	2.85E-03	5.16E-03
	Non-Running Emission Factors (g/trip)												
Phase	ROG	NOX	CO	SOX	PM10 Fugitive	PM10 Exhaust	Total PM10	PM2.5 Fugitive	PM2.5 Exhaust	Total PM2.5	CO2	CH4	N2O
Site Access & Access Road	7.66E-01	2.24E-01	2.50E+00	5.71E-04	0.00E+00	2.07E-03	2.07E-03	0.00E+00	1.90E-03	1.90E-03	5.77E+01	6.39E-02	2.87E-02
Excavation	7.66E-01	2.24E-01	2.50E+00	5.71E-04	0.00E+00	2.07E-03	2.07E-03	0.00E+00	1.90E-03	1.90E-03	5.77E+01	6.39E-02	2.87E-02
Rail Loadout	7.66E-01	2.24E-01	2.50E+00	5.71E-04	0.00E+00	2.07E-03	2.07E-03	0.00E+00	1.90E-03	1.90E-03	5.77E+01	6.39E-02	2.87E-02
Backfill & Compaction	7.66E-01	2.24E-01	2.50E+00	5.71E-04	0.00E+00	2.07E-03	2.07E-03	0.00E+00	1.90E-03	1.90E-03	5.77E+01	6.39E-02	2.87E-02
Access Road Removal	7.66E-01	2.24E-01	2.50E+00	5.71E-04	0.00E+00	2.07E-03	2.07E-03	0.00E+00	1.90E-03	1.90E-03	5.77E+01	6.39E-02	2.87E-02

## Daily Emissions

	Emissions (Running + Non-Running) (lb/day)												
Phase	ROG	NOX	CO	SOX	PM10 Fugitive	PM10 Exhaust	Total PM10	PM2.5 Fugitive	PM2.5 Exhaust	Total PM2.5	CO2	CH4	N2O
Site Access & Access Road	1.61E-02	3.32E-02	1.65E-01	6.22E-04	7.91E-02	1.50E-03	7.93E-02	2.15E-02	3.09E-04	2.18E-02	6.09E+01	6.56E-04	1.34E-03
Excavation	2.42E-02	3.88E-02	3.11E-01	9.24E-04	1.19E-01	1.66E-03	1.19E-01	3.20E-02	4.62E-04	3.25E-02	9.14E+01	9.82E-04	1.93E-03
Rail Loadout	8.06E-03	2.76E-02	8.58E-02	3.21E-04	3.96E-02	1.33E-03	3.97E-02	1.11E-02	1.56E-04	1.12E-02	3.05E+01	3.29E-04	7.48E-04
Backfill & Compaction	8.06E-03	2.76E-02	8.41E-02	3.21E-04	3.96E-02	1.33E-03	3.97E-02	1.11E-02	1.56E-04	1.12E-02	3.05E+01	3.29E-04	7.48E-04
Access Road Removal	1.61E-02	3.32E-02	2.39E-01	6.22E-04	7.91E-02	1.50E-03	7.93E-02	2.15E-02	3.09E-04	2.18E-02	6.09E+01	6.56E-04	1.34E-03
Totals	7.26E-02	1.60E-01	8.85E-01	2.81E-03	3.56E-01	7.32E-03	3.57E-01	9.72E-02	1.39E-03	9.86E-02	2.74E+02	2.95E-03	6.11E-03

MOBILE EMISSIONS

											GWP			
											CO2	CH4	N2O	
											1	25	298	
LDA Emissions														
Running Emissions (lb/day)														
Phase	ROG	NOX	CO	SOX	PM10 Fugitive	PM10 Exhaust	Total PM10	PM2.5 Fugitive	PM2.5 Exhaust	Total PM2.5	CO2	CH4	N2O	
Site Access & Access Road	2.62E-03	1.13E-02	1.58E-01	6.03E-04	7.90E-02	3.33E-04	7.93E-02	2.09E-02	3.07E-04	2.13E-02	6.09E+01	6.53E-04	1.18E-03	
Excavation	3.92E-03	1.69E-02	2.37E-01	9.04E-04	1.19E-01	5.00E-04	1.19E-01	3.14E-02	4.60E-04	3.19E-02	9.14E+01	9.80E-04	1.77E-03	
Rail Loadout	1.31E-03	5.63E-03	7.90E-02	3.01E-04	3.95E-02	1.67E-04	3.97E-02	1.05E-02	1.53E-04	1.06E-02	3.05E+01	3.27E-04	5.92E-04	
Backfill & Compaction	1.31E-03	5.63E-03	7.90E-02	3.01E-04	3.95E-02	1.67E-04	3.97E-02	1.05E-02	1.53E-04	1.06E-02	3.05E+01	3.27E-04	5.92E-04	
Access Road Removal	2.62E-03	1.13E-02	1.58E-01	6.03E-04	7.90E-02	3.33E-04	7.93E-02	2.09E-02	3.07E-04	2.13E-02	6.09E+01	6.53E-04	1.18E-03	
Non-Running Emissions (lb/day)														
Phase	ROG	NOX	CO	SOX	PM10 Fugitive	PM10 Exhaust	Total PM10	PM2.5 Fugitive	PM2.5 Exhaust	Total PM2.5	CO2	CH4	N2O	
Site Access & Access Road	1.35E-02	2.20E-02	6.75E-03	1.93E-05	8.30E-05	1.16E-03	4.44E-06	5.82E-04	2.46E-06	5.84E-04	1.54E-04	2.26E-06	1.57E-04	
Excavation	2.03E-02	2.20E-02	7.43E-02	1.93E-05	8.30E-05	1.16E-03	4.44E-06	5.82E-04	2.46E-06	5.84E-04	1.54E-04	2.26E-06	1.57E-04	
Rail Loadout	6.75E-03	2.20E-02	6.75E-03	1.93E-05	8.30E-05	1.16E-03	4.44E-06	5.82E-04	2.46E-06	5.84E-04	1.54E-04	2.26E-06	1.57E-04	
Backfill & Compaction	6.75E-03	2.20E-02	5.07E-03	1.93E-05	8.30E-05	1.16E-03	4.44E-06	5.82E-04	2.46E-06	5.84E-04	1.54E-04	2.26E-06	1.57E-04	
Access Road Removal	1.35E-02	2.20E-02	8.11E-02	1.93E-05	8.30E-05	1.16E-03	4.44E-06	5.82E-04	2.46E-06	5.84E-04	1.54E-04	2.26E-06	1.57E-04	
Annual Emissions														
Tons											Metric Tons			
Phase	ROG	NOX	CO	SOX	PM10 Fugitive	PM10 Exhaust	Total PM10	PM2.5 Fugitive	PM2.5 Exhaust	Total PM2.5	CO2	CH4	N2O	CO2e
Site Access & Access Road	6.45E-02	1.33E-01	6.59E-01	2.49E-03	3.16E-01	5.99E-03	3.17E-01	8.61E-02	1.24E-03	8.73E-02	2.44E+02	2.62E-03	5.36E-03	2.45E+02
Excavation	1.06E+00	1.71E+00	1.37E+01	4.06E-02	5.22E+00	7.32E-02	5.24E+00	1.41E+00	2.03E-02	1.43E+00	4.02E+03	4.32E-02	8.50E-02	4.05E+03
Rail Loadout	3.22E-02	1.10E-01	3.43E-01	1.28E-03	1.58E-01	5.32E-03	1.59E-01	4.42E-02	6.23E-04	4.48E-02	1.22E+02	1.32E-03	2.99E-03	1.23E+02
Backfill & Compaction	2.42E-02	8.28E-02	2.52E-01	9.62E-04	1.19E-01	3.99E-03	1.19E-01	3.32E-02	4.67E-04	3.36E-02	9.14E+01	9.87E-04	2.24E-03	9.21E+01
Access Road Removal	7.74E-01	1.59E+00	1.15E+01	2.99E-02	3.80E+00	7.19E-02	3.81E+00	1.03E+00	1.48E-02	1.05E+00	2.92E+03	3.15E-02	6.43E-02	2.94E+03
Totals	1.96E+00	3.63E+00	2.64E+01	7.52E-02	9.61E+00	1.60E-01	9.64E+00	2.60E+00	3.75E-02	2.64E+00	7.40E+03	7.96E-02	1.60E-01	7.45E+03

Heavy Duty Trucks Emissions (HHDT, Diesel-powered)

Phase/Vehicle Type	Vehicle Category/Fuel	Year	Trips per day (onsite)	Trip Length (mi)	Total Workdays
Rail Loadout (Tractor-Trailer)	HHDT/DSL	2021	24	0.75	48
Excavation (Water Truck)	HHDT/DSL	2021	6	0.5	48

EMFAC2017 HHDT Emission Factors

Phase	Running Emission Factors (g/mi)												
	ROG	NOX	CO	SOX	PM10 Fugitive	PM10 Exhaust	Total PM10	PM2.5 Fugitive	PM2.5 Exhaust	Total PM2.5	CO2	CH4	N2O
Rail Loadout (Tractor-Trailer)	0.14	4.91	0.53	0.01	408.83	0.07	408.90	40.77	0.06	40.83	1558.14	0.01	0.24
Excavation (Water Truck)	0.14	4.91	0.53	0.01	408.83	0.07	408.90	40.77	0.06	40.83	1558.14	0.01	0.24

Phase	Non-Running Emission Factors (g/trip)												
	ROG	NOX	CO	SOX	PM10 Fugitive	PM10 Exhaust	Total PM10	PM2.5 Fugitive	PM2.5 Exhaust	Total PM2.5	CO2	CH4	N2O
Rail Loadout (Tractor-Trailer)	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Excavation (Water Truck)	0.00	1.94	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



HHDT Emissions													
Phase	Running Emissions (lb/day)												
	ROG	NOX	CO	SOX	PM10 Fugitive	PM10 Exhaust	Total PM10	PM2.5 Fugitive	PM2.5 Exhaust	Total PM2.5	CO2	CH4	N2O
Rail Loadout (Tractor-Trailer)	0.01	0.19	0.02	0.00	16.22	0.00	16.23	1.62	0.00	1.62	61.83	0.00	0.01
Excavation (Water Truck)	0.00	0.03	0.00	0.00	2.70	0.00	2.70	0.27	0.00	0.27	10.31	0.00	0.00
Phase	Non-Running Emissions (lb/day)												
	ROG	NOX	CO	SOX	PM10 Fugitive	PM10 Exhaust	Total PM10	PM2.5 Fugitive	PM2.5 Exhaust	Total PM2.5	CO2	CH4	N2O
Rail Loadout (Tractor-Trailer)	0	0.102755	0	0	0	0	0	0	0	0	0	0	0
Excavation (Water Truck)	0	0.025689	0	0	0	0	0	0	0	0	0	0	0
	6.68E-03	3.56E-01	2.45E-02	6.82E-04	1.89E+01	3.09E-03	1.89E+01	1.89E+00	2.96E-03	1.89E+00	7.21E+01	3.10E-04	1.13E-02

## RAIL EMISSIONS

					Emission Factors (g/bhp-hr)								
Equipment	Quantity	BHP	Load Factor	Hours/Trip	ROG	NOX	CO	SOX	PM10	PM2.5	CO2	CH4	N2O
Locomotive	3	4000	0.28	26.1	0.45	8.09	1.32	0.1006	0.28	0.25	487	0.01	0.04

## Trip Emissions

Air District	Segment Length		# of Trips	Emissions (lb/trip)									
	(miles)	Distribution (%)		ROG	NOX	CO	SOX	PM10	PM2.5	CO2	CH4	N2O	
<b>One-Way Trip</b>	<b>1045</b>	<b>100%</b>	26	<b>87.08</b>	<b>1565.56</b>	<b>255.44</b>	<b>19.47</b>	<b>54.19</b>	<b>48.38</b>	<b>94243.52</b>	<b>1.94</b>	<b>7.74</b>	
SLOAPCD	5	0.48%	26	0.42	7.49	1.22	0.09	0.26	0.23	450.93	0.01	0.04	
SBAPCD	110	10.53%	26	9.17	164.80	26.89	2.05	5.70	5.09	9920.37	0.20	0.81	
VCAPCD	60	5.74%	26	5.00	89.89	14.67	1.12	3.11	2.78	5411.11	0.11	0.44	
SCAQMD	105	10.05%	26	8.75	157.31	25.67	1.96	5.44	4.86	9469.44	0.19	0.78	
MDAQMD	160	15.31%	26	13.33	239.70	39.11	2.98	8.30	7.41	14429.63	0.30	1.19	
Out-of-State	605	57.89%	26	50.42	906.38	147.89	11.27	31.37	28.01	54562.04	1.12	4.48	

## Total Project Emissions

Total Project Emissions				Total Emissions (tons)						GWP <sup>1</sup>			
										CO2	CH4	N2O	
										1	25	298	
										Total Emissions (MT)			
Air District	Segment Length (miles)	Distribution (%)	# of One-Way Trips	ROG	NOX	CO	SOX	PM10 Exhaust	PM2.5 Exhaust	CO2	CH4	N2O	CO2e
One-Way Trip	1045	100%	26	1.150	20.665	3.372	0.257	0.715	0.639	1128.552	0.023	0.093	1156.75
SLOAPCD	5	0.48%	26	0.006	0.099	0.016	0.001	0.003	0.003	5.400	0.000	0.000	5.53
SBAPCD	110	10.53%	26	0.121	2.175	0.355	0.027	0.075	0.067	118.795	0.002	0.010	121.76
VCAPCD	60	5.74%	26	0.066	1.187	0.194	0.015	0.041	0.037	64.797	0.001	0.005	66.42
SCAQMD	105	10.05%	26	0.116	2.076	0.339	0.026	0.072	0.064	113.395	0.002	0.009	116.23
MDAQMD	160	15.31%	26	0.176	3.164	0.516	0.039	0.110	0.098	172.793	0.004	0.014	177.11
Out-of-State	605	57.89%	26	0.666	11.964	1.952	0.149	0.414	0.370	653.372	0.013	0.054	669.70

Transport Parameters	Value
Total CY	14520
Excavation Rate (CY per day)	300
Containers per day	12
CY/container	25
Transport Parameters	Value
Containers per Railcar	4
Railcars per unit train	11
Containers per unit train	44
CY/container	25
<b>Total CY/unit Train</b>	<b>1100</b>

## Rail Trips to ECDC (Utah)

Roundtrips	Total One-Way (In/Out)
13	26

## Notes:

These emissions represent a conservative scenario where a unit train is required solely for the purpose of transporting only the Project's soil to the disposal site in Utah. However, in reality, trains would travel through the area with cargo loads from other facilities and these trips would occur regardless of the Project.