











H. T. HARVEY & ASSOCIATES

Ecological Consultants

Alameda Point Veterans Affairs Project Final Wetland Mitigation and Monitoring Plan

Project No. 3898-03

Prepared for:

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Cover photo credit: California least tern photograph by Mark Pavelka/USFWS

Section 1. Introduction

This wetland mitigation and monitoring plan (MMP) was prepared by H. T. Harvey & Associates in accordance with current MMP guidelines from the U.S. Army Corps of Engineers (USACE) South Pacific Division (USACE 2015) and supports the U.S. Department of Veterans Affairs (VA) Section 404 and 401 permit applications to USACE and the Regional Water Quality Control Board (RWQCB), respectively. It also includes a long-term management plan (LTMP), in accordance with USACE MMP guidelines. This introduction identifies the responsible parties for Clean Water Act permitting and summarizes the project, its impacts on USACE and RWQCB jurisdictional habitats, and the proposed mitigation package.

1

1.1 Responsible Parties

1.1.1 Applicant/Permittee

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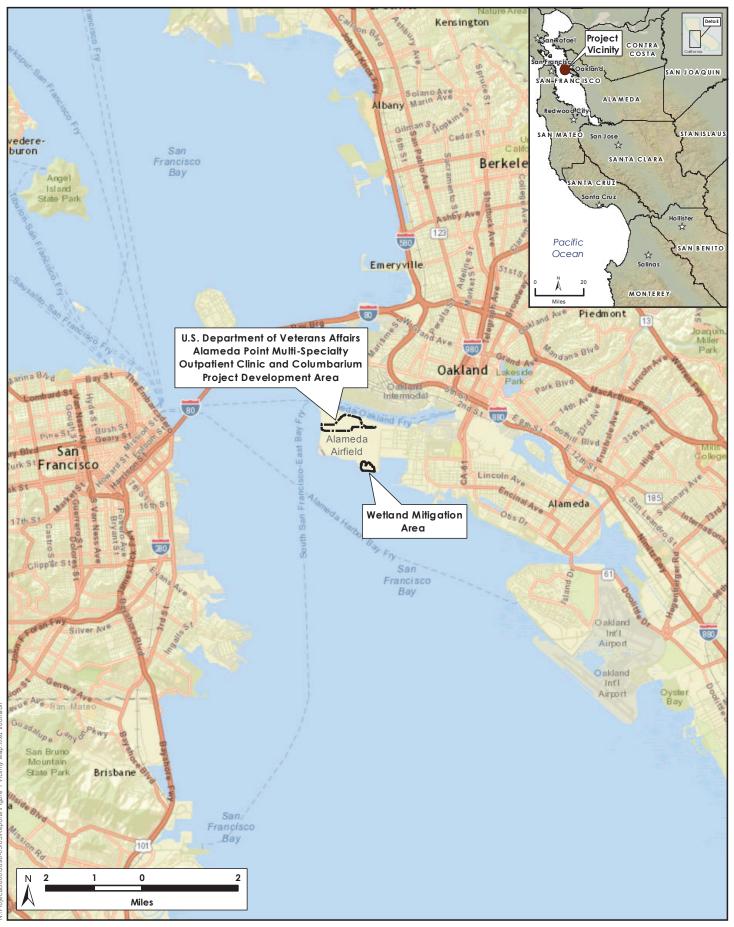
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1.2 Overview of Project Requiring Mitigation

The VA is planning to construct an outpatient care facility, a national cemetery, and other structures as part of the VA Alameda Point Multi-specialty Outpatient Clinic (OPC) and Columbarium project. The VA development area, which encompasses 112.4 acres, is located on the former Naval Air Station (Alameda Airfield) on Alameda Point, in the city of Alameda, Alameda County (Figures 1 and 2). The project would be implemented in phased 10-year increments over approximately 120 years. Full development of the project over the approximately 120-year period would permanently impact 10.9 acres of wetlands and temporarily impact approximately 0.6 acres of wetlands and 0.3 acres of other waters under the jurisdiction of USACE and RWQCB (Figures 3 and 4).

Construction of the OPC facilities and Phase I of the national cemetery will permanently impact 3.6 acres of wetlands. The VA has purchased mitigation credits off site at the San Francisco Bay Wetland Mitigation Bank to mitigate Phase 1 impacts. Project phases II—XIII will permanently impact a total of 7.3 acres of wetlands. This MMP presents the wetland mitigation package to offset the 7.3 acres of permanent impacts to wetlands and the plan to restore wetlands that will be temporarily impacted in the development area and the wetland mitigation area. The mitigation package for permanent impacts involves a combination of creating tidal salt marsh (tidal marsh) and enhancing existing wetlands and waters located on Alameda Point







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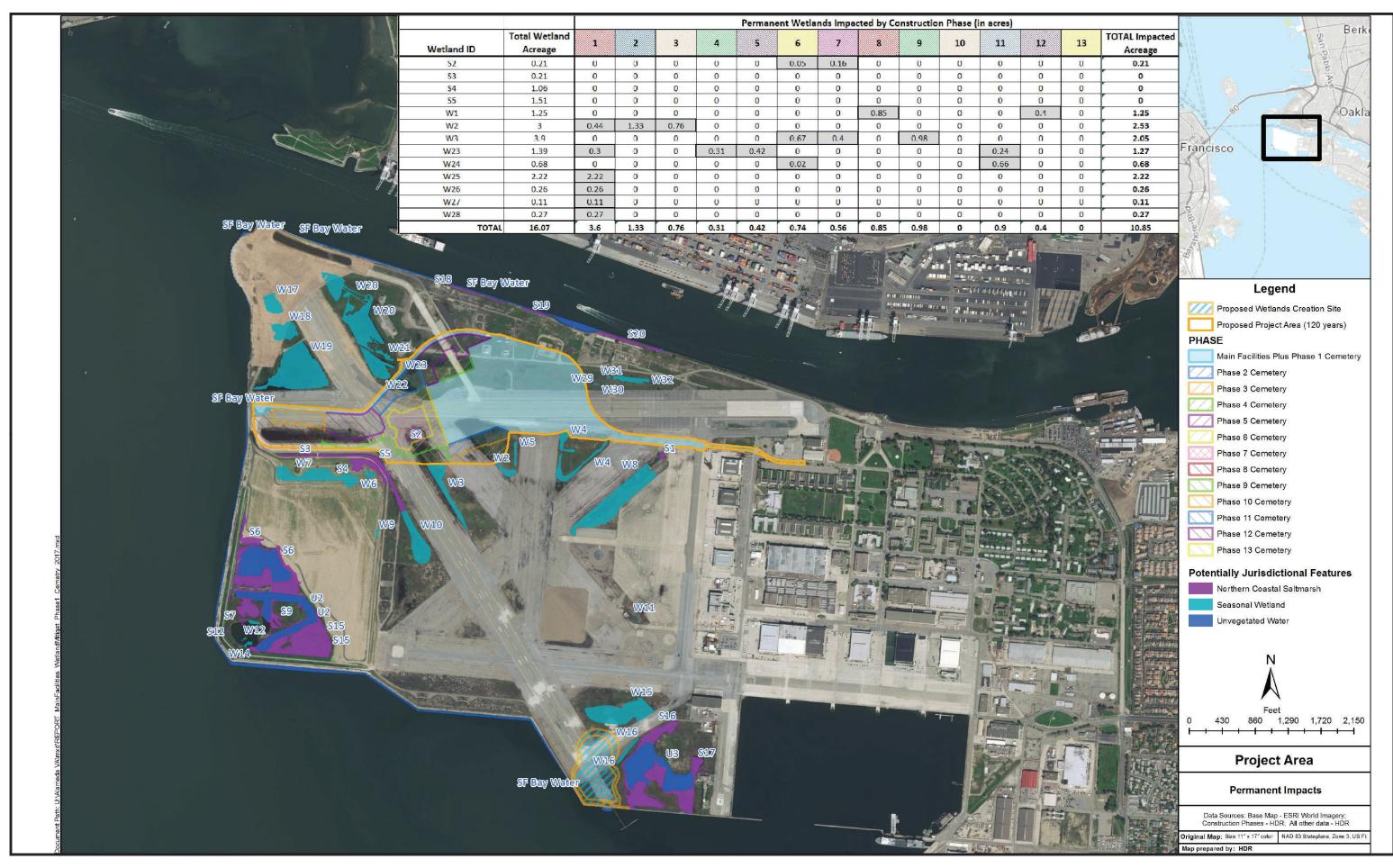




Figure 3. Permanent Habitat Impacts at the VA Development Project Site Alameda Point Veterans Affairs Project Wetland Mitigation and Monitoring Plan (3898-03)

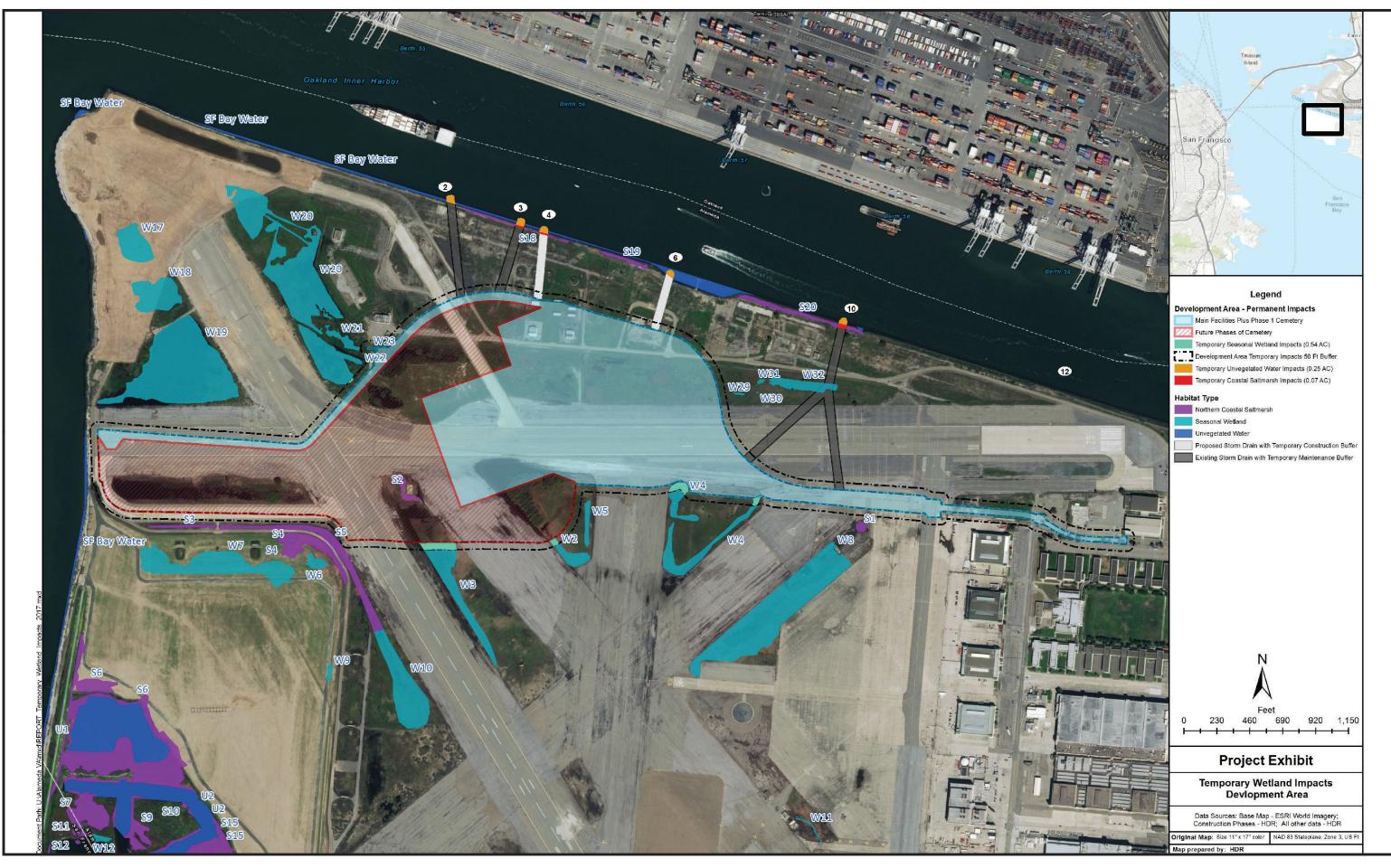




Figure 4. Temporary Habitat Impacts at the VA Development Project Site Alameda Point Veterans Affairs Project Wetland Mitigation and Monitoring Plan (3898-03)

Section 2. USACE/RWQCB Jurisdictional Habitat Impacts

This section describes and quantifies the project's impacts on wetland habitats under the jurisdiction of USACE and RWQCB.

2.1 Type, Surface Area, and Locations of Permanent Impacts

Permanent wetland impacts from the VA development project will occur in phases over an approximately 120-year period. Each project phase is expected to be implemented approximately 10 years following implementation of the preceding phase (Table 1). Full implementation of the project will permanently impact approximately 10.7 acres of seasonal wetlands and 0.2 acre of northern coastal salt marsh habitat (approximately 10.9 acres). Figure 3 shows the locations of permanent wetland impacts.

Table 1. Permanent Impacts on USACE/RWQCB Jurisdictional Habitats and Mitigation Overview

Development Project Phase	Area of Permanent Impact on Wetlands (acres)	Mitigation Location for Permanent Impacts	Approximate Date of Impact	Approximate Date of Mitigation Purchase or Construction
I	3.60	San Francisco Bay Wetland Mitigation Bank	2019	2017
II	1.33	Alameda Point	2030	2019
III	0.76	Alameda Point	2040	2019
IV	0.31	Alameda Point	2050	2019
V	0.42	Alameda Point	2060	2019
VI–XIII	4.43	Alameda Point	2070 and beyond	2019
Project total	10.85			
Total to mitigate on site	7.25			

Phase I is scheduled to begin in March 2019 and will permanently impact 3.6 acres of wetlands (Table 1). The VA has purchased mitigation credits off site at the San Francisco Bay Wetland Mitigation Bank to mitigate Phase I wetland impacts. Phases II—XIII will permanently impact a total of 7.3 acres of wetlands. Permanent impacts from Phase II—XIII will be mitigated on site at the wetland mitigation area at Alameda Point under this MMP (Figure 2). The wetland mitigation area will be constructed in 2019, at least a decade in advance of corresponding project impacts (Table 1). No wetlands will be permanently impacted by construction of the onsite mitigation.

2.2 Type, Surface Area, and Locations of Temporary Impacts

2.2.1 Development Project

Temporary impacts refer to impacts to jurisdictional areas that will be restored to the pre-impact condition within 1 year and therefore do not required additional compensatory mitigation. Temporary impacts are shown in Table 2. Figure 4 shows the temporary wetland impact locations across all project phases. Seasonal wetlands in these areas may be impacted by vehicle access and staging of equipment to implement the development project. Impacts to seasonal wetlands will consist primarily of crushed vegetation and areas of denuded vegetation where vehicles and equipment scarify the soil surface. Salt marsh habitats will be temporarily impacted by trenching necessary to install or repair drains from the project area into San Francisco Bay. Temporary impacts to other waters will result from the temporary disturbance of rock material at the seawall during installation of water control structures; this could include remobilizing sand and small rock into Bay waters. Areas subject to temporary impacts will be restored in place during the same year as construction impacts according to the plan provided in Section 4.4.1.

Table 2. Temporary Impacts on USACE/RWQCB Jurisdictional Habitats from Development Project

Development Project Phase			Approximate Date of Impact
I-XIII	0.61°	0.25	2019 and beyond

 $^{^{\}circ}$ 0.07 acre of salt marsh, 0.54 acres of seasonal wetland (Figure 4)

2.2.2 Wetland Mitigation Area

Implementation of the on-site wetland mitigation plan will result in minor temporary impacts to up to 1.34 acres of jurisdictional wetlands located in the wetland mitigation area through a combination of invasive plant control (1.25 acres) and associated vehicle access for invasive plant control work (0.09 acre). These impacts are described below. Temporary impacts will be restored in place during the same year as construction impacts under the plan provided in Section 4.4.2. Installation of a cofferdam will be required to dewater the seawall for installation of the tidal inlet. This will result in temporary impacts to 0.16 acres of shallow estuarine open waters directly adjacent to the seawall in San Francisco Bay (HDR 2017).

2.2.2.1 Invasive Plant Control

Workers may trample native tidal marsh and seasonal wetland vegetation while walking through the marsh to hand-pull, string-trim, or apply herbicide to invasive plants in the wetland mitigation area. Workers may kill a small proportion of the native plants at the site and temporarily reduce native plant cover in the marsh when using herbicide to control invasive plants (1.25 acres).

2.2.2.2 Vehicle Access

Vehicle access across existing tidal marsh habitat may be necessary for the initial removal of invasive plants in the wetland mitigation area. Vehicles could crush native tidal marsh vegetation to access an adjacent upland area for invasive plant control (0.09 acres). A laminated- crane mat or similar level of protection will be used to protect the marsh surface during vehicle access.

2.3 Existing Conditions in Permanent and Temporary Wetland Impact Areas

2.3.1 Topography and Hydrology

Alameda Island is characterized by a low topographic profile with surface elevations from 0 to 30 feet above mean sea level. Based on a review of historical records, Alameda Point was formerly a shallow mudflat consisting of young Bay mud with depths ranging from 20 to 100 feet or more. This area was filled to create land beginning as early as 1892. The VA development area is located adjacent to the San Francisco Bay shoreline (on the western and southern boundaries), for which the breakwater is lined rock riprap. No creeks or other natural water courses cross the VA development area, the majority of which is covered by runway surfaces of the former Alameda Naval Air Station.

Surface water runoff from the VA development area is collected in an existing stormwater drainage system, which conveys surface water runoff directly to receiving waters. The existing storm drainage collection system consists of drains, catch basins, and 11 discharge outfalls to the Oakland Inner Harbor and San Francisco Bay. An assessment of the existing storm drainage features located in the VA development area showed that, due to their age, some drains are not in usable condition and are generally degraded or failed. As a result of the deterioration of the existing storm drains and the generally flat topography which results in inefficient conveyance of runoff. As result, seasonal flooding is common and jurisdictional wetlands are located within the VA development area.

The project area is located in the East Bay Plain Subbasin within the Santa Clara Valley Groundwater Basin. Previous geotechnical studies have documented a groundwater depth of between 1 foot and 4.5 feet below the ground surface in the project area. This shallow water-bearing zone is not considered to be connected to any regional aquifers.

2.3.2 Soils

HDR performed a geotechnical subsurface investigation program that included advancing 10 hollow stem auger borings, designated Boring B-01 to B-10, to obtain information on subsurface conditions within the wetland creation area. Borings B-01 to B-05 were advanced adjacent to the back of the seawall. Borings B-06 through B-10 were located on or adjacent to the airfield runway/taxiway, between 140 to 550 feet north of the seawall, to characterize the soil conditions beneath the proposed tidal marsh. No borings were advanced within the tidal marsh enhancement area. Details of the HDR's geotechnical investigation, including boring logs and boring

locations, are presented as an appendix to HDR's Onsite Wetland Mitigation, Design Technical Memorandum (Appendix A).

The project area is underlain by artificial fill consisting of loose-to-medium-density sands ranging in depth from 15 to 30 feet. The artificial fill is underlain by very soft, compressible younger Bay mud deposits ranging in depth from 30 to 65 feet. The younger Bay mud is underlain by about 30 feet of dense to very dense sands of the San Antonio Formation. The fill consists of hydraulically placed material dredged from the bay in the early part of the 20th century (Osbourne 2017).

2.3.3 Vegetation

Figures 3 and 4 show the locations of jurisdictional wetlands to be impacted within the development area. The impacted wetlands consist primarily of low- and moderate-quality seasonal wetlands dominated by nonnative species, such as tall fescue (Festuca arundinacea), velvet grass (Holcus lanatus), Bermuda grass (Cynodon dactylon), Mediterranean barley (Hordeum marinum), curly dock (Rumex crispus), annual bluegrass (Poa annua), Italian ryegrass (Lolium multiflorum), and loosestrife (Lythrum hyssopifolia). Native species present include common nut-sedge (Cyperus eragrostis), Baltic rush (Juncus balticus), creeping spikerush (Eleocharis macrostachya), and toad rush (Juncus bufonius) (AECOM 2012). Nontidal salt marsh composes a small proportion of the impacted wetlands and is dominated by native salt marsh species, including pickleweed (Salicornia pacifica) and saltgrass (Distichlis spicata). Characteristic nonnative species include cranesbill (Geranium dissectum), red-stemmed filaree (Erodium cicutarium), Mediterranean barley, bird's-foot trefoil (Lotus corniculatus), red sandspurry (Spergularia rubra), and bull thistle (Cirsium vulgare) (AECOM 2012). The wetlands to be impacted have impaired ecological functions because they occur in small, discontinuous patches surrounded by hardscape associated with for former naval air station.

H. T. Harvey & Associates reviewed the following background material to determine the likelihood that special-status plant species are present in the VA development area: the biological resources section of the *Alameda Point Project Draft Environmental Impact Report* (ESA 2013), California Native Plant Society Inventory of Rare and Endangered Plants (CNPS 2016), the U.S. Fish and Wildlife Service (USFWS) species list for the study area (USFWS 2016) and California Natural Diversity Database query results (CNDDB 2016). Based on the review, H. T. Harvey & Associates agrees with ESA (2013) that no special-status plants are expected to occur in the development area.

2.3.4 Wildlife

The seasonal wetlands within the VA development area are relatively small and discontinuous, and provide only moderate to low quality habitat for wildlife species (VA and Navy 2013). As a result, the wildlife species that use these wetlands are primarily associated with adjacent developed areas and grasslands. Sierran chorus frogs (*Pseudacris sierra*) may breed in these wetlands, but few other amphibian species are expected to breed or use these habitats. Western fence lizards (*Sceloporus occidentalis*), which are common in surrounding grasslands, forage in these wetlands when they are dry, but few other reptile species are expected to occur here. Killdeer (*Charadrius vociferous*) are common within the VA development area, and this species will nest in adjacent developed and grassland areas and forage in seasonal wetlands. Mallards (*Anas platyrhynchos*) will also forage in these wetlands

when they contain water. Common terrestrial bird species that breed in the vicinity and forage in or over these wetlands when they are dry are the house finch (*Haemorhous mexicanus*), Brewer's blackbird (*Euphagus cyanocephalus*), lesser goldfinch (*Spinus psaltria*), and barn swallow (*Hirundo rustica*). Common mammals that utilize these wetlands for foraging, cover, and sources of fresh water are the black-tailed jackrabbit (*Lepus californicus*), striped skunk (*Mephitis mephitis*), Norway rat (*Rattus norvegicus*), Virginia opossum (*Didelphis virginiana*), raccoon (*Procyon lotor*), and feral cat (*Felis catus*).

No special-status wildlife species are known or expected to occur within the wetland habitats in the VA development area. A colony of the California least tern (*Sternula antillarum browni*) (state and federally listed as endangered) is located within the VA transfer parcel south of the VA development area. This species may occasionally roost and loaf on the tarmac within the VA development area, but it does not use the wetland habitats on the VA parcel. The Alameda song sparrow (*Melospiza melodia pusillula*) is a California species of special concern that nests in low numbers in tidal salt marsh at Alameda Point. However, the wetlands within the VA development area do not provide suitable nesting habitat for this species. The Bryant's savannah sparrow (*Passerculus sandwichensis alaudinus*) is a California species of special concern that may nest in grasslands, ruderal habitats, or seasonal wetlands within the VA development area. This species can potentially nest around the edges of seasonal wetlands on the site where they abut extensive grassy or ruderal areas.

Section 3. Proposed On-Site Wetland Mitigation Package

3.1 Summary of Mitigation Package

This on-site wetland mitigation package was developed to compensate for the permanent loss of jurisdictional wetland habitat related to Phases II–XIII of the VA development project. It is summarized in Table 3. To mitigate impacts, the VA will create at least 7.3 acres of new jurisdictional tidal marsh at the southern end of Alameda Point bordered by at least 3.3 acres of new tidal marsh-upland transition zone (transition zone) around the created marsh to increase resilience of the created marsh to sea level rise. This area is referred to as the tidal marsh creation area (Figure 5). In addition, the VA will enhance the function of existing tidal marsh, salina, and transition zone habitat located immediately east of the tidal marsh creation area through a combination of invasive plant control and native plant installation. This area is referred to as the tidal marsh enhancement area (Figure 5). The work plan to establish the wetland mitigation area is provided in Section 4.

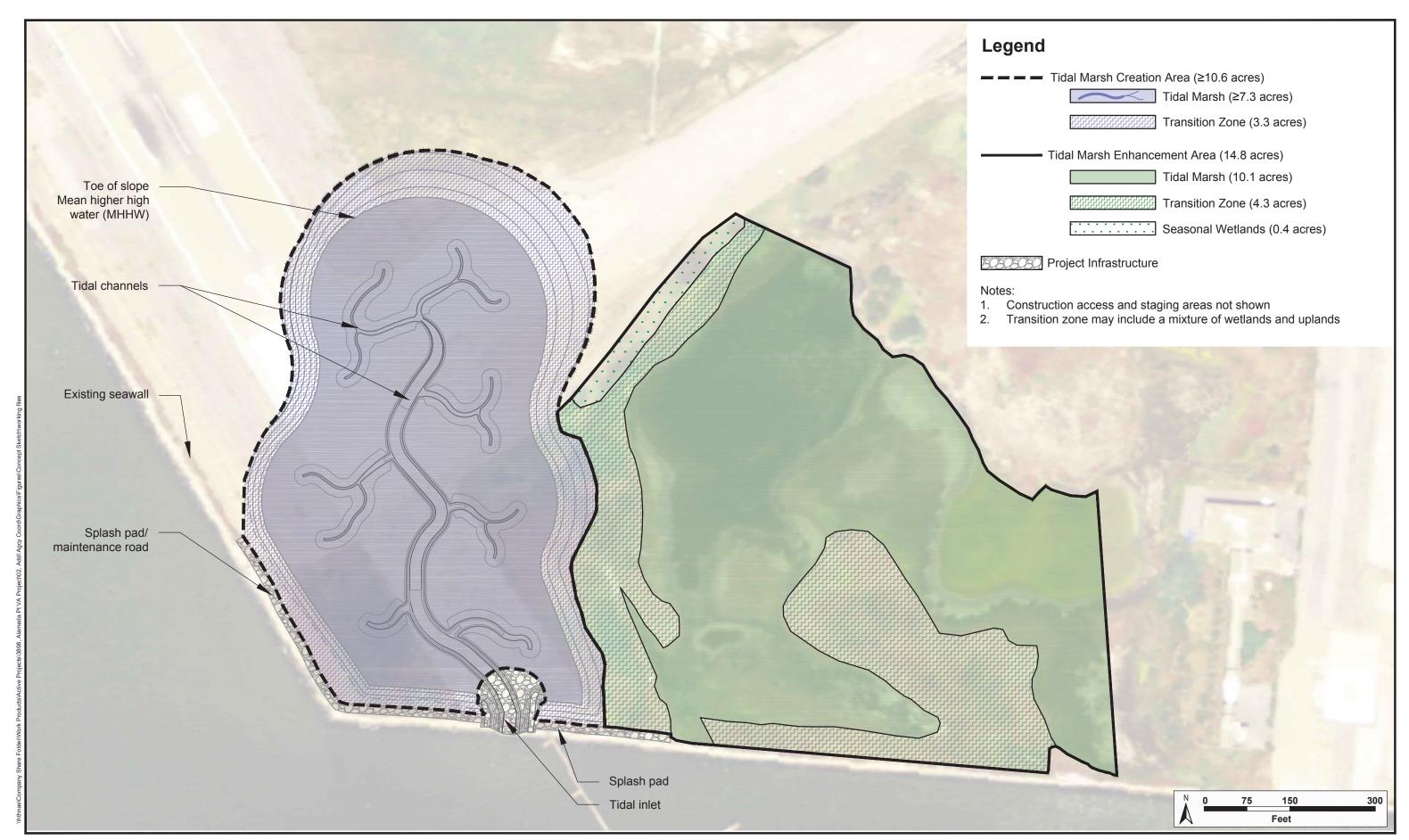
Table 3. On-Site Wetland Mitigation Package

Habitat Impact	Impact Area	Habitat Mitigation Type	Proposed Mitigation Area	Mitigation Description
Non-tidal salt marsh and	acres creation arsh d asonal Transition zone		At least 7.3 acres	Excavate uplands and tarmac to elevations suitable for tidal marsh, construct tidal inlet and pilot channels, and revegetate the tidal marsh plain.
seasonal wetlands		3.3 acres	Excavate uplands and tarmac to create and revegetate a transition zone (from created marsh to uplands) with slopes ranging from 10:1 to 30:1 to provide the created marsh with resilience to sea level rise.	
		Tidal marsh, salina, and transition zone enhancement	14.8 acres	Control invasive plants and enhance native plant diversity in the existing tidal marsh and transition zone via planting.
Total created/enhanced habitat		At least 25.4 acre	es	

¹ The created transition zone will be a mixture of jurisdictional wetlands and uplands

3.2 Long-Term Habitat Mitigation Goals

The wetland mitigation area is located south of a large breeding population of California least tern, a species state and federally listed as endangered (Figure 2). The project's feasibility study identified mitigation design constraints to avoid any inadvertent impacts on the tern from on-site mitigation (H. T. Harvey & Associates and HDR 2016). These design constraints were developed in collaboration with staff from the USFWS Don Edwards National Wildlife Refuge, who manage the tern colony. The design constraints have been incorporated into the mitigation goals and design, as presented in the following sections.





3.2.1 Tidal Marsh Creation Area

The goals of the tidal marsh creation area are as follows:

- Create at least 7.3 acres of tidal marsh composed primarily of vegetated marsh plain with intertidal slough channels that meets the USACE definition of jurisdictional wetlands and other waters.
- Utilize design techniques that restore a self-sustainable tidal marsh ecosystem that will require minimal long-term maintenance.
- Restore a diverse mix of native tidal marsh species across the elevational range suitable for tidal marsh
 plants, including low-elevation marsh dominated by Pacific cordgrass (*Spartina foliosa*), mid-elevation
 and high-elevation marsh dominated by perennial pickleweed, and a transition zone with high-tide
 refuge cover.
- Create a gently sloping transition zone around the created tidal marsh to allow for marsh transgression toward higher elevations on the slope with sea level rise.
- Restore herbaceous vegetation (grasses and forbs) in the transition zone to provide high tide refuge
 habitat for resident tidal marsh animals, provide foraging habitat for bird and insect species, and
 increase native plant diversity.
- Design the restored habitats to minimize temporary impacts and avoid permanent impacts on the existing adjacent salina and wetland habitats.
- Allow the natural, inevitable formation of small unvegetated salinas and marsh ponds in the marsh creation area to enhance habitat diversity.
- Meet the RWQCB sediment contaminant screening guidelines for the protection of aquatic life.
- Avoid impacts on the California least tern colony during construction, postconstruction maintenance, and long-term management.
- Maintain the least tern viewshed by ensuring that vegetation height does not exceed 2 feet above the existing ground surface around the perimeter of the transition zone.
- Do not increase flood risk to the surrounding areas relative to the existing condition.
- Control invasive plants so that invasive plant cover is less than 5% in the created tidal marsh and transition zone.
- In the long-term (e.g., decades after installation), allow natural changes to the distribution of vegetated tidal marsh and unvegetated tidal aquatic habitats. Sea level rise predictions in the San Francisco Estuary by the year 2100 vary from approximately 1.4 feet to 5.4 feet (NRC 2012). Sea level rise will likely result in temporal and spatial change to the distribution of wetland and aquatic habitats at the wetland mitigation site relative to the installed footprint of vegetated marsh and aquatic habitats. For example, sea level rise will likely drive the natural conversion of some vegetated marsh

to marsh plain ponds and intertidal mudflat, as well as the landward transgression of vegetated marsh onto upland habitats in the transition zone. The site-specific temporal change in habitat distributions in response to sea level rise is unknown given the wide range of sea level rise predictions, the limited knowledge of tidal marsh responses to sea level rise, and potential future variability in sediment supply. Therefore, this mitigation plan allows for a natural, dynamic response of the spatial distribution of wetland and aquatic habitats to future sea level rise.

3.2.2 Tidal Marsh Enhancement Area

The goals of the tidal marsh enhancement area are as follows:

- Increase the diversity of native plants relative to the current condition.
- Restore herbaceous vegetation (grasses and forbs) in the transition zone that enhance native plant community diversity and benefit wildlife and insect pollinators.
- Control invasive plants so that invasive plant cover is less than 5%.

3.3 Mitigation Site Location and Ownership

The proposed wetland mitigation area is located at the southern end of Alameda Point, in the USFWS's California least tern Conservation Area (Figure 2). The property is owned by the VA and managed for the terns by the USFWS and the VA.

3.4 Site Selection Rationale

The proposed on-site wetland mitigation area location was selected for several key reasons:

- Early in the project permit application process, public interest groups and the RWQCB requested that the VA develop an on-site wetland mitigation package to offset project impacts, citing the unique ecological benefits that on-site wetlands could provide at Alameda Point. H. T. Harvey & Associates and HDR Engineering concluded in a subsequent study that a combination of tidal marsh creation and enhancement would be feasible at the south end of Alameda Point (H. T. Harvey & Associates and HDR 2016).
- Implementing the mitigation will restore wetland functions in the same watershed, San Francisco Bay Hydrologic Unit Code 18050004, as near to the impact site as feasible (USGS 2017). The proposed mitigation area is located less than 1 mile from the proposed development site. Both the impacted wetlands and the mitigation site drain directly from Alameda Island into San Francisco Bay (the former through storm drains, the latter through overland flow and tidal action).
- The 1999 Baylands Ecosystem Habitat Goals report recommended expanding tidal wetland habitats on Alameda Island to provide ecological functions missing from the area (Goals Project 1999).

Therefore, the proposed mitigation location aligns with regional planning goals for tidal marsh restoration.

- The proposed mitigation area is contiguous with existing tidal salt marsh, tidal salina, and seasonal wetland habitats. The adjacent salt marsh habitat is invaded by Algerian sea lavender (*Limonium ramosissimum* subsp. *provinciale*), and the adjacent transition zone and uplands are invaded with iceplant (*Carpobrotus edulis*). Therefore, the mitigation location provides an opportunity to enhance the jurisdictional habitats in the wetland mitigation area through invasive plant eradication and native revegetation while simultaneously expanding the extent of jurisdictional habitats in the immediate vicinity though tidal marsh creation.
- The mitigation site is located in the California least tern conservation area (Figure 2). Therefore, public access will be seasonally restricted after Alameda Point is opened to the public (USFWS 2012). Restricted public access will reduce the likelihood of anthropogenic disturbance to the wetland mitigation area.
- The proposed tidal marsh creation area surface will meet RWQCB's contaminant screening criteria for wetland surface material following site grading (RWQCB 2000; Appendix B).
- With the addition of an organic amendment, the soils are horticulturally suitable to sustain vegetated tidal marsh and transition zone (Appendix B).

3.5 Rationale for Proposed Type and Quantity of Wetland Mitigation

The 2015 USACE mitigation guidelines (USACE 2015) and the *Standard Operating Procedures for Determination of Mitigation Ratios* (USACE 2012) direct project permittees to consider several variables when determining whether a proposed amount and type of mitigation are appropriate to compensate for impacts on jurisdictional habitats. Each of these factors is listed below, followed by a brief discussion of the functions, values, and suitability of the proposed on-site mitigation:

• Comparison of the functional loss at the proposed impact site and the functional gain at the proposed compensatory mitigation site. Project Phases II—XII will impact 7.25 acres of seasonal wetlands and coastal salt marsh on Alameda Point. The wetland impacts are located across several fragmented patches (Figure 3 and 4). These wetland patches are connected to the bay by a failing stormwater system and separated by tarmac (former runways) (AECOM 2012). By contrast, the created and enhanced mitigation wetlands will have increased functions and values relative to the impacted habitat because they will (1) create a contiguous approximately 25-acre tidal marsh/transition zone complex, (2) have a more stable and resilient tidal connection to San Francisco Bay, (3) provide enhanced wildlife use, and (4) have greater native plant diversity within these communities. The wetland mitigation site will provide water quality filtration functions similar to those in the impacted wetlands in that these wetlands filter surface water runoff from adjacent hardscape and ruderal habitats prior to discharge to the San Francisco Bay.

- Compensatory mitigation site location. The mitigation is proposed on Alameda Point, less than 1 mile from the proposed development. Therefore, wetland functions will be restored within the same watershed in which impacts occurred, as near to the impact site as feasible.
- Net loss of aquatic resource surface area. Implementing the mitigation will not result in a net loss of jurisdictional wetlands because the proposed surface area of tidal marsh creation equals or exceeds the surface area of proposed wetland impacts.
- Type conversion. The proposed mitigation will provide creation and enhancement of tidal salt marsh habitat in exchange for impacts to primarily, degraded seasonal freshwater wetland habitat. In accordance with the mitigation rule in USACE 2012, implementing out-of-kind mitigation may be appropriate "if the proposed compensatory mitigation habitat type would serve the aquatic resource needs of the watershed/ecoregion" or "would consist of rare or regionally significant habitat types". The San Francisco Estuary has lost at least 79% of the tidal marsh and associated transition zone habitat that was present 200 years ago, making restoration of tidal marsh and transition zone a regional priority (Goals Project 1999). Therefore, the creation and enhancement of tidal marsh and transition zone to replace degraded seasonal wetland loss will create a functional benefit in the regional/watershed context.
- Risk and uncertainty of compensatory mitigation success. The proposed onsite wetland mitigation (including construction, maintenance, and monitoring) will be completed before the wetland impacts occur, allowing mitigation success to be verified before the impacts happen. This substantially reduces the risk associated with permittee-responsible mitigation. In addition, the mitigation design provides a low level of risk that the target habitats will fail to establish because (1) tidal marsh restoration has been implemented successfully at numerous locations around San Francisco Bay, and the design is consistent with that of other successful restoration projects graded to marsh elevations (e.g., Route 101 Auxiliary Lanes Wetland Mitigation in Foster City, California [H. T. Harvey & Associates 2002] and Muzzi Marsh in Corte Madera, California [Philip Williams & Associates and Faber 2004]); (2) the adjacent existing tidal wetlands at Alameda Point demonstrate that the pickleweed marsh can be established and sustained on sandy sediment similar to the created tidal marsh sediment; (3) the mitigation design provides a reliable tidal inlet consisting of a permanent, low-maintenance opening in the existing seawall to connect the site to tidal waters; and (4) the ecological designers (H. T. Harvey & Associates) have decades of experience designing numerous successful tidal salt marsh restoration projects in the San Francisco Bay.
- Temporal loss. Mitigation will be provided in advance of the wetland impacts (Table 1). Therefore,
 no temporal loss will occur. In accordance with the USACE 2015 mitigation guidelines, temporal
 advances, as will be realized at this site, may warrant a lesser mitigation ratio for permittee-responsible
 mitigation.

3.6 Mitigation Site Existing Conditions

Photodocumention collected in October 2017 showing the existing condition in the wetland mitigation area is provided in Appendix C.

3.6.1 Tidal Marsh Creation Area

3.6.1.1 Topography and Hydrology

The tidal marsh creation area is located entirely in nonjurisdictional upland habitat bordered by a rock seawall to the south and west, jurisdictional wetlands to the east, and an abandoned naval airfield runway and ruderal seasonal wetland to the north (Figure 6). The tidal marsh creation area is composed of relatively flat topography (e.g., tarmac and ruderal uplands) associated with the former naval airfield runway.

The elevation of the ground surface in the tidal marsh creation areas ranges from 9 to 11 feet North American Vertical Datum of 1988 (NAVD 88) based on a publicly available 2010 Light Detection and Ranging (LiDAR) survey (Figure 6). The hydrology of the site is limited to incidental precipitation and runoff during rain events from the tarmac into the adjacent ruderal vegetation. Soil sampling during the feasibility study by H. T. Harvey & Associates and HDR (2016) found that brackish salinity groundwater (approximately 4–20 parts per thousand) is located at approximately 5–6 feet NAVD 88 in the tidal marsh creation area.

3.6.1.2 Soils

Soils in the tidal marsh creation area are xeropsamments (i.e., unconsolidated sand) derived from fill (NRCS 2017). Xeropsamments are a nonhydric soil. The fill consists of hydraulically placed material dredged from the bay in the early part of the 20th century.

H. T. Harvey & Associates conducted a soils investigation by sampling soils from soil trenches dug by an excavator in 24 unique soil sample locations across the tidal marsh creation area in 2017 (detailed in H. T. Harvey & Associates 2017a; Appendix B). This soil sampling resulted in the following findings:

- Soil is composed primarily of medium to very fine sands distributed homogeneously both horizontally and vertically across the proposed design depths in the tidal marsh creation area.
- Soils are horticulturally suitable for tidal marsh plants:
 - o Soil pH ranges between 7.1 and 8.0, a range suitable for tidal marsh plant growth.
 - o Boron was less than 0.20 part per million in all samples, below the level toxic to plants.
 - o Macro- and micronutrient levels were sufficient for tidal marsh plant growth.
 - Organic matter was low, ranging from 0.4% to 0.6% organic matter (dry weight basis), suggesting that an organic matter amendment would improve conditions for tidal marsh vegetation establishment.

- The results of contaminant sampling indicated that soil in the study area is suitable for use as wetland surface soils, with the following exception:
 - Cadmium was detected in concentrations higher than the RWQCB 2000 screening criterion of 0.33 milligram per kilogram in three of the soil study's 24 composite samples (Appendix B). Soil exceeding the RWQCB 2000 screening criterion for cadmium will be excavated from the created tidal marsh area and replaced with soil salvaged from within the wetland mitigation area that meets the RWQCB 2000 screening criteria.

3.6.1.3 Vegetation

Vegetation is present in the tidal marsh creation area in the ruderal upland areas shown in Figure 6. Vegetation in these areas consists primarily of nonnative, invasive species including iceplant interspersed with ripgut brome (*Bromus diandrus*), stinkwort (*Dittrichia graveolens*), Italian thistle (*Carduus pycnocephalus*), and black mustard (*Brassica nigra*). A low percent cover of native saltgrass also occurs in this area. On the basis of the background review described in Section 2.3.3, no special-status plant species are expected to occur in the area.

3.6.1.4 Wildlife

California least terms from the colony just north of the mitigation area routinely roost and loaf on the tarmac of the former runways, primarily just outside the site to the north and west (Figure 6); the northern and western limits of the tidal marsh creation area were established in collaboration with the USFWS refuge staff to avoid impacts on high-use tern roosting and loafing areas. Western gulls (*Larus occidentalis*) and California gulls (*Larus californicus*) also may roost in the tidal marsh creation area on the tarmac or along the riprap on the southern and southwestern borders of the site. Killdeer may nest in ruderal upland areas and even on the tarmac.

Existing wildlife diversity in the tidal marsh creation area is relatively low, primarily because of the paucity and structural simplicity of vegetation. Small numbers of Bryant's savannah sparrows nest in ruderal upland habitat in this area, and a few pairs of horned larks (*Eremophila alpestris*) nest in ruderal upland and bare areas. However, use of habitats on the site by landbirds is limited primarily to foraging birds that breed elsewhere. Such birds include the house finch, Brewer's blackbird, lesser goldfinch, and barn swallow. Common mammals in the study area include the black-tailed jackrabbit, striped skunk, Norway rat, Virginia opossum, raccoon, and California ground squirrel (*Otospermophilus beecheyi*). The western fence lizard occurs on the wetland mitigation site, but it is unlikely that other reptiles occur here.

Special-status species that may currently forage in the tidal marsh creation area, particularly during the nonbreeding season, but that do not nest here include the burrowing owl (*Athene cunicularia*), northern harrier (*Circus cyaneus*), and loggerhead shrike (*Lanius ludovicianus*). These three species are California species of special concern. In addition, the white-tailed kite (*Elanus leucurus*) and peregrine falcon (*Falco peregrinus*), listed by the state of California as fully protected species, may seasonally occur onsite.



Figure 6. Existing Conditions in the Wetland Mitigation Area

San Francisco Bay waters immediately adjacent to the tidal marsh creation area potentially support several special-status fish, including the green sturgeon (*Acipenser medirostris*) and Central California Coast steelhead (*Oncorhynchus mykiss*) (both federally listed as threatened), the longfin smelt (*Spirinchus thaleichthys*) (state listed as threatened and a candidate for federal listing), and the Central Valley fall-run Chinook salmon (*O. tshanytscha*) (California species of special concern). Harbor seals (*Phoca vitulina*) and California sea lions (*Zalophus californianus*), both of which are protected by the Marine Mammal Protection Act, are present in adjacent waters. None of these fish or marine mammals are found within the tidal marsh creation area currently. However, these fish and marine mammals may occasionally occur in subtidal waters adjacent to the the tidal inlet which will be constructed to connect the tidal marsh creation area to the San Francisco Bay.

3.6.2 Tidal Marsh Enhancement Area

3.6.2.1 Topography and Hydrology

The tidal marsh enhancement area consists of jurisdictional wetlands (salt marsh), jurisdictional other waters (salinas), and ruderal uplands. The area is bordered by a rock seawall to the south, the tidal marsh creation area to the west, ruderal uplands and tarmac to the north, and a developed City of Alameda property on Monarch Street to the east (Figure 6). On the basis of publicly available 2010 LiDAR data, the elevation of the ground surface ranges from approximately 5 feet (in the tidal marsh) to 10 feet NAVD 88 (in the uplands). The tidal marsh is sustained by an approximately 60-foot-long tidal channel emanating from the southwestern rock seawall erosion site, which allows regular tidal exchange between the bay and the tidal marsh. This erosion site appears to have formed naturally via piping of tidal water and associated substrate erosion through the seawall. Tidal flushing currently occurs through the seawall from the southeastern rock seawall erosion site into the tidal marsh enhancement area (Figure 6). The rock seawall mutes the degree of tidal exchange between the bay and the salt marsh habitat. The salina habitat consists of a series of seasonally evaporating ponds formed in shallow depressions with restricted drainage. The ponds are occasionally filled by extreme high tides and then evaporate, concentrating salts. The salinity of the salinas was approximately 42-44 parts per thousand during one sample period (H. T. Harvey & Associates and HDR 2016). The salinas are located at approximately 8 feet NAVD 88 (Figure 6). The nonjurisdictional uplands in the enhancement area function as a transition zone for the adjacent tidal marsh by filtering runoff from the surrounding tarmac, providing high-tide refuge habitat, and providing elevated land to accommodate future sea level rise.

A small area of seasonal wetland is located in the enhancement area (Figure 6). The seasonal wetland is in a shallow depression adjacent to the tarmac. The hydrology of the seasonal wetland is sustained by a combination of primarily incidental precipitation, groundwater, and occasional flooding during extreme high tides. Surficial runoff from a portion of the tarmac and adjacent areas also enters this wetland.

3.6.2.2 Soils

As in the tidal marsh creation area, soils in the tidal marsh enhancement area are xeropsamments derived from fill (NRCS 2017). Soil sampling found that soils in the tidal marsh and in the tidal marsh enhancement area have an equivalent percent composition of sand but soils in the enhancement area have higher organic matter

(organic matter was 2.3% in the enhancement area) (H. T. Harvey & Associates and HDR 2016). The higher organic matter is likely the result of organic accumulation from tidal marsh plant detritus.

3.6.2.3 Vegetation

Vegetation in the tidal marsh in the enhancement area consists of native species characteristic of relatively low-diversity tidal marshes in the San Francisco Estuary: perennial pickleweed interspersed with fleshy jaumea (Jaumea carnosa), saltgrass, and marsh rosemary (Limonium californicum). A large population of nonnative, invasive Algerian sea lavender has established at the southern end of the marsh near the tidal channel. Algerian sea lavender is considered a "highest priority" plant species for control in tidal salt marsh habitats in South San Francisco Bay by the Don Edwards National Wildlife Refuge (Marriot et al. 2013). Algerian sea lavender invades restored and disturbed marshes, spreads by buoyant seed through tidal waters, displaces native plants, and negatively affects the structure of high-tide refuge habitat (Archbald and Boyer 2014a, 2014b). Eradication of this plant is necessary to both enhance the existing tidal marsh and establish the adjacent created tidal marsh habitat without invasion of Algerian sea lavender.

Vegetation in the transition zone is dominated by invasive iceplant interspersed with ripgut brome and saltgrass. On the basis of the background review described in Section 2.3.3, no special-status plant species are expected to occur in the area.

3.6.2.4 Wildlife

A variety of waterbirds use the complex of salinas and tidal marsh in the enhancement area. Most of these species are present only during migration and winter. For example, dabbling ducks, such as the mallard, gadwall (Anas strepera), northern shoveler (A. elypeata), and American wigeon (A. americana), forage in the salinas and likely also in the tidal marsh to some extent when it is inundated. Migrant and wintering shorebirds also forage in these habitats. Larger, longer-legged shorebirds, such as the willet (Tringa semipalmata) and greater yellowlegs (T. melanoleuca), forage in both shallow and deeper-water habitats in the salinas and tidal marsh, whereas smaller shorebirds, such as the western sandpiper (Calidris mauri), least sandpiper (C. minutilla), dunlin (C. alpina), and semipalmated plover (Charadrius semipalmatus), forage in shallow water or exposed mud. Numbers of these waterbirds peak during spring migration (March through early May) and fall migration (early July through October). Western gulls and California gulls may roost in the salinas in the tidal marsh enhancement area.

Smaller numbers of waterbirds nest in the study area. A few pairs of black-necked stilts (*Himantopus mexicanus*), and possibly American avocets (*Recurvirostra americana*), nest in the tidal marsh around the edges of the salinas. Canada geese (*Branta canadensis*), and possibly a few pairs of mallards and gadwall, also nest in these areas, and killdeer nest in ruderal/transition zone areas and along the edges of the salinas. A small colony of great blue herons (*Ardea herodias*) nests in cypress trees in a ruderal area adjacent to the salinas and outside of the mitigation; Figure 6 shows the approximate location of the heron rookery.

Aside from waterbirds, wildlife diversity in the enhancement area is relatively low, as described for the creation area. See Section 3.6.1.4 for a discussion of the landbirds, mammals, and reptiles found in this area.

California least terns from the colony just north of the mitigation area routinely fly over the tidal marsh enhancement area during the nesting season but are not known to roost in this area. Several special-status bird species may occur in the tidal marsh enhancement area as occasional visitors but are not expected to breed there or to occur regularly or in substantial numbers. Although the western snowy plover (*Charadrius nivosus nivosus*) (federally listed as threatened) has been recorded in the least tern colony (ESA 2013) in the past, the species has not been known to nest at Alameda Point in recent decades. Habitat in the tidal marsh enhancement area may support dispersant snowy plovers, which may occur as occasional visitors, but this species is not expected to nest on the site or to use the site regularly or in large numbers. Other special-status species that may forage in the tidal marsh enhancement area, particularly during the nonbreeding season, but that do not nest there include the burrowing owl, northern harrier, and loggerhead shrike, which are California species of special concern. The white-tailed kite and peregrine falcon, listed by the state of California as fully protected species, are also seasonal visitors.

The fish and marine mammals found in the bay waters immediately adjacent to the tidal marsh enhancement area are the same as described for the tidal marsh creation area (see Section 3.6.1.4).

Section 4. Wetland Mitigation Work Plan

4.1 Tidal Marsh Creation Design

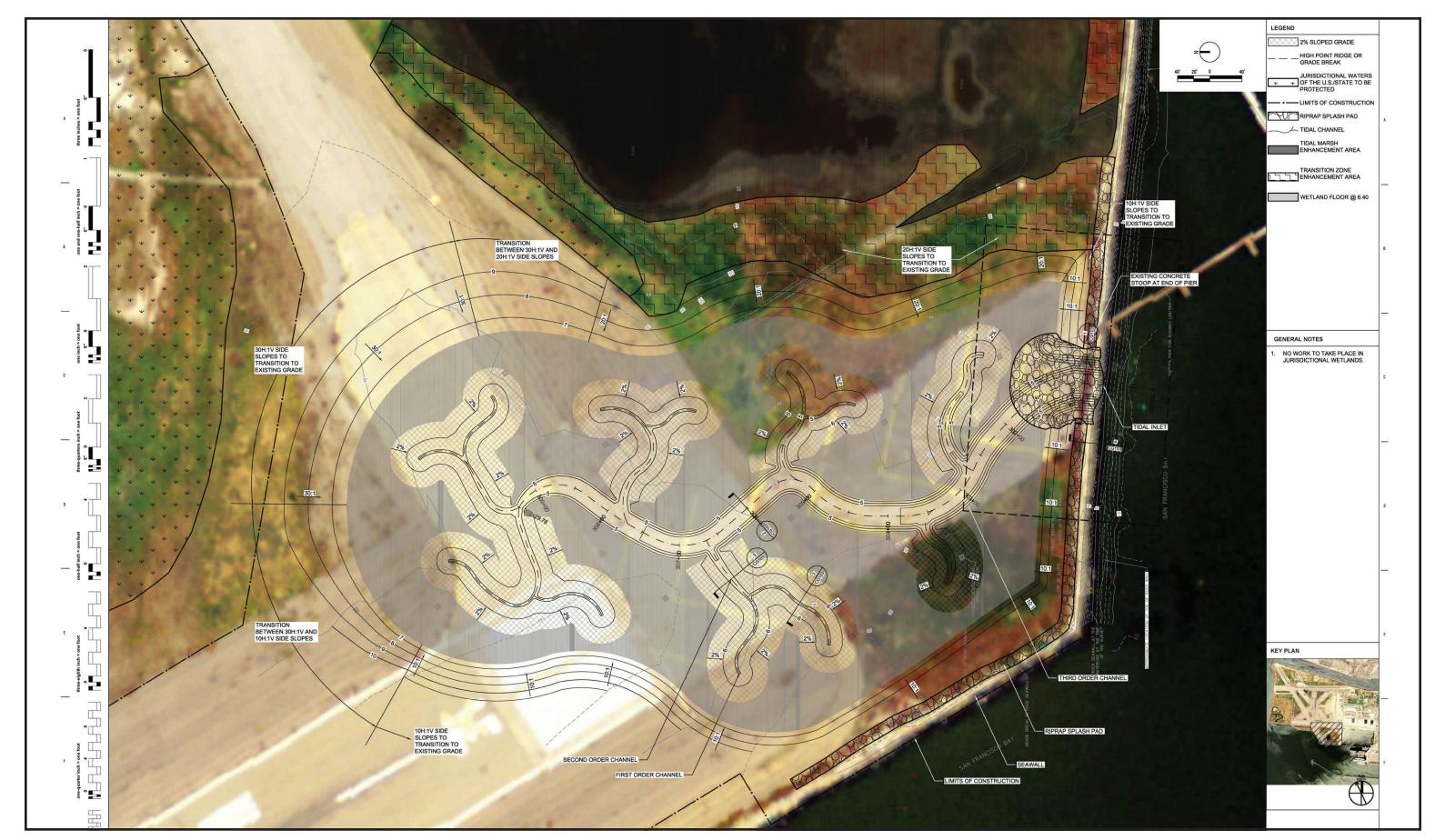
This section describes the target habitat conditions that drive the basis of design, as well as the proposed grading, tidal inlet, tidal channels, soil preparation, and native plant revegetation design required to achieve the target habitat conditions. The grading design plan view for the tidal marsh creation area is provided in Figure 7. Figure 8 presents typical cross sections showing the created tidal marsh, tidal channels, and tidal inlet design. The revegetation design plan view and cross section for the tidal marsh creation area are provided in Figures 9 and 10, respectively. The tidal marsh creation design is intended to achieve the long-term habitat mitigation goals identified in Section 3.2.1. H. T. Harvey & Associates restoration ecologists collaborated with HDR's engineers/hydrologists to develop the design; H. T. Harvey providing the ecological design criteria and revegetation plan and HDR prepared the earthwork and tidal inlet design. The design is presented below and the basis of the engineering design is presented in Appendix A.

4.1.1 Target Habitats

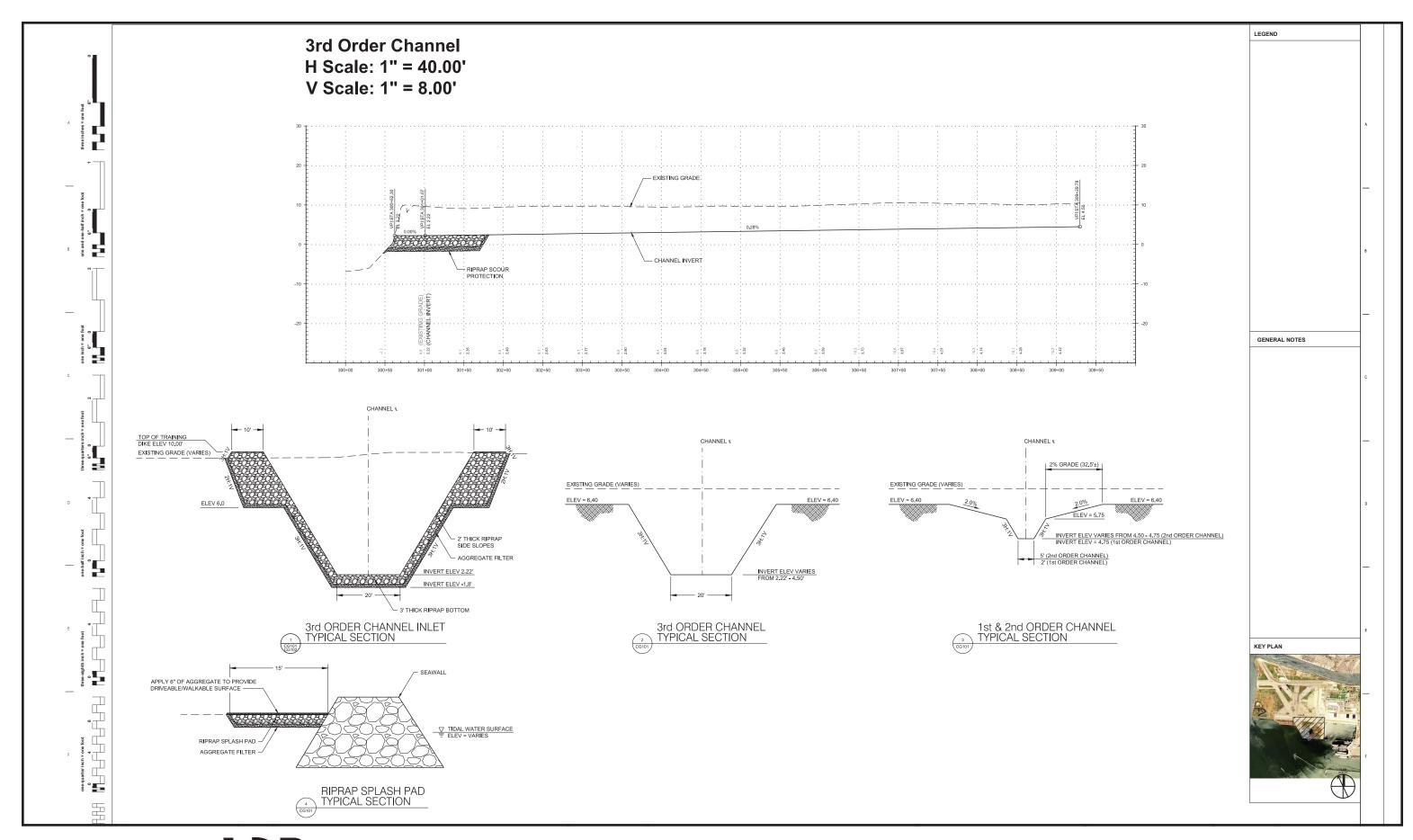
4.1.1.1 Created Tidal Marsh

Within 3–5 years following restoration, the tidal marsh creation area will consist of at least 7.3 acres of high-quality, productive, and self-sustaining tidal salt marsh meeting the USACE definition of jurisdictional wetlands and other waters bordered by transition zone. The tidal marsh will be composed primarily of a vegetated tidal marsh plain hydrologically supported by a dendritic network of tidal slough channels connected to San Francisco Bay through a permanent tidal inlet (Figures 7–10). Marsh ponds, formed when tidal waters pool on the marsh plain and preclude vegetation growth, are also likely to form through natural processes. Salinas may establish at the upper edge of the marsh or in the transition zone. Marsh ponds and salinas provide valuable habitat for invertebrates and foraging shorebirds and are natural features in tidal marshes. However, the proportion of unvegetated habitats (other waters) to vegetated marsh will be relatively small, comparable to that for a natural tidal salt marsh.

The created tidal marsh plain will be densely vegetated with a diversity of native tidal marsh plants established across an elevational gradient from about 1 foot above mean sea level (MSL) to above mean higher high water (MHHW) (Figures 9 and 10; Table 4). Low-marsh vegetation, primarily Pacific cordgrass, will grow along tidal channels from approximately 1 foot above MSL to mean high water (MHW). The midmarsh plain (from MHW to MHHW) will be dominated by perennial pickleweed interspersed with patches of annual pickleweed (*Salicornia depressa*), fleshy jaumea, and seaside arrow grass (*Triglochin maritima*). The high-marsh plain (at MHHW) will be vegetated primarily by perennial pickleweed with patches of fleshy jaumea, saltgrass, alkali heath (*Frankenia salina*), and other native tidal marsh plants that grow near the high end of the elevation range of San Francisco Bay tidal marshes.









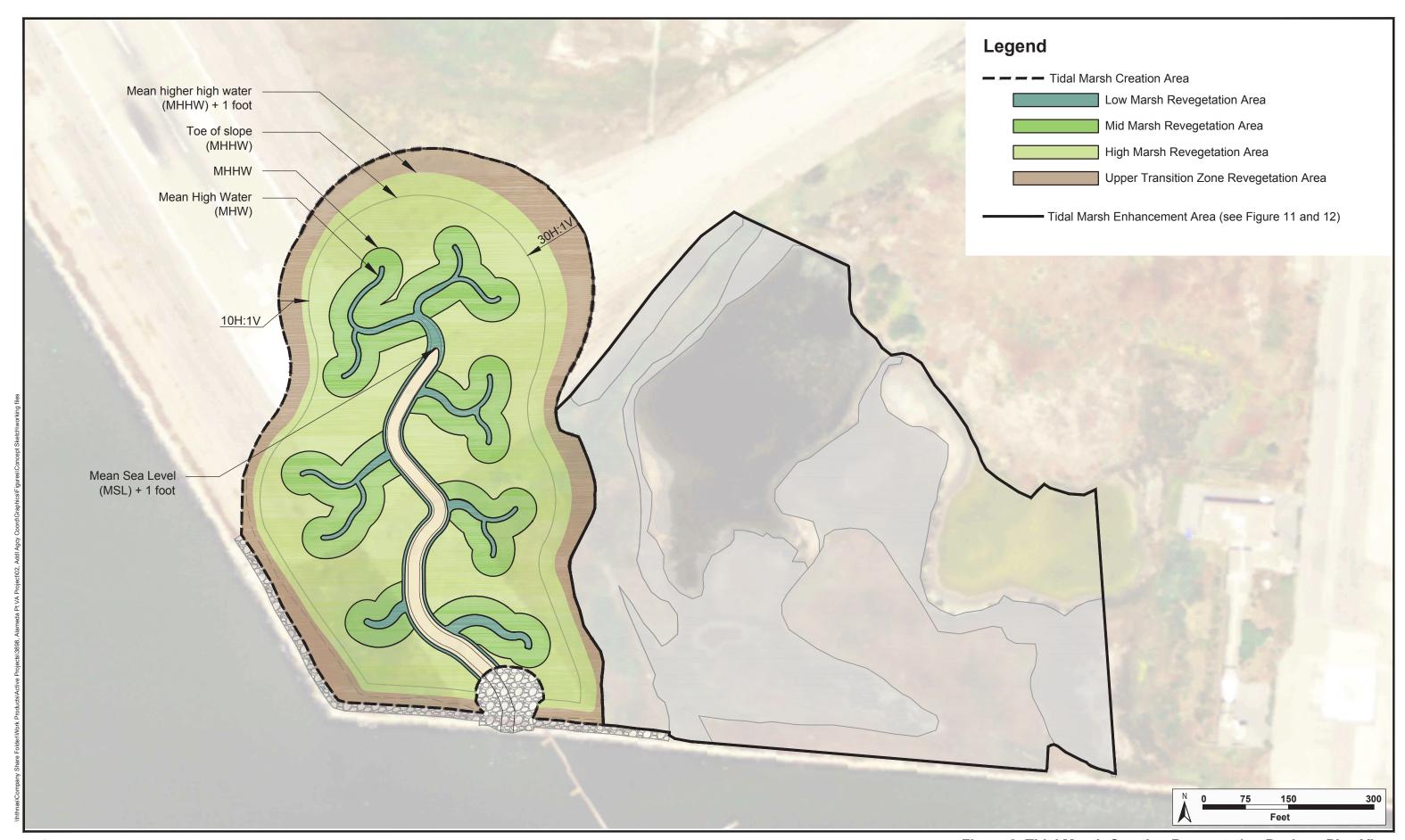






Table 4. Tidal Datums for Alameda, California (NOAA Tide Station 9414750)

Tidal Datum	Feet NAVD 88	
Highest observed water level	9.42	
Highest astronomical tide	7.75	
Mean higher high water	6.37	
Mean high water	5.75	
Mean sea level	3.22	
Mean low water	0.91	
Mean lower low water	-0.23	

Note: NAVD 88 = North American Vertical Datum of 1988.

4.1.1.2 Created Transition Zone

The created transition zone will consist of a gradual slope extending from the landward edge of the tidal marsh (at MHHW) upslope to the existing grade along the upslope edge of the transition zone (Figures 9 and 10). At the upper edge of the tidal marsh plain (from approximately above MHHW to 1 foot above MHHW), the transition zone will be primarily tidal marsh vegetation but then gradually will transition to upland rhizomatous grasses, herbs, and subshrubs at higher elevations. Vegetation in the transition zone will be seeded and planted to create a diverse, weed-resistant plant community that benefits wildlife and insects. Following restoration, the transition zone will be composed primarily of tidal marsh vegetation from MHHW to 1 foot above MHHW in the high-marsh revegetation area and alkali meadow habitat interspersed with densely growing patches of coastal strand vegetation in the upper transition zone revegetation area (Figure 9). Alkali meadow habitat will consist of native, perennial grasses and forbs, such as creeping wild rye (Elymus triticoides), meadow barley (Hordeum brachyantherum), and red fescue (Festuca rubra), interspersed with low-growing native and nonnative annual grasses and forbs. Vegetation patches composed of a diverse assemblage of coastal strand species will be interspersed within this matrix; coastal strand species will be low growing to meet the least tern viewshed goals. Vegetation patches will be characterized by (1) flowering and seeding plants that benefit birds and insects and (2) dense grasses, herbs, and subshrubs to provide long-term weed resistance. Vegetation patches are expected to spread over time in the transition zone.

4.1.2 Target Soils and Hydrology

Soils in the created tidal marsh and transition zone will be sandy sediments with a level of organic matter similar to that in the adjacent reference marsh (approximately 2% organic matter by dry weight). Soils in the upper 1.5 feet of the created tidal marsh and transition zone will meet the RWQCB's contaminant screening criteria for wetland surface material to protect aquatic life (RWQCB 2000). The 1.5-foot depth defining wetland surface material is a conservative estimate because most tidal marsh plant roots and invertebrates occur in the upper 6 inches of sediment in tidal marshes. For this reason, the import and placement of clean wetland surface material with a depth of 1.5 feet has been approved by RWQCB on several wetland mitigation sites (e.g., the Santa Clara Valley Transportation Authority Tasman Corridor wetland mitigation, City of Santa Clara Ulistac Natural Area

wetland mitigation, and Route 101 auxiliary lanes wetland mitigation in Foster City [H. T. Harvey & Associates 1999, 2002, 2008]).

The created tidal marsh will receive regular, unrestricted, mixed semidiurnal tidal exchange through the tidal inlet to San Francisco Bay (Figures 7 and 8). Datums above the invert of the tidal inlet (MHHW, MHW, and MSL) in the created tidal marsh are expected to be equivalent to tidal datums outside of the tidal inlet (i.e., similar to tidal datums at Alameda tide station 9414750; Table 4). Mean low water and mean lower low water datums in the created tidal marsh will be coincident with the invert elevation of the tidal channels.

Groundwater is expected to intercept the tidal marsh at approximately 5–6 feet NAVD 88 (between MHW and MHHW), an elevation that coincides with marsh channel side slopes. Where brackish groundwater intercepts tidal marsh plant roots, the plants' pore water salinity will be reduced. This may lead to enhanced plant growth and greater tolerance of prolonged flooding. Shallow brackish ground water may create some areas along tidal channels or on the marsh plain that are suitable for limited cover of brackish tidal marsh vegetation, such as alkali bulrush (*Bolboschoenus maritimus*), whereas most of the constructed marsh plain will be dominated by tidal salt marsh species, as described above.

The top of the existing sea wall along the tidal marsh creation area varies from 8 to 11 feet NAVD88. HDR has determined that the presence of a created tidal marsh and tidal inlet will not have an appreciable impact on inland flooding conditions in the surrounding areas. During a 100-year flood event, water would already be above the existing top of wall elevation (100-year flood elevation is 10 feet). Therefore inland areas will flood to this elevation via seawall overtopping regardless of the tidal marsh creation area.

4.1.3 Predicted Wildlife Use

Wildlife species expected to use the new tidal salt marsh and transition zone habitats in the tidal marsh creation area are similar to those that currently use the tidal salt marsh and upland habitats in the adjacent tidal marsh enhancement area, although because of the habitat enhancement, higher densities of such wildlife are expected after the mitigation is implemented. Dabbling ducks and migrant and wintering shorebirds will forage along the new tidal channels, with dabbling ducks making greater use of these channels at high tides when larger areas of open water are present and shorebirds making greater use of these channels at low tides when mudflats are exposed. Canada geese and possibly a few pairs of mallards and gadwall may nest in the new tidal marsh and transition zone habitats. Small numbers of Bryant's savannah sparrows will nest and forage in the newly created tidal marsh and transition zone habitats. Common birds and mammals also will use these areas.

It is possible that the new tidal salt marsh will provide foraging habitat for the California Ridgway's rail (Rallus obsoletus), federally listed as endangered. The combination of tidal channels for foraging and taller vegetation for cover and perhaps nesting may be attractive to rails dispersing from more traditional Ridgway's rail sites, such as Arrowhead Marsh and Martin Luther King, Jr. Regional Shoreline. However, at approximately 8 acres, the tidal marsh will be relatively limited in size, and there is a low likelihood for California Ridgway's rails to nest in the created marsh.

The revegetated transition zone habitat will attract a diversity of insect pollinator species.

4.1.4 Grading Plan

The tidal marsh creation area grading plan concept is presented in Figures 7 and 8. Before the created tidal marsh and transition zone are graded, soil from areas that exceed the RWQCB's contaminant screening criteria for cadmium will be overexcavated to a depth of 1.5 feet below the tidal marsh design grade, then backfilled with soil from within the wetland mitigation area that meet the screening criteria (Appendix B).

4.1.4.1 Created Tidal Marsh

Tidal salt marsh will be created by excavating the existing ground surface to elevations suitable for pickleweed-dominated tidal marsh habitat (Figure 7). Following grading, the elevation of most of the tidal marsh plain will be at MHHW (6.4 feet NAVD 88), near the upper end of the range of elevations suitable for tidal marsh vegetation, providing the marsh plain with resilience to sea level rise.

First-, second-, and third-order pilot slough channels will be cut into the marsh plain to encourage development of a dendritic slough channel connected to the constructed tidal inlet (Figures 7 and 8). The design anticipates that the configuration of the pilot slough channels will change overtime, via the natural sediment depositional and erosional processes induced by regular tidal flushing. First order channels will have an invert elevation of 4.75 feet NAVD88. Second-order channels will have a positive slope to transition to the bottom elevation of the third-order channel. The third order channels will have a positive slope to drain down to the constructed tidal inlet at 2.22 feet NAVD88. First- and second-order channels will have a top of bank at MHW (5.75 feet NAVD 88). The third-order channel will have a top of bank at MHHW. Although the marsh plain will be mostly flat in the vicinity of the third-order channel, the tidal marsh plain will be gently sloped (2% slopes) to provide drainage from the marsh plain into the first- and second-order channels. The excavated pilot slough channel system will allow regular tidal water exchange on the marsh plain, promote development of a complex drainage network, and increase the value of the tidal marsh for wildlife.

4.1.4.2 Created Transition Zone

The transition zone will be graded to form gentle slopes connecting the tidal marsh to the existing grade outside of the project area. By 2050, between 0.4 foot and 2.0 feet of sea level rise is expected along the California coast relative to sea level in 2000. Between 1.4 feet and 5.4 feet of sea level rise is predicted by 2100 (NRC 2012). The created transition zone will provide the created tidal marsh with resilience to climate change by providing space for the tidal marsh to spread vertically upslope when sea level rises. The slopes will range from about 10:1 (horizontal:vertical) to 30:1, rise about 3 vertical feet, and range from about 30 feet wide near the seawalls to up to about 100 feet wide at the northern end of the project site, where fewer landscape constraints are present (Figure 7).

4.1.5 Tidal Inlet Design

The site will be connected to tides in San Francisco Bay through construction of a permanent tidal inlet (Figure 8). The tidal inlet will be constructed by breaching the rock seawall at the south end of Alameda Point and will establish unmuted tidal action to the graded marsh (i.e., high tides in the created marsh will be equivalent to adjacent high tides in the bay). The tidal inlet was designed by HDR as a trapezoidal notch lined with riprap through the existing seawall. This design is intended to facilitate construction in a tidally influenced environment and minimize maintenance requirements. An open trapezoidal channel opening will allow free passage of sediment and debris which will reduce the potential for blockage compared to the use of tidegates or pipe connections. The width of the tidal inlet was set to provide a balance between allowing unmuted interaction with bay water levels and the tidal basin, while minimizing the amount of wave energy that will propagate through the inlet.

HEC-RAS modeling by HDR was performed to evaluate water elevations in the created tidal marsh, water velocities through the tidal inlet, and the interaction between the created marsh and the Bay (Appendix A). Modeling was evaluated for typical spring tide cycles, a king tide cycle, and a flood condition with water draining out to sea and starting water surface elevations at the top of seawall (a flood condition representing the maximum amount of water that could be contained within the tidal marsh creation area prior to seawall overtopping). The modeling evaluation confirmed that a 20 foot bottom width trapezoidal channel opening for the tidal inlet will meet the design objectives while striking a balance between creating an unmuted condition and minimizing wave energy propagation from the bay into the created tidal marsh.

4.1.6 Tidal Pilot Channels Design

The pilot channel system is designed to emulate the structure and function of a well-developed slough channel system in a natural, mature tidal salt marsh of similar size. The pilot channel design is based primarily on HDR's hydraulic modeling combined with H. T. Harvey & Associates' review of historical tidal marsh channel networks of similarly sized marshes in San Francisco Bay (Salomon et al. 2011) and guiding documents for San Francisco Bay tidal marsh restoration (Collins and Grossinger 2004).

A third order channel system was designed to match the tidal inlet width and thereby allow free flow of tidal water throughout the length of the created marsh. The second and first order channels are designed to be progressively narrower and shallower to distribute water from the wide third order channel throughout the tidal marsh plain in channels sized to mimic naturally occurring tidal drainage networks.

Hydraulic modeling by HDR confirmed that the channel network will be sufficient to convey unimpeded tidal flushing to the created tidal marsh during twice daily flood and ebb tides (Appendix A). It should be noted that the modeling was only based on surface flow interactions (groundwater interaction was not evaluated). Under high groundwater conditions groundwater will flow from adjacent soils and into the channel system. Under low groundwater conditions, tidal water will flow out of the channel system and into the adjacent soils.

Modeling indicates that velocities in the channel network will be slow enough (0-2 feet per second) that erosion protection in the channel network will not be warranted. Riprap protection is necessary, however, near the tidal inlet to protect against scour due to wave action. A 100 foot riprap zone around the tidal inlet is provided for scour protection from wave action. This riprap zone is shown in Figure 7. Although some scour could occur under high wave conditions beyond the 100 foot riprap zone, the proposed scour protection zone will protect the most susceptible area. The riprap zone will also protect against geometry and hydraulic changes due to erosion at the inlet.

4.1.7 Invasive Species Removal

Non-native ruderal vegetation will be removed from the "invasive plant material clearing and grubbing areas" shown in Figure 11 by mechanical removal (e.g., scraping with a tractor blade to remove the vegetative matter and upper 3–6 inches of seedbank/topsoil) prior to grading.

4.1.8 Soil Preparation Plan

4.1.8.1 Created Tidal Marsh

An organic amendment will be incorporated into the surface of the marsh plain to increase tidal marsh plant productivity. Tidal salt marshes require organic matter for proper ecosystem function. Organic matter in marsh sediments provides nutrients for plant growth, increases water retention, and increases cation exchange capacity, all of which benefits plant productivity. Organic matter also supports invertebrate communities, which assist with nutrient cycling and provide food for foraging marsh birds. Organic matter in tidal salt marshes in the San Francisco Bay typically ranges from approximately 3% to 10% (dry weight of organic matter/dry weight of sediment). Organic matter was 2.3% in the adjacent tidal reference marsh (the tidal marsh enhancement area). By contrast, in-situ organic matter at the design grade is approximately 0.5% in the proposed marsh creation area (Appendix B).

Organic matter is expected to decompose rapidly in the well-drained sandy soils at the mitigation site until plant growth begins to replace organic matter lost to decomposition and invertebrate foraging. Therefore, to achieve a postrestoration organic matter content of at least 2.3% (matching or exceeding the adjacent reference marsh), following excavation to the design grade and before seeding and planting, a composted green waste (i.e., plant material) product will be thoroughly incorporated into the upper 12 inches of the soil profile such that the organic content will reach or exceed 5% immediately after organic matter incorporation (Table 5).

The organic matter amendment will be applied throughout the limits of marsh plain grading from the top of bank of the constructed first-, second-, and third-order channels to the toe of the transition zone (Figures 9 and 10). Following amendment incorporation, the entire amended surface will be lightly track-walked if the monitoring restoration ecologist determines that the soils need to be recompacted and recompaction is feasible given the degree of surface soil moisture.

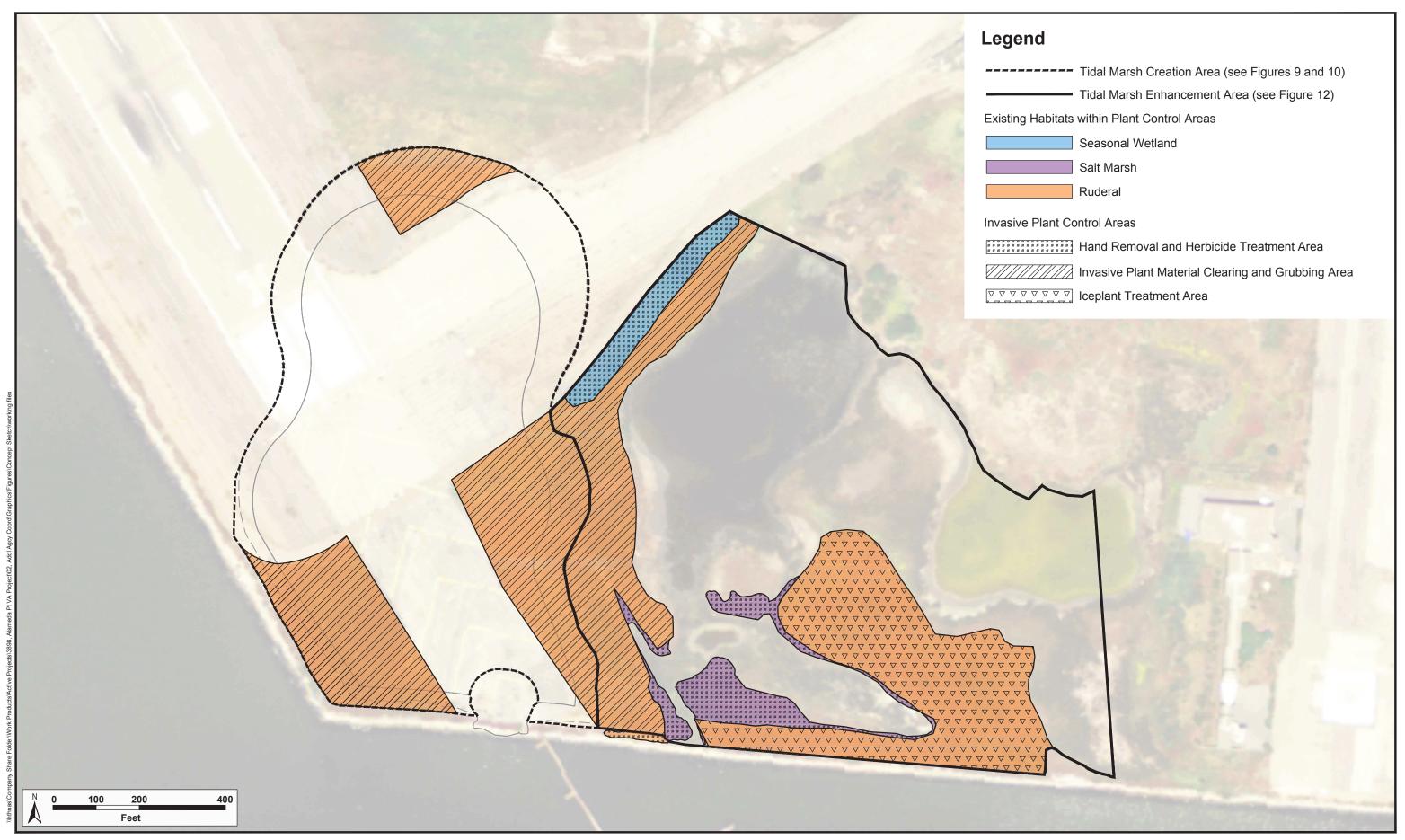




Figure 11. Wetland Mitigation Area Invasive Plant Control Plan

Alameda Point Veterans Affairs Project Wetland Mitigation and Monitoring Plan (3898-03)

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Table 5. Surface Soil Organic Matter Amendment Requirements

Location	Target % Organic Matter in the Upper 1 Foot of Soil (dry weight of organic matter/dry weight of sediment)
Created tidal marsh plain	5%
Created transition zone	2%

4.1.8.2 Created Transition Zone

An organic amendment will be incorporated into the surface of the transition zone to increase plant productivity and water-holding capacity of the soil. The surface soil in sandy coastal habitat types typically contains approximately 1–2% organic matter. Organic matter in soil increases plant survival and productivity by increasing soil water-holding capacity and nutrient availability in the created transition zone. In-situ organic matter at the design grades is approximately 0.5% in the proposed transition zone creation area (Appendix B). Organic matter is expected to decompose rapidly until plant growth begins to replace organic matter lost to decomposition. Therefore, a composted green waste product will be thoroughly incorporated into the upper 12 inches of the soil profile such that the organic content will reach or exceed 2% immediately after organic matter incorporation (Table 5).

The transition zone surface soil amendment will be applied from the toe of slope of the created tidal marsh up to the limits of grading (Figure 7). Following amendment incorporation, the area may be lightly track-walked if the monitoring restoration ecologist determines that the soils need to be recompacted; equipment track marks will be parallel to the slope contours to minimize erosion.

4.1.9 Native Plant Sourcing

The created tidal marsh will be revegetated using a combination of natural recruitment and installation of container plants; the transition zone will be revegetated using a combination of container plants and seeding.

Container plants for the tidal marsh will be contract-grown by a native plant nursery from propagules collected from Bay Area counties. However, vegetation in historical, native-dominated transition zones in sandy sediments has been largely eliminated from the margins of San Francisco Bay tidal marshes. As a result, populations of many ecologically suitable species are unavailable for collection within Bay Area counties. Therefore, container plants and seeds for transition zone restoration will be collected from within the following California floristic provinces: Northwestern California, Great Valley Central, Central Western California (Baldwin et al. 2012). If multiple sources of seed are commercially available for a given species, seed sources will be preferentially selected from ecologically similar habitats as close to the mitigation site as possible.

4.1.10 Seeding Plan

4.1.10.1 Created Tidal Marsh

Commonly occurring tidal marsh plant species, such as perennial pickleweed, will disperse into the created tidal marsh through aquatic seed dispersal. Seed applied to the tidal marsh plain likely would be washed away by

tides; therefore, the created tidal marsh area will not be seeded. Common marsh species that are unlikely to rapidly recruit by seed will be installed as container plants (Section 4.1.11 below).

4.1.10.2 Created Transition Zone

Few native plant seeds are expected to disperse into the transition zone by means of the tides or wind. Therefore, following grading and incorporation of organic compost, the entire created transition zone (all areas above the toe of slope shown in Figure 9) will be broadcast seeded using the alkali meadow grass and forb seed mix provided in Table 6. The purpose of seeding is to reduce soil erosion and establish low-growing, primarily rhizomatous alkali meadow habitat in the transition zone. Establishing a robust cover of native vegetation in the transition zone will reduce the long-term maintenance costs associated with weed and shrub/tree control. The transition zone will be broadcast seeded at the beginning of the rainy season. If the site is broadcast seeded, seed will be raked into the upper ¼ inch of the soil surface. Broadcast seeding results in good seed to soil contact and reduces seed predation, thereby reducing the amount of seed required for revegetation relative to other seeding methods.

Table 6. Seed Mix in the Created Transition Zone

Common Name	Scientific Name	Туре	Broadcast Seed Application Rate PLS ¹ /ac (lbs)
Blue wildrye	Elymus glaucus	Perennial grass	3.0
California brome	Bromus carinatus	Perennial grass	3.0
Creeping wildrye	Elymus triticoides	Perennial grass	3.5
Meadow barley	Hordeum brachyantherum <u>var. salt</u>	Perennial grass	4.0
Miniature Iupine	Lupinus bicolor	Annual forb	2.0
Mugwort	Artemisia douglasiana	Perennial forb	0.10
Purple needlegrass	Stipa pulchra	Perennial grass	3.5
Red Molate fescue	Festuca rubra var. molate	Perennial grass	3.0
Western ragweed	Ambrosia psilostachya	Perennial forb	0.25
Yarrow	Achillea millefolium	Perennial forb	0.10

Pure Live Seed (PLS) = [% purity of seed lot x % germination rate of species)/100]. Divide recommended application rate (lbs) above by the % PLS for each species to find total lbs. required to provide the application rate shown in the table.

4.1.11 Planting Plan

4.1.11.1 Created Tidal Marsh

Natural recruitment of tidal marsh plants through hydrochoric dispersal can result in the rapid revegetation of restored tidal marshes in San Francisco Bay. However, because Alameda Point is relatively isolated from adjacent marshes with seed source populations, seed dispersal is expected to be limited, a condition that could lead to slow plant establishment and a low-diversity tidal marsh. Therefore, natural recruitment will be augmented with container plantings to increase both the rate of vegetation establishment and diversity.

Small container plants will be installed on the marsh plain and tidal channels in the target habitats shown in Figures 9 and 10 in the tidal marsh creation area. Containerized plant species listed in Table 7 will be installed within each revegetation area (Figure 9) in patches of plantings. Planting will occur after the created marsh has been opened to tides and during the rainy season when tidal salinity is relatively low in San Francisco Bay and temperatures are cool.

Table 7. Created Tidal Marsh Plant Palette

Revegetation Area	Common Name	Scientific Name	On-Center Spacing between Patches	Percent Composition within Patches	On-Center Spacing of Plants within Patches
Low marsh	Pacific cordgrass	Spartina foliosa	30 feet	100%	See table note
Midmarsh a	Fleshy jaumea	Jaumea carnosa	40 feet	25%	2 feet
	Annual pickleweed	Salicornia depressa	40 feet	25%	2 feet
	Perennial pickleweed	Salicornia pacifica	40 feet	25%	2 feet
	Seaside arrow grass	Triglochin maritima	40 feet	25%	2 feet
High marsh ^b	Saltgrass	Distichlis spicata	40 feet	20%	2 feet
	Alkali heath	Frankenia salina	40 feet	10%	2 feet
	Seaside plantain	Plantago maritima	40 feet	10%	2 feet
	Fleshy jaumea	Jaumea carnosa	40 feet	10%	2 feet
	Marsh rosemary	Limonium californicum	40 feet	10%	2 feet
	Salt marsh sand spurry	Spergularia marina	40 feet	10%	2 feet
	Perennial pickleweed	Salicornia pacifica	40 feet	10%	2 feet
	Gumplant	Grindelia stricta	40 feet	20%	2 feet

Note: Low-marsh patches will be 100 square feet/patch; however, the dimensions and spacing of Pacific cordgrass patches will be as needed to distribute plantings vertically across the elevational range (1 foot above mean sea level to mean high water) at each patch location.

In the low-marsh revegetation area, Pacific cordgrass will be installed along tidal channels at elevations from 1 foot above MSL to MHW. Because the elevation range of available habitat will vary by channel location, the dimensions and spacing of Pacific cordgrass patches will be as needed to distribute plantings vertically across the elevational range at each patch location. In the midmarsh revegetation area, plants will be installed in multispecies patches on the marsh plain from MHW to MHHW. High-marsh plant clusters will be installed in multispecies patches on the marsh plain and into the lower-elevation portion of the transition zone from MHHW to 1 foot above MHHW (Figures 9 and 10). Gumplant (*Grindelia stricta*), which requires greater

^a Midmarsh plant patches will be 10 by 10 feet/patch.

^b High-marsh plant patches will be 10 by 10 feet/patch.

drainage, will be included only in planting clusters located within 4 feet of the third-order channel and above the toe of the slope at the upper edge of the marsh plain.

4.1.11.2 Created Transition Zone

High salt marsh vegetation will be planted in patches between MHHW and 1 foot above MHHW within the transition zone as described above (Table 7; Figures 9 and 10). Above 1 foot above MHHW (the upper transition zone), alkali meadow and coastal strand vegetation will be planted in patches. Restoration of alkali meadow and coastal strand vegetation in the upper transition zone is appropriate given the influence of occasional high tides and the sandy soils, respectively. To meet the dual goals to enhance native plant diversity and value for wildlife, the species listed in Table 8 will be installed in two different multispecies patches in the upper transition zone: patches with species selected to enhance plant diversity (diversity patches) and patches with species selected to enhance both plant diversity and habitat for pollinators (pollinator patches). Diversity and pollinator patches will be evenly distributed across the transition zone revegetation area.

Table 8. Transition Zone Revegetation Area Plant Palette

Patch Name	Common Name	Scientific Name	On-Center Spacing between Patches	Percent Composition with Patches	On-Center Spacing of Plants within Clusters
Pollinator	Yellow sand-verbena	Abronia latifolia	80 feet	10%	4 feet
patch ¹	Beach-bur	Ambrosia chamissonis	80 feet	10%	4 feet
	California aster	Symphyotrichum chilense	80 feet	10%	4 feet
	California fuchsia	Epilobium canum	80 feet	10%	4 feet
	Seaside daisy	Erigeron glaucus	80 feet	10%	4 feet
	Coast buckwheat	Eriogonum latifolium	80 feet	10%	4 feet
	Sand strawberry	Fragaria chiloensis	80 feet	10%	4 feet
	Gumplant	Grindelia stricta	80 feet	20%	4 feet
	Coyote mint	Monardella villosa	80 feet	10%	4 feet
Diversity	Mugwort	Artemesia douglasiana	80 feet	10%	2 feet
patch ²	Western ragweed	Ambrosia psilostachya	80 feet	10%	2 feet
	Beach-bur	Ambrosia chamissonis	80 feet	15%	2 feet
	Beach saltbush	Atriplex leucophylla	80 feet	15%	2 feet
	Saltgrass	Distichlis spicata	80 feet	20%	2 feet
	Coastal sagewort	Artemesia pycnocephala	80 feet	10%	2 feet
	American dune grass	Elymus mollis ssp. mollis	80 feet	10%	2 feet
	Alkali heath	Frankenia salina	80 feet	10%	2 feet

¹ Pollinator patches will be approximately 30 by 30 feet/patch to provide ample patch size to attract pollinators.

² Diversity patches will be approximately 20 by 20 feet/patch.

4.2 Tidal Marsh Enhancement Design

This section describes the target habitat conditions that drive the basis of design, as well as the proposed invasive plant removal and native plant revegetation design required to achieve the long-term habitat mitigation goals provided in Section 3.2.2. Figure 11 provides the invasive plant control plan in the tidal marsh enhancement area. Figure 12 provides the tidal marsh enhancement revegetation design.

4.2.1 Target Habitats

Three to 5 years after restoration is completed, there will be a substantial increase in native plant diversity and cover across the tidal marsh enhancement area relative to the existing condition. Invasive Algerian sea lavender and iceplant currently dominate the transition zone within the tidal marsh enhancement area (Figure 6). After restoration, these invasive plants will be largely eradicated and replaced by native plants. In the restored condition, species such as gumplant, seaside arrow grass, alkali heath, and salt marsh sand spurry (*Spergularia marina*) will be established in patches within the marsh. The transition zone will be composed of alkali meadow habitat dominated by saltgrass interspersed with dense patches of coastal strand plants selected to benefit birds and insects and provide weed-resistant ground cover.

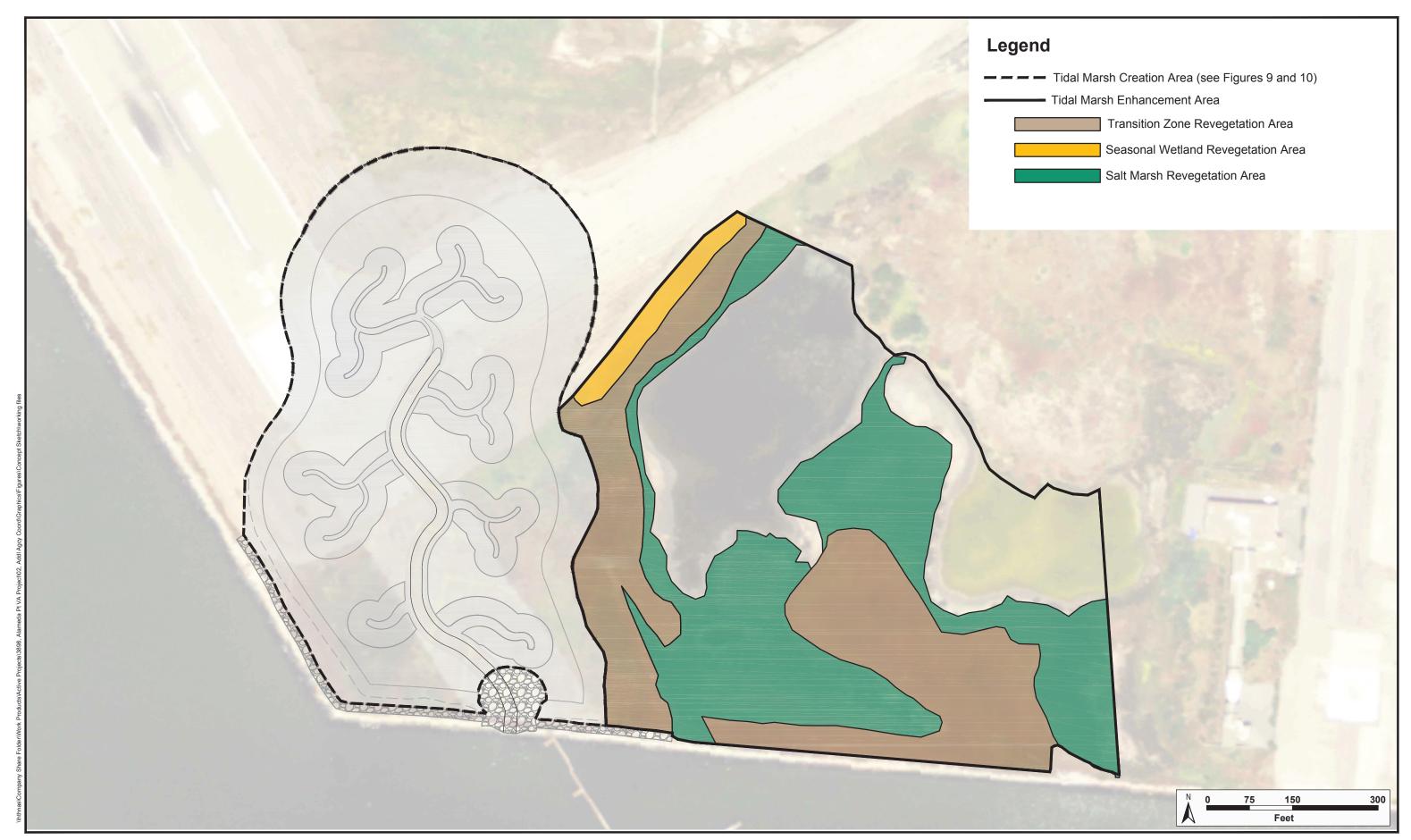
4.2.2 Target Soils and Hydrology

This plan does not involve altering soils or hydrology in the enhancement area. Soils and hydrology will be the same in the restored condition as in the existing condition (see Section 3.6.2.1).

4.2.3 Predicted Wildlife Use

Most wildlife species expected to use the tidal marsh enhancement area are similar to those that currently make use of this area. Waterbirds such as dabbling ducks will continue to forage in salinas and likely also in the enhanced tidal salt marsh when it is inundated. Migrant and wintering shorebirds also will forage in these habitats. Black-necked stilts, American avocets, Canada geese, and mallards will continue to nest in the salt marsh around the edges of the salinas.

The proposed enhancement of transition zone habitats in the tidal marsh enhancement area will improve nesting and foraging habitat for Bryant's savannah sparrows, and higher numbers of individuals may use these habitats in the future compared to existing conditions. Management of invasive weeds and planting of native plant species within the transition zones will increase the diversity and abundance of native invertebrates, landbirds, and mammals in these areas.





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4.2.4 Invasive Plant Removal

Algerian sea lavender and iceplant will be eradicated from the "hand removal and herbicide treatment area" shown in Figure 11 area using a combination of hand pulling and herbicide treatment. Removal of Algerian sea lavender will likely take approximately 3–5 years to complete as new recruits are expected to emerge from the seed bank after adult plants have been removed. Herbicide use must be prescribed by a state certified pest control advisor and approved by the U.S. Environmental Protection Agency for use in aquatic environments.

Iceplant and other non-native plants will be removed from the "invasive plant material clearing and grubbing areas" shown in Figure 11 by mechanical removal (e.g., scraping with a bulldozer blade to remove the vegetative matter and upper 3-6 inches of seedbank/topsoil).

Iceplant will be controlled in the "iceplant treatment area" on Figure 11 using primarily herbicide treatment with some hand removal. Herbicide use must be prescribed by a state certified pest control advisor and approved by the U.S. Environmental Protection Agency for use in aquatic environments.

4.2.5 Soil Preparation Plan

Soil in the tidal marsh is suitable for tidal marsh–enhancing plantings. Therefore, no soil preparation will be performed in the salt marsh revegetation area (Figure 12).

In the transition zone revegetation area, clearing and grubbing by mechanical means within the invasive plant material clearing and grubbing area will remove decomposing organic matter from the topsoil (Figure 11). Therefore, topsoil in the invasive plant material clearing and grubbing area will be amended with composted organic matter to a depth of 12 inches using the same methods described in the created transition zone (Section 4.1.8).

Where iceplant is removed by hand or controlled by herbicide in the iceplant treatment area and hand removal and herbicide treatment area (Figure 11), iceplant duff (decomposing plant material) will be left in place to suppress weed seeds and provide organic matter. Therefore, no additional organic amendment will be applied to these two weed control areas.

4.2.6 Revegetation Overview

Container plantings of native tidal marsh species will be installed in the salt marsh revegetation area and the seasonal wetland to increase native plant diversity and improve habitat for wildlife (Section 4.2.7; Figure 12).

In the transition zone revegetation area (Figure 12), a combination of seeding and container plant installation will be used to replace cover lost by invasive plant control and to enhance native plant diversity. In the invasive plant material clearing and grubbing area (Figure 11), the transition zone will be broadcast seeded with the same alkali meadow seed mix as applied in the created transition zone (Section 4.2.8). In the iceplant treatment area (Figure 11), saltgrass co-occurs with iceplant. If iceplant removal results in a substantial decrease in the cover

of saltgrass, saltgrass and other alkali meadow container plants will be installed to restore alkali meadow habitat in the transition zone. If iceplant is removed without impacting saltgrass, plantings will not be necessary to restored alkali meadow habitat – the existing saltgrass will provide alkali meadow habitat. Following these treatments, native coastal strand species container plantings will be installed in discrete patches in the transition zone revegetation area to enhance native plant diversity and improve habitat for wildlife (Section 4.2.9).

4.2.7 Native Plant Sourcing

Container plants for the seasonal wetland revegetation area will be contract-grown by a native plant nursery from propagules collected from Bay Area counties. The native plant sourcing for the salt marsh revegetation area and the transition zone revegetation will follow the same guidelines as described for the tidal marsh creation area in Section 4.1.9.

4.2.8 Seeding Plan

In areas that are cleared and grubbed, the transition zone revegetation area will be broadcast seeded using the seed mix and application rates provided in Table 6 (Section 4.1.10). Seed will be applied at the beginning of the rainy season to reduce seed predation and increase the duration of moist soils for seed germination and establishment.

4.2.9 Planting Plan

Figure 12 shows the revegetation areas in the tidal marsh enchantment area. Container plants will be installed in the revegetation areas during the rainy season, when tidal salinity is relatively low is San Francisco Bay.

Table 9 provides the recommended species palette and spacing for container plant installation in the salt marsh revegetation area (Figure 12). Because the tidal marsh species selected for enhancement require different abiotic conditions and those conditions vary spatially across the enhancement area, species listed in Table 9 will be installed in mono-specific patches in locations selected by a restoration ecologist in the field prior to installation.

Table 9. Salt Marsh Revegetation Area Plant Palette

Common Name	Scientific Name	On-Center Spacing between Patches	Percent Composition with Patches	On-Center Spacing of Plants within Patches
Alkali heath	Frankenia salina	50 feet	100%	1 foot
Gumplant	Grindelia stricta	50 feet	100%	1 foot
Pacific cordgrass	Spartina foliosa	50 feet	100%	1 foot
Salt marsh sand spurry	Spergularia marina	50 feet	100%	1 foot
Seaside plantain	Plantago maritima	50 feet	100%	1 foot
Seaside arrow grass	Triglochin maritima	50 feet	100%	1 foot

Note: Plantings will be installed in patches with each patch covering approximately 10 square feet.

Table 8 provides the recommended species palette and spacing for container plant installation in the transition zone revegetation area (Figure 12). The patch types and patch sizes in the transition zone revegetation area are identical to the patches described in Section 4.1.11 for the created transition zone.

Alkali wet meadow patches will be installed in the seasonal wetland revegetation area (Figure 12, Table 10).

Table 10. Seasonal Wetland Revegetation Area Plant Palette

Planting Cluster	Common Name	Scientific Name	On-Center Spacing between Patches	Percent Composition with Patches	On-Center Spacing of Individual Plants within Patches
Alkali wet meadow	Clustered field sedge	Carex praegracilis	40 feet	33%	2 feet
patch	Bog rush	Juncus effusus	40 feet	33%	2 feet
	Brown headed rush	Juncus phaeocephalus	40 feet	33%	2 feet

Note: Seasonal wetland patches will be 10 feet by 10 feet/patch.

4.3 Avoidance and Minimization Measures for Regulated Habitats and Special-Status Species during Mitigation Site Construction and Maintenance Activities

4.3.1 Avoidance and Minimization Measures to Protect the California Least Tern

Potential impacts on California least terns have been minimized to the extent possible through project design considerations, in collaboration with staff from the USFWS Refuge responsible for tern management at the site. The mitigation area is not located within nesting or foraging habitat for the California least tern, and project construction will occur outside of the least tern nesting season. Maintenance activities will occur year-round following project construction, but levels of disturbance associated with these activities are anticipated to be less than or equivalent to existing levels of disturbance at Alameda Point. Construction and maintenance access will conform to the requirements presented in Figure 13.

The mitigation area is located within the VA Undeveloped Area defined in the August 29, 2012 *Biological Opinion on the Proposed Naval Air Station Alameda Disposal and Reuse Project in the City of Alameda, Alameda County, California* (BO), which covers the California least tern (USFWS 2012). H. T. Harvey & Associates has prepared a Biological Assessment that proposes conservation measures to protect the California least tern during wetland mitigation project construction and long-term maintenance activities, and are intended to be consistent with the BO (H. T. Harvey & Associates 2017b). These measures will be reviewed, approved or modified by the USFWS during the project's Section 7 consultation between the USACE and the USFWS. The mitigation project will implement the final least tern conservation measures issued by the USFWS at the conclusion of the Section 7 consultation.



Figure 13. Vehicle Access Routes

4.3.2 Avoidance and Minimization Measures to Protect Nesting Birds

As described above, several species of birds nest on the site in ground vegetation, including the Bryant's savannah sparrow, which is a California species of special concern, and great blue herons. Construction and maintenance activities that occur during the bird nesting season (i.e., February 1 through August 31) could result in the incidental loss of eggs or nestlings, either directly through the destruction or disturbance of active nests or indirectly by causing the abandonment of nests. Such an impact would be considered a violation of the Migratory Bird Treaty Act (MBTA). Implementation of the following measures will ensure that project activities do not violate the MBTA:

- Measure 1. Avoidance. To the extent feasible, construction and maintenance activities should be scheduled to avoid the nesting season. If project activities are scheduled to take place outside the nesting season, all impacts to nesting birds protected under the MBTA will be avoided. The nesting season for most birds in Alameda County extends from February 1 through August 31.
- Measure 2. Preconstruction Surveys. If it is not possible to schedule construction or maintenance activities between September 1 and January 31, then preconstruction surveys for nesting birds should be conducted by a qualified ornithologist to ensure that no nests will be disturbed during project implementation. H. T. Harvey & Associates recommends that these surveys be conducted no more than 7 days prior to any construction or maintenance activities that disturb or remove vegetation. During this survey, the ornithologist will inspect potential nesting habitats (e.g., trees, shrubs, ruderal grasslands) in and immediately adjacent to the work areas for nests. If an active nest is found sufficiently close to work areas to be disturbed by these activities, the ornithologist will determine the extent of a construction-free buffer zone to be established around the nest (typically 300 feet for raptors or herons and 100 feet for other species), to ensure that no nests of species protected by the MBTA will be disturbed during project implementation.

4.3.3 Avoidance and Minimization Measures Protect Listed Fish Species

Construction of the tidal inlet may require dewatering to allow access for seawall removal, excavation, and reinforcement. Dewatering would be accomplished through construction of a temporary cofferdam at the seawall breach location. Installation of the cofferdam has the potential to impact the listed fish species described above. Therefore, it is anticipated that the USACE will initiate Section 7 consultation with the National Marine Fisheries Service (NOAA Fisheries) regarding the effects of the mitigation project on federal listed fish species. To minimize impacts to listed fish species, the mitigation project will conform to all avoidance and minimization measures required by NOAA Fisheries. HDR has prepared the project's National Marine Fisheries Service Draft Biological Assessment will be followed (HDR 2017) to facilitate the Section 7 consultation between USACE and NOAA Fisheries. This Biological Assessment contains recommended avoidance and minimization measures for NOAA Fisheries review during the Section 7 consultation.

4.3.4 ESA/Silt Fence

Jurisdictional tidal marsh and seasonal wetlands occur in proximity to the proposed mitigation earthwork (Figures 5 and 6). Boundaries between jurisdictional habitats and earthwork areas will be identified with orange mesh construction fencing, lathe with flagging, or a similar approach. Silt fencing will be installed prior to the start of earthwork to protect existing jurisdictional tidal marsh and seasonal wetlands from damage related to vehicle passage, grading, and clearing and grubbing.

4.3.5 Erosion Control and Water Quality Protection

A stormwater pollution prevention plan (SWPPP) will be prepared for the mitigation project consistent with federal and state regulations administered by RWQCB. The project will implement the SWPPP's best management practices for water quality protection during mitigation site construction. Following construction, minor erosion in the tidal marsh is expected in channels when the site is open to tides and this erosion is viewed as a natural process of slough channel formation. Erosion potential exists at the tidal inlet, and the design incorporates the use of riprap in this area to reduce erosion. Use of gentle slopes and seeding in the transition zone will minimize the risk of erosional rills in the transition zone.

Areas outside of the mitigation area disturbed during construction will be revegetated using the construction area disturbance seed mix provided in Table 11. The seed mix will be applied at the beginning of the rainy season by broadcast seeding according to the rates shown in Table 11.

Table 11. Construction Area Disturbance Seed Mix

Common Name	Scientific Name	Broadcast Seeding Rate Pounds of PLS ¹ Per Acre	Туре
California meadow barley	Hordeum brachyantherum var. salt	10	Perennial grass
Creeping wild rye	Elymus triticoides	4	Perennial grass
Molate fescue	Festuca rubra var. molate	6	Perennial grass

¹ Pure Live Seed (PLS) = [% purity of seed lot x % germination rate of species)/100]. Divide recommended application rate (lbs) above by the % PLS for each species to find total lbs. required to provide the application rate shown in the table.

4.4 Restoration of Temporary Wetland Impact Areas

4.4.1 Development Area

All temporary wetland impact sites within the development area shown on Figure 4 will be restored to predisturbance conditions. Each individual site will be restored to its original elevation, hydrologic condition and soil compaction level, and will be broadcast seeded for erosion control. It is anticipated that these areas will quickly return to their predisturbance vegetation composition through natural recruitment. The broadcast seed mix is provided in Table 11.

4.4.2 Mitigation Area

Tidal marsh and seasonal wetland vegetation trampled during invasive plant removal is expected to naturally recover from disturbance within a single growing season. In areas affected by vehicular access, vegetation is also expected to recover within a growing season. Any ruts or depressions caused by access will be smoothed using hand tools and the topography and hydrology will be restored to the preimpact condition following enhancement activities. If any temporary impact areas are denuded to less than 50% cover as the result of impacts, they will be actively revegetated through installation of tidal marsh plugs planted on 1 foot centers within 1 year of the impact. Plant materials installed will be either contract grown or harvested from surrounding marsh areas.

4.5 Construction Schedule

4.5.1 Tidal Marsh Creation Area

Earthwork for the tidal marsh creation area will be carried out between September 1 and November 30, 2019; this work window avoids and minimizes impacts to breeding least terns and listed fish. Seeding will occur between October 1 and November 30, 2019 at the beginning of the rainy season. Container plant installation in the tidal marsh creation area will be carried out between November 15 and December 31, 2019 during the early portion of the rainy season. Container plants on the marsh plain will be installed after the site is opened to tidal action to ensure that marsh plain soils are regularly wetted by the tides at the time of plant installation.

4.5.2 Tidal Marsh Enhancement Area

Clearing and grubbing to remove invasive plants will occur concurrent with grading in the tidal marsh creation area. Herbicide treatment and hand removal of invasive plants in the tidal marsh enhancement area will be carried out as early in 2019 as feasible (e.g., summer 2019) to reduce invasive plant seed output prior to grading the created marsh. Container plant installation in the tidal marsh enhancement area will be carried out between November 15 and December 31, 2019 during the early portion of the rainy season.

4.5.3 Temporary Impact Areas

The temporary impact areas in the development area will be restored within one growing season of impacts. In the tidal marsh enhancement area, areas denuded by herbicide will be replanted within one growing season of impacts. Vehicular access impacts (crushed vegetation and possibly soil ruts) will repaired and vegetation is expected to fully recover within one growing season.

Section 5. Maintenance Plan

5.1 Overview

Maintenance activities will be conducted in the wetland mitigation area for a period of 5 years following construction. The goal of mitigation site maintenance is to facilitate the establishment of the target habitats. Maintenance activities during the 5-year period will include dead plant replacement, reseeding, invasive plant control, and trash/debris removal, described below. In addition to this maintenance plan, annual site observations and data collected by a qualified restoration ecologist may be used to further specify maintenance actions necessary to establish the mitigation area.

At the end of the 5-year maintenance period, assuming the permitting agencies signoff on the wetland mitigation area, the long-term management period will begin. The long-term management plan in provided in Section 7. If the wetland mitigation site does not receive agency signoff after 5 years, either these maintenance activities or a revised maintenance plan approved by the agencies will continue to be implemented by the VA until agency signoff is obtained.

5.2 Maintenance Activities

5.2.1 Dead Plant Replacement and Reseeding

The project's restoration ecologist may, at any point during maintenance period, recommend replacement/ supplemental native plant installation or reseeding within the mitigation site. While there is no criterion for the number of plants alive for a given year, replanting or reseeding may be recommended if the ecologist deems it necessary to achieve the project's final success criterion for percent cover. If replanting or reseeding is deemed necessary by the monitoring ecologist, the ecologist will provide the recommended replanting/reseeding species palettes and a map of replanting/reseeding locations. The monitoring ecologist's replanting/reseeding recommendations will be based upon the results of monitoring and will favor species that exhibit successful establishment at the site. It is anticipated that approximately 20% of installed container plants will be replaced in Year 1, 20% of installed container plants will be replaced in Year 3 to offset anticipated plant mortality. Reseeding in the transition zone will be applied via broadcast seeding according the rates in Table 6. Seed will be broadcasted and raked into the upper ½ inch of the soil surface between September 1 and October 15.

5.2.2 Invasive Plant Removal

Invasion of wetland mitigation/restoration sites by invasive, nonnative plant species, both herbaceous and woody, is typically a significant obstacle to native habitat establishment. Therefore, the wetland mitigation area will likely require invasive plant removal during the maintenance period. The goal of invasive plant removal will be to (1) limit invasive plants to a combined total cover of less than 5% in the created tidal marsh and transition

zone, (2) prevent establishment of any nonnative plants that threaten the attainment of the native cover goals and (3) prevent establishment of native or nonnative vegetation that could adversely impact the quality of the habitat for the least tern.

For the purpose of this MMP, invasive plant species are defined as nonnative plant species with an ecosystem impact rating of "high" by the California Invasive Plant Council (Cal-IPC) (2015) and the following nonnative plants recognized as highly invasive in tidal marsh and transition zone habitats (with low to moderate Cal-IPC ecosystem impact ratings):

- Invasive sea lavenders (*L. ramosissimum* ssp. *provinciale* and *L. duriusculum*)
- Russian thistle (Salsola soda)
- Stinkwort
- Iceplant
- Slender leafed iceplant

Invasive plant species will be actively monitored and controlled as necessary to achieve the performance and success criteria in Section 6 below. A qualified biologist will assess the type, distribution and abundance of invasive plant species and, when warranted, recommend effective control measures. Invasive plant species control will be accomplished by manual/mechanical removal (e.g., hand pulling or string-trimming) or by the use of an herbicide. Herbicide use must be prescribed by a state certified pest control advisor and approved by the U.S. Environmental Protection Agency for use in aquatic environments.

5.2.3 Avoid Harm to Low-Growing Native Plants

Low-growing native plant species which naturally establish in the wetland mitigation area will be identified and avoided during weed control and trash removal activities. Native species that are expected to grow to greater than 2 feet in height above the adjacent tarmac will be removed to protect the least tern viewshed.

5.2.4 Trash/Debris Removal

During the 5-year maintenance period, inorganic debris and trash deposited within the mitigation area will be removed when maintenance activities are performed.

5.2.5 Tidal Inlet Maintenance in the Tidal Marsh Creation Area

During the 5-year maintenance period, any large wrack/debris that lodges in the tidal inlet or tidal channels could inhibit flow through the tidal basin or introduce the potential for localized scour holes. This debris will be removed on an as needed basis. Although riprap is included in the tidal inlet opening to limit the potential for scour, areas at the perimeter of the riprap protection will be more vulnerable to erosion than areas further away from the inlet during the vegetation establishment period. If deemed necessary by a qualified engineer

and ecologist, and with specific approval from the USACE and RWQCB, earthwork and replanting may be required during the 5 year period around the perimeter of the tidal inlet.

5.2.6 Maintenance Monitoring

A qualified restoration ecologist will monitor the entire wetland mitigation area on a regular basis each year to ensure that maintenance objectives are being met. A qualified engineer will monitor the tidal inlet once annually after the rainy season for wrack deposition and scour/sediment deposition. Following each maintenance monitoring visit, the site monitor will provide their observations and recommendations to the VA in a technical memorandum.

5.2.7 Maintenance Schedule

The mitigation area will be maintained on a regular basis during the 5-year maintenance period. In Years 1-3, regular maintenance events consisting of invasive plant removal, and trash/debris removal, will occur according to the schedule below (Table 12). The monitoring restoration ecologist will be present at both the inspection (to prepare maintenance recommendations) and the maintenance event. Reseeding and replanting will occur in October and December, respectively. Tidal inlet maintenance will occur in March, prior to the growing season in the created tidal marsh, and in September.

In Years 4-5, a reduced level of effort is expected to be sufficient to maintain the mitigation area. Regular maintenance events are anticipated only in March and September (2 events); similarly the monitoring restoration ecologist's maintenance inspections will be reduced to 4 per year; one prior to and one during each maintenance event. Tidal inlet maintenance will continue to occur in Years 4-5, if necessary, during March and September. Reseeding and replanting are expected only in Years 1-3 during the months shown in Table 12.

Table 12. Year 1-3 Maintenance Schedule

Maintenance inspection	Pregu	Son February	y Warch	Aprii Aprii	S W varies	by ye	ار مرد مد:	August	September	October	November	December
Invasive plant removal/ herbicide control	•	: 8/ye	ar (Feb					June,	Augu	st, Oc	tober,	
Trash/debris removal		,	ar (Feb ar (Ma	•	•		_			ecen	nber)	
Reseeding										Χ		
Replanting												Χ
Tidal inlet maintenance			Χ						Χ			

5.2.8 Avoidance and Minimization Measures

Avoidance and minimization measures to protect the California least tern and nesting birds are the same as those that will be implemented for site construction, and are provided in Section 4.3 above.

Section 6. Postconstruction Monitoring Plan

6.1 Long-Term Habitat Goals and Success Criteria Overview

This monitoring plan defines the objective, measurable performance and final success criteria that will be used to determine if the mitigation area is on a trajectory towards meeting the long-term mitigation goals. The wetland mitigation area will be monitored annually at the end of the growing season for 5 years or until success criteria are achieved. The first annual monitoring event will occur at the end of the first growing season following plant installation. Monitoring data will be collected by a qualified restoration ecologist and compared to the performance and success criteria to evaluate mitigation success. The monitoring results will provide feedback to inform maintenance to ensure successful habitat establishment. The mitigation site will be considered to be on a successful restoration trajectory when monitoring, as described in this plan, demonstrates that final success criteria set forth below have been met.

The long-term habitat establishment goals of the project are to (1) create at least 7.25 acres of new jurisdictional tidal marsh bordered by a tidal marsh-upland transition zone (transition zone) and (2) enhance the function of existing tidal marsh habitat by reducing invasive plant cover and increasing native plant diversity in the salt marsh and adjacent transition zone. At maturity, the created wetland areas will consist of native-dominated tidal salt marsh habitat supported by a dendritic slough channel network permanently open to the full range of high tides. The enhanced salt marsh will be dominated by native tidal marsh plants and both marsh areas will be bordered by transition zone habitat composed of a mosaic of alkali meadow, coastal strand, and nonnative California grassland habitat. Erosion, sedimentation, wrack deposition and invasive plant colonization will not threaten the mitigation areas attainment of the below success criteria. No large statured vegetation that would adversely impact the least tern will be established.

6.2 Baseline Data Collection

Prior to construction, a qualified restoration ecologist will collect baseline data documenting the preenhancement Shannon Wiener Diversity Index (Shannon's index) in both the tidal marsh and transition zone in the enhancement area. The methods to determine the preenhancement Shannon's index will the same described in the methods section below.

6.3 Construction Monitoring

A qualified restoration ecologist will monitor construction of the mitigation areas to assist with field fitting recommendations and to collect data on any significant deviations between the constructed condition and the mitigation design presented herein.

6.4 Biological As-Built Report

Construction monitoring data collected by a qualified restoration ecologist and engineer/hydrologist will be used to prepare a biological As-Built Report for submittal to USACE, RWQCB and USFWS. Immediately following completion of the mitigation installation (in February 2020), a qualified engineer will survey the surface elevation of the constructed tidal marsh, transition zone, tidal inlet, and tidal channels, for comparison to the grading plan. Any significant deviations between the constructed condition and the mitigation design will be documented in the report. Deviations may include but are not limited to habitat elevations, site configuration, site surface area, and plant or seed species palette. Photodocumentation of the mitigation areas will be conducted from a number of fixed locations selected immediately following installation. Future analysis of the site will be based on this report and the preenhancment Shannon's index (Section 6.2). The As-Built Report will be submitted to permitting agencies within 3 months of the completion of mitigation construction. The report will include photodocumentation of the pre and post-construction condition.

6.5 Ecological Performance and Final Success Criteria

Performance criteria are interim targets that provide quantitative indicators of the trajectory of habitat establishment and inform maintenance measures. However, failure to meet performance criteria does not necessarily indicate failure of the mitigation site and will not result in an extended monitoring period. Achievement of the final success criteria is required to demonstrate that the site is on a trajectory towards achieving the project's long-term habitat goals and to obtain signoff from the permitting agencies. Failure to meet the final success criteria will require the permittee to consult with the permitting agencies to identify appropriate remedial measures acceptable to the agencies.

Performance and final success criteria were determined by considering the mitigation goals, the successional trajectory of the installed habitats, and the habitat requirements for of the least tern. The performance criteria for erosion and tidal inlet function were developed in collaboration with the project engineer, HDR Engineering.

6.5.1 Final Success Criteria

6.5.1.1 Tidal Marsh Creation Area

The final success criteria in the tidal marsh creation area will be as follows (Table 13):

• Created Wetland Acreage. At least 7.3 acres of tidal salt marsh habitat shall be created. Tidal salt marsh habitat will be composed of a mix of jurisdictional wetlands (vegetated tidal marsh) and other waters (e.g., nonvegetated tidal channels, marsh ponds, marsh pannes, and mudflats). The acreage of the created tidal marsh will be verified with a wetland delineation in Year 3. This success criteria is designed to ensure that the required acreage of created marsh is achieved. A wetland delineation is required in Year 3 (rather than Year 5) in order to allow ample time to implement remedial actions if the requisite acreage has not been created.

• **Percent Cover.** The average percent cover of native obligate, facultative wetland, and facultative species (Lichvar et al. 2016) combined will be at least 60% by Year 5 in the created tidal marsh. The average percent cover of native and nonnative plant species combined will be at least 60% in the created transition zone.

These criteria ensure that the majority of the created tidal marsh will be jurisdictional wetlands, rather than other waters. A criterion of 60% vegetation cover is reasonable to achieve in 5 years based on H. T. Harvey & Associate's experience monitoring other marsh restoration sites graded to tidal marsh elevations. The 60% cover criterion in the transition zone is an appropriate target given that coastal strand vegetation plant communities have relatively sparse cover and because the sandy, low soil moisture conditions in the transition zone will likely inhibit dense vegetation establishment.

• Native Plant Diversity. The created tidal marsh will have a Shannon's index greater than the preenhancement native plant diversity index for the salt marsh in the tidal marsh enhancement area. The created transition zone will have a diversity index greater than the preenhancement diversity index for the transition zone in the tidal marsh enhancement area.

Monitoring plant diversity will ensure that the goal to create diverse tidal marsh and transition zone will be met (specifically, that the created habitats will have greater native plant diversity than the existing condition in the enhancement area). Shannon's index is a commonly used measure of community diversity that takes into account species richness and evenness while valuing rare occurrences of species. Index values hypothetically range from 0 to infinity. A monotypic plant community would have value of 0. A value of 7 indicates an extremely rich community while values under 1 suggest a community low in diversity. Values above 1.7 indicate a relatively diverse community.

- Invasive Plants. The average percent cover of invasive plants will be less than 5% in Years 1–5. Invasive species are defined in Section 5. This criterion ensures highly invasive plants will be a minor component of the restored plant community.
- Vegetation Height. No vegetation will rise more than 2 feet above the elevation of the adjacent tarmac (situated at approximately 10 feet NAVD 88). This criterion ensures that vegetation will not obstruct the view shed of the least tern.
- Topographic Change and Tidal Inlet Stability. No head cutting or erosion of channels from the created marsh plain will dewater the salinas in the tidal marsh enhancement area. No substantial erosion that threatens attainment of the mitigation goals will be present. Minor changes to basin topography and pilot slough channel side slopes are anticipated. For example, the design goals allow for natural tidal geomorphic processes to modify the configuration of the excavated pilot channels (e.g., fill 1st or 2nd order channels and erode/create additional 1st or 2nd order channels). Topographic changes should not, however, negatively affect attainment of the mitigation goals.

The tidal inlet and associated slough channel mouth will transmit tidal flows sufficient to provide tidal flushing of the tidal marsh creation area to support intertidal mudflat, vegetated tidal salt marsh,

and transition zone habitats. Water within the tidal marsh creation area should drain back to the bay by flowing out through the tidal inlet after each tide recedes.

Table 13. Performance and Success Criteria for the Tidal Marsh Creation Area

Annual Performance/Final					
Success Criterion	Year 1	Year 2	Year 3	Year 4	Year 5
Tidal Marsh					
Wetland Delineation	-	-	≥7.3 ac	-	-
Hydrology/Acreage	≥7.3 ac below HTL	≥7.3 ac below HTL	≥7.3 ac below HTL	≥7.3 ac below HTL	≥7.3 ac below HTL
Percent Cover Native Species	-	>Year 1	>Year 2	>Year 3	≥60%
Native Plant Diversity	>baseline	>baseline	>baseline	>baseline	>baseline
Invasive Plant Cover	≤5%	≤5%	≤5%	≤5%	≤5%
Vegetation Height	<2 feet				
Topographic Change and Tidal Inlet Stability	Qualitative expert opinion	Qualitative expert opinion	Qualitative expert opinion	Qualitative expert opinion	Qualitative expert opinion
Transition Zone					
Percent Cover Native and Nonnative Species	-	>Year 1	>Year 2	>Year 3	≥60%
Native Plant Diversity	>baseline	>baseline	>baseline	>baseline	>baseline
Invasive Plant Cover	≤5%	≤5%	≤5%	≤5%	≤5%
Vegetation Height	<2 feet				

6.5.1.2 Tidal Marsh Enhancement Area

The final success criteria in the tidal marsh enhancement area in Year 5 will be as follows (Table 14):

- **Percent Cover.** The average percent cover of native and nonnative plant species combined will be at least 60% in the enhanced transition zone at the end of five years.
- Native Plant Diversity. The enhanced salt marsh will have a Shannon's index that is greater than the preenhancement Shannon's index for the salt marsh in the tidal marsh enhancement area. The enhanced transition zone will have a Shannon's index greater than the preenhancement Shannon's index for the transition zone in the tidal marsh enhancement area. These criteria will ensure that the mitigation achieves the goal of increasing native plant diversity in the tidal marsh enhancement area.
- Invasive Plants. The average percent cover of invasive plants will be less than 5% in Years 1–5. Invasive species are defined in Section 5.2.2.
- **Vegetation Height.** No vegetation will rise more than 2 feet above the elevation of the adjacent tarmac (situated at approximately 10 feet NAVD 88).

Table 14. Performance and Success Criteria for the Tidal Marsh Enhancement Area

Annual Performance/Final Success Criterion	Year 1	Year 2	Year 3	Year 4	Year 5
Tidal Marsh					
Native Plant Diversity	>baseline	>baseline	>baseline	>baseline	>baseline
Invasive Plant Cover	≤5%	≤5%	≤5%	≤5%	≤5%
Vegetation Height	≤2 feet				
Transition Zone					
Percent Cover Native and Nonnative Species	-	>Year 1	>Year 2	>Year 3	≥60%
Native Plant Diversity	-	>baseline	>baseline	>baseline	>baseline
Invasive Plant Cover	≤5%	≤5%	≤5%	≤5%	≤5%
Vegetation Height	<2 feet				

6.5.2 Performance Criteria

6.5.2.1 Tidal Marsh Creation Area

This section describes the performance criteria for the tidal marsh creation area (Table 13).

Hydrology. During Years 1–5, at least 7.3 acres of tidal marsh habitat will be situated below the high tide line (HTL). If the HTL is not visible in the field, the area below approximately 0.5 foot above MHHW will be mapped for comparison to the hydrology criterion. In a fully tidal marsh in Central San Francisco Bay, 0.5 foot above MHHW is a conservative proxy for the elevation of the high tide line.

Percent Cover. The average percent cover of native obligate, facultative wetland, and facultative species combined will progressively increase over time in the created tidal marsh during Years 1–5. The average percent cover of native and nonnative herbaceous vegetation combined will progressively increase over time in the created transition zone during Years 1–5.

Native Plant Diversity. In Years 1–5, tidal marsh creation area will meet the Shannon's diversity final success criteria in Section 6.5.1.

Invasive Plant Cover. The average percent cover of invasive plants will be less than 5% in Years 1–5. Invasive species are defined in Section 5.2.2.

Vegetation Height. No vegetation will rise more than 2 feet above the elevation of the adjacent tarmac (situated at approximately 10 feet NAVD 88) in Years 1–5.

Topographic Change and Tidal Inlet Stability. No head cutting or erosion of channels from the created marsh plain will dewater the salinas in the tidal marsh enhancement area. No substantial erosion that threatens attainment of the mitigation goals will be present. Minor changes to basin topography and pilot slough channel

side slopes are anticipated. For example, the design goals allow for natural tidal geomorphic processes to modify the configuration of the excavated pilot channels (e.g., fill 1st or 2nd order channels and erode/create additional 1st or 2nd order channels). Topographic changes should not, however, negatively affect attainment of the mitigation goals.

The tidal inlet and associated slough channel mouth will transmit tidal flows sufficient to provide tidal flushing of the tidal marsh creation area to support intertidal mudflat, vegetated tidal salt marsh, and transition zone habitats. Water within the tidal marsh creation area should drain back to the bay by flowing out through the tidal inlet after each tide recedes.

6.5.2.2 Tidal Marsh Enhancement Area

This section describes the performance criteria for the tidal marsh enhancement area (Table 14).

Percent Cover. The average percent cover of native and nonnative herbaceous vegetation combined will progressively increase over time in the transition zone portion of the tidal marsh enhancement area during Years 1–5.

Native Plant Diversity. In Years 1–5, the tidal marsh enhancement area will meet the species diversity final success criteria in Section 6.5.1.

Invasive Plant Cover. The average percent cover of invasive plants will be less than 5% in Years 1–5. Invasive species are defined in Section 5.2.2.

Vegetation Height. No vegetation will rise more than 2 feet above the elevation of the adjacent tarmac (situated at approximately 10 feet NAVD 88) in Years 1–5.

6.6 Monitoring Methods

6.6.1 Created Wetland Acreage/Hydrology

The acreage that is below the elevation of the high tide line at the created tidal marsh will be mapped annually. The high tide line will identified using field indicators according to the most recent USACE guidance, then mapped with a global positioning unit (GPS) with sub-meter accuracy. The mapping will verify that hydrology is suitable to establish jurisdictional (Clean Water Act Section 404) tidal wetlands at the mitigation site. Visual indicators of the high tide line (e.g., wrack, sediment) take time to establish in a restored marsh. If the high tide line is not visible in the field, the area of created marsh below 0.5 foot above MHHW at the Alameda tide station (NOAA tide station 9414750; 6.87 feet NAVD 88) will be mapped as a proxy for the high tide line. This elevation is a conservative estimate for the location of the high tide line at the mitigation site. To map the 6.87 feet NAVD 88 tide, the water line will be flagged during a predicted high tide of approximately 6.87 feet NAVD 88 then mapped with GPS unit. The acreage of created marsh below this elevation will be determined using a geographic information system (GIS) for comparison to the performance and final criteria.

6.6.2 Percent Cover

Percent cover will be measured annually near the peak of the growing season in the created marsh (August – September), the enhanced marsh, and in the combined enhancement and created transition zones (three sampling areas). The sample frame for the created marsh will be all areas below the high tide line. In all cases, plants species cover will be quantified using the quadrat method after Bonham (1989). Individual samples will be taken from random locations using a 1 meter squared quadrat. At each location, the percent cover of each species occurring within each quadrat will be visually estimated to the nearest 1%. The wetland indicator status and invasive plant status of each species will be determined. The number of quadrats employed will be based on the variability of the site's vegetative cover and will be determined by evaluating the average cover value obtained over an increasing number of quadrats. The number of quadrats will be the point where additional samples do not substantially change the average cover value obtained (Kershaw 1973). Initially, a minimum of 0.1% of the surface area will be sampled.

6.6.3 Native Plant Diversity

Prior to restoration, an average Shannon's index (H) of native plant species diversity will be calculated for the enhanced marsh and the combined enhancement and created transition zones using percent cover data. Percent cover data will be collected as described in Section 6.6.2. The index will then be calculated as follows:

The proportion of native species i relative to the total number of native species (P_i) is calculated, and then multiplied by the natural logarithm of this proportion (ln P_i). The resulting product is summed across species, and multiplied by -1:

$$H = \sum_{i=1}^{s} - (P_i * \ln P_i)$$

$$i=1$$

This will constitute the baseline data for the mitigation site. In Years 1–5, average index values will be calculated for the created marsh, the enhanced marsh, and the combined enhancement and created transition zones using the annually collected percent cover data.

6.6.4 Invasive Plant Cover

Percent cover of invasive plant species will be monitored throughout the wetland mitigation area in Years 1–5. Invasive plant cover will be quantified from quadrat sampling data (Section 6.6.2) for the created marsh, the enhanced marsh, and the combined enhancement and created transition zones. Invasive species are defined in Section 5.2.2.

6.6.5 Vegetation Height

A restoration ecologist will evaluate biannually during early spring (February-April) and summer (June-August) whether any vegetation in the wetland mitigation area exceeds 2 feet in height above the tarmac surface (e.g., extends 2 feet above 10 feet NAVD 88). Vegetation height will be assessed by walking along the northern edge

of the mitigation area and visually inspecting the mitigation area for any vegetation that appears to extend above 10 feet NAVD 88. The height of vegetation identified in this way will measured with a meter stick and the approximate elevation of the ground surface will be determined based on the project's as-built topographic survey (in the tidal marsh creation areas) or based on the existing condition 1-foot elevation contours (in the tidal marsh enhancement area; Figure 6). All areas where vegetation exceeds 12 feet NAVD 88 in height will be mapped with a GPS unit and the species of vegetation recorded to guide removal.

6.6.6 Topographic Change and Tidal Inlet Stability

6.6.6.1 Topographic Change

The monitoring restoration ecologist will conduct low tide visual inspections of the bed and banks of created pilot channels and the created transition zone side slopes. Shifting of pilot channel alignments and natural formation of new first- and second-order channels is expected in the created marsh. Formation of a minor erosional bench may establish along the high tide line from wind waves. However this erosion should not substantially reduce the extent of the marsh plain, reduce the tidal prism, or transport excessive sediment from the transition zone to the marsh plain. Therefore,

- channel banks should be inspected for erosion and/or slumping that could interfere with vegetation establishment of target vegetation on the marsh plain;
- the channels should be inspected for excessive wrack, debris, or sedimentation that could substantially reduce tidal exchange onto the marsh plain and thereby inhibit vegetation establishment;
 and
- the transition zones should be inspected for erosional features, such as formation of gullies formed by surficial runoff or areas along the constructed seawall splash pad where the ground surface is slumping, indicating possible piping of water through the seawall.

These inspections should be performed one, three, and six months after opening of the site to tides, then annually in Years 1, 2, 3, and 5. If at any time topographic changes are judged to compromise attainment of the mitigation goals, then the VA will propose a remedial action plan for regulatory agency approval.

6.6.6.2 Tidal Inlet Stability

A qualified engineer and restoration ecologist will simultaneously conduct a reconnaissance inspection once per year during a low tide, to assess whether the tidal inlet and slough channel mouth are meeting the performance standard. Wrack/debris should be removed on an as-needed basis and does not require regulatory agency approval. However, if the qualified engineer and restoration ecologist judge that sediment erosion, sediment deposition, or rip rap settlement at the inlet could compromise the mitigation goals, then the VA will propose a remedial action plan for regulatory agency approval.

6.6.7 Site Maintenance

Frequent site maintenance inspections will be made during the Years 1–3 plant establishment period (6 inspections in Year 1, 5 inspections in Year 2, 4 inspections in Year 3. Biannual inspections will be made in Years 4-5. Qualitative assessments of the site will be made and reported during these visits. The purpose of monitoring during the growing season is to assess the overall performance of the vegetation and the adequacy of vegetation maintenance. Assessment of the following factors will be made during maintenance monitoring site visits:

- Vegetation establishment with special attention paid to areas lacking vegetation
- Mortality/loss of installed wetland plants
- Invasion of the mitigation site by invasive, nonnative weeds
- Accumulation of trash and/or inorganic debris

6.6.8 Photodocumentation

Photodocumentation of the mitigation areas will be conducted from a number of fixed locations selected immediately following installation. Photographs will also be taken to record any event that may significantly affect the success of the mitigation, such as adverse hydrological events, erosion, or vandalism.

6.6.9 Wetland Delineations

A wetland delineation of the created jurisdictional habitats will be conducted 3 years following site construction (Environmental Laboratory 1987, USACE 2008). The mitigation acreage criterion will be considered met if the wetland delineation reveals that the requisite 7.3 acres of new USACE jurisdictional area (wetlands and other waters) was created. If the requisite acreage is not achieved in Year 3, an assessment of the factors preventing establishment of the requisite acreage will be included in the Year 3 report. Once annual monitoring of the high tide line reveals that the requisite acreage of habitat has likely been achieved, a wetland delineation will be undertaken at the site to confirm the created wetland acreage has been established.

6.7 Reporting

Annual monitoring reports will be submitted to USACE and RWQCB by December 31 of each monitoring year. Maps showing monitoring locations and copies of photodocumentation will be provided with reports. Field data sheets will be made available for review upon request.

Reports will be prepared in the following format:

- 1. Executive Summary
- Introduction
- 3. Methods

- 4. Results and Discussion
- 5. Management Recommendations
- 6. Literature Cited
- 7. Appendices

6.8 Completion of Mitigation

At a minimum, monitoring will be conducted over a 5-year period. If the monitoring restoration ecologist determines that the mitigation areas have successfully met the final success criteria, the Year 5 report will document completion of the project. Once the final success criteria are met, the VA will submit a letter to the permitting resource agencies with the final monitoring report requesting final "signoff" that postconstruction monitoring can cease and the long-term management plan can begin to be implemented.

6.9 Contingencies and Remedial Actions

If annual performance criteria indicate the site will not meet final success criteria or the final success criteria are not met in Year 5, the VA will prepare an analysis of the cause(s) of failure and propose remedial actions to the USACE/RWQCB. The VA will provide funding for the planning, implementation, and monitoring of any remedial actions determined to be necessary by the USACE/RWQCB to meet the mitigation goals.

Section 7. Long-Term Management Plan

7.1 Purpose

This Long Term Management Plan (LTMP) was prepared in accordance with the USACE South Pacific Division guidelines (USACE 2015). The purpose of this LTMP is to ensure that the VA's Alameda Point wetland mitigation site is monitored and managed to attain the mitigation project's long-term habitat goals. The LTMP articulates the long-term management goals, identifies anticipated management activities to achieve these goals, and provides performance standard and monitoring methods to adaptively guide management activities. This LTMP also provides an annual cost estimate and identifies the funding source and funding mechanism for the monitoring and management activities.

The VA will begin implementation of the LTMP following completion of the postconstruction monitoring period (at least 5 years per Section 6 above) and receipt of USACE and RWQCB written approval that the final success criteria for that monitoring period were met. Construction of the wetland mitigation area is anticipated to occur in 2019 and the 5-year postconstruction monitoring period is anticipated to run from 2020-2024. Assuming this schedule holds, then LTMP implementation would begin in 2025.

7.2 Long-Term Habitat Management Goals

7.2.1 Boundary of Management Activities

Management activities required below will occur within the footprint of the wetland mitigation area shown in Figure 5. The wetland mitigation site is composed of a tidal marsh creation area and a tidal marsh enhancement area. The management goals for each of these areas are presented below.

7.2.2 Tidal Marsh Creation Area

- Maintain at least 7.25 acres of USACE/RWQCB jurisdictional tidal wetland and aquatic habitats in the tidal marsh creation area.
- Maintain unobstructed tidal flushing through the constructed tidal inlet at the tidal marsh creation area.
- Control erosion, if needed, to prevent piping through the seawall along the constructed seawall splash pad at the tidal marsh creation area.

7.2.3 Tidal Marsh Creation Area and Tidal Marsh Enhancement Area

 Manage vegetation to protect the viewshed for the federal endangered California least tern colony on Alameda Point.

- Control highly invasive tidal marsh plant species that could compromise the structure and function
 of tidal wetland and aquatic habitats.
- Allow natural changes to the distribution of vegetated tidal marsh and unvegetated tidal aquatic habitats. Sea level rise predictions in the San Francisco Estuary by the year 2100 vary from approximately 1.4 feet to 5.4 feet (NRC 2012). Sea level rise will likely result in temporal and spatial change to the distribution of wetland and aquatic habitats at the wetland mitigation site relative to the installed footprint of vegetated marsh and aquatic habitats. For example, sea level rise will likely drive the natural conversion of some vegetated marsh to marsh plain ponds and intertidal mudflat, as well as the landward transgression of vegetated marsh onto upland habitats in the transition zone. However, the site-specific temporal distribution of habitats in response to sea level rise is unknown given the wide range of sea level rise predictions, the limited knowledge of tidal marsh response to sea level rise, and potential future variability in sediment supply. Therefore, this mitigation plan allows for a natural, dynamic response of the spatial distribution of wetland and aquatic habitats to future sea level rise.

7.3 Land Manager and Responsibilities

The VA is the land manager and property owner is the VA. The VA will manage and monitor the wetland mitigation site to achieve the long-term habitat mitigation goals in accordance with this LTMP. The VA will fund all long-term management tasks identified herein. The VA will be responsible for providing an annual report to the USACE and RWQCB by December 31 of each year summarizing monitoring methods, results, and management activities. The annual reports will also provide an itemized account of budget expended.

7.4 Long-Term Site Protection Assurance

The VA's commitment to implement land use restrictions for the long-term maintenance, management, and monitoring of the endangered least terns in accordance with the 2013 Biological Opinion was documented in the Federal-to-Federal property transfer documents: Department of Defense Form 1354, with an attached Memorandum of Understanding. The geographic area governed by these land use restrictions includes the proposed acreage at the wetland mitigation area; therefore, the land use restrictions would apply to this area. Ongoing least tern management/predator management programs and management/maintenance of the wetland mitigation area will be funded by the VA operating budget for property maintenance and management.

7.5 Long-Term Management and Monitoring

7.5.1 Overview of Long-Term Management Needs

The wetland mitigation design in this MMP was crafted to create a self-sustainable tidal marsh that will attain the long-term habitat mitigation goals with minimal long-term management. Nonetheless, long-term management and monitoring of the following attributes is necessary to achieve the long-term management goals articulated above (see Section 7.2). Public access will be controlled by the VA as part of their existing

management of the least tern conservation area, which includes the wetland mitigation area. Therefore, this LTMP does not include public access control requirements. The below sections provide the management and monitoring requirements for each of these attributes:

- tidal inlet function
- seawall splash pad function
- vegetation management to protect California least tern colony
- invasive plant control and native tidal marsh vegetation assessment
- trash removal

7.5.2 Tidal Inlet Function

7.5.2.1 Purpose

Proper function of the tidal inlet through the seawall is required for attainment of the long-term habitat goals in the tidal marsh creation area. The tidal inlet includes the associated riprap lined, third-order slough channel mouth (slough channel mouth) located just inboard/landward of and connected to the inlet through the seawall (Figure 8). The primary concern is that deposited wrack (i.e., floating debris such as wood) could clog the tidal inlet or slough channel mouth. Secondarily, sediment erosion or deposition could compromise tidal flows in the slough channel mouth. Therefore, the land manager will monitor the tidal inlet to assess its function and perform management actions, if needed, to meet the below performance standard.

7.5.2.2 Performance Standard

The tidal inlet and associated slough channel mouth will transmit tidal flows sufficient to provide tidal flushing of the tidal marsh creation area to support intertidal mudflat, vegetated tidal salt marsh, and transition zone habitats. Water within the tidal marsh creation area should drain back to the bay by flowing out through the tidal inlet after each tide recedes.

7.5.2.3 Monitoring Methods

A qualified engineer and restoration ecologist will simultaneously conduct a reconnaissance once per year, during a low tide, to assess whether the tidal inlet and slough channel mouth are meeting the performance standard. The site visit will be conducted in spring (March-April) at the end of the rainy season. The assessment will consist of a qualitative, visual inspection. However, if necessary, quantitative topographic measurements (e.g., field measurement of the volume of wrack deposited, typical inlet or pilot channel mouth topographic cross sections) will be made to determine if management actions are recommended to meet the performance criteria.

7.5.2.4 Management Actions

The primary anticipated management action is the periodic removal of wrack that may be deposited by tidal flows and/or wind waves in the tidal inlet/pilot channel mouth. The maintenance access road will be utilized for small tracked equipment, pick-ups, or pedestrian traffic to access the tidal inlet and remove wrack. Wrack removal will not require regulatory agency approval.

Secondarily, tidal flows and/or wind waves may alter the topography of the tidal slough channel mouth through scour or sediment deposition. If deemed necessary by the land manager's qualified engineer and ecologist and with specific approval from the USACE and RWQCB, earthwork and planting of vegetation would be performed to restore adequate tidal flushing/channel stability at the slough channel mouth.

This work should be performed as soon as possible after substantial wrack or erosion is observed and may therefore, occur during the least tern breeding season with the implementation of conservation measures summarized in the project's Biological Assessment (H. T. Harvey & Associates 2017b).

7.5.3 Seawall Splash Pad Function

7.5.3.1 Purpose

A seawall splash pad will be constructed on the landward side of the seawall along the south and west sides of the tidal marsh project area (Figure 5). The splash pad is designed to reduce the risk of soil erosion adjacent to the seawall that could result from wave or tidal overtopping. The installation of this splash pad will include construction of a riprap layer and an aggregate filter layer. The introduction of a below-grade filter layer will help to reduce the chance of soil washing out through the upper portion of the seawall. The splash pad is also designed to serve as a maintenance access road for inspection and maintenance activities. A choke-stone will be applied to the surface of the riprap to allow vehicles and pedestrians to comfortably drive or walk on the surface. The land manager will monitor and maintain the splash pad to ensure it remains traversable and functions as designed.

7.5.3.2 Performance Standard

The constructed splash pad will function to help maintain the integrity of the seawall by reducing soil erosion potential adjacent to the seawall, and reduce the flow of water through the seawall (making the tidal inlet the primary inflow/outflow location).

7.5.3.3 Monitoring Methods

A qualified engineer will conduct a reconnaissance site visit once per year, during a low tide, to assess whether the constructed splash pad is meeting the performance standard. One site visit will be conducted in spring (March-April) at the end of the rainy season. The assessment will consist of a qualitative, visual inspection. However, if necessary, quantitative topographic measurements will be made to determine if management actions are recommended to meet the performance criteria.

7.5.3.4 Management Actions

The anticipated management action would entail minor earthwork to repair patches of soil erosion immediately landward of the splash pad and/or to add gravel to the splash pad surface to make the surface more traversable. Such minor erosion repairs would not impact the jurisdictional portion of the created tidal marsh and would therefore not require approval from the USACE and RWQCB.

If necessary, this work should be performed as soon as possible after substantial erosion is observed and may therefore, occur during the least tern breeding season with the implementation of conservation measures summarized in the project's Biological Assessment (H. T. Harvey & Associates 2017b).

7.5.4 Vegetation Management to Protect California Least Tern Colony

7.5.4.1 Purpose

Vegetation will be managed to protect the view shed of the California least tern colony. The least tern requires a line of sight from the main colony location to the south (across the wetland mitigation site) for predator avoidance.

7.5.4.2 Performance Standard

Maintain the least tern view shed by ensuring that vegetation height within the wetland mitigation area does not exceed 2 feet above the existing ground surface on the existing tarmac adjacent the northern perimeter of the transition zone. The existing tarmac surface elevation is 10 feet NAVD 88. Therefore, the canopy height of all vegetation within the wetland mitigation area will not exceed 12 feet NAVD 88.

7.5.4.3 Monitoring Methods

A qualified restoration ecologist will quantitatively monitor vegetation height in both the transition zone of the created tidal marsh and in the tidal marsh enhancement areas for comparison to the performance standard. Monitoring will be conducted during a low tide. Vegetation height will be monitored as follows, using methods identical to those specified in the above postconstruction monitoring plan.

A restoration ecologist will evaluate whether any vegetation in the wetland mitigation area exceeds 12 feet NAVD 88. Vegetation height will be assessed by walking along the northern edge of the mitigation area and visually inspecting the mitigation area for any vegetation that appears to extend above 12 feet NAVD 88. The height of vegetation identified in this way will measured with a meter stick and the approximate elevation of the ground surface will be determined based on the project's as-built topographic survey (in the tidal marsh creation areas) or based on the existing condition 1-foot elevation contours (in the tidal marsh enhancement area; Figure 6). All areas where vegetation exceeds 12 feet NAVD 88 in height will be mapped with a GPS unit and the species of vegetation recorded to guide removal.

7.5.4.4 Management Actions

The land manager will control vegetation, as needed, to ensure that vegetation meets the above performance standard. If necessary, this work should be performed as soon as possible after data collection and may, therefore, occur during the least tern breeding season with the implementation of conservation measures summarized in the project's Biological Assessment (H. T. Harvey & Associates 2017b).

7.5.5 Invasive Plant Control and General Native Tidal Marsh Vegetation Assessment

7.5.5.1 Purpose

Invasive plants will be controlled to protect tidal habitat functions and native plant species diversity within the wetland mitigation site.

7.5.5.2 Performance Standard

The average percent cover of invasive plant species will be less than 5% throughout the vegetated portions of the tidal marsh creation area and less than 5% throughout the tidal marsh enhancement area. Invasive plant species are defined as plant species with an ecosystem impact rating of "high" by the Cal-IPC and the following nonnative plants with lower Cal-IPC ecosystem impact ratings but which are recognized as highly invasive in tidal marsh and transition zone habitats:

- Invasive sea lavenders
- Russian thistle
- Stinkwort
- Iceplant
- Slender leafed iceplant

7.5.5.3 Monitoring Methods

A qualified restoration ecologist will conduct one annual survey during a low tide in the late spring/early summer (May-June) to quantitatively monitor the distribution of invasive plants. The ecologist will map invasive plant locations by species. The ecologist will visually estimate invasive vegetation percent cover (all invasive species combined) separately for the tidal marsh creation and enhancement areas, for comparison to the performance standard. The ecologist will also record qualitative observations of the cover and composition of the native tidal marsh and transition zone plant communities and will take photographs from the photodocumentation points established during the postconstruction monitoring period.

7.5.5.4 Management Actions

The land manager will control invasive plants within the wetland mitigation site using manual and/or herbicide methods to meet the performance standard. The use of manual versus herbicide methods will be based upon

the restoration ecologist's recommendations. If herbicide is recommended by the ecologist, then, the VA will obtain a herbicide application recommendation from a State certified pest control advisor to ensure protection of wetland and aquatic habitats while achieving successful invasive plant control. If necessary, this work should be performed as soon as possible after data collection and may therefore, occur during the least tern breeding season with the implementation of conservation measures summarized in the project's Biological Assessment (H. T. Harvey & Associates 2017b).

7.5.6 Public Access Control and Trash Removal

7.5.6.1 Purpose

The VA will control sources of trespass and trash and will remove all trash in order to maintain high-quality tidal marsh habitat within the wetland mitigation site. The VA currently prevents public access to the wetland mitigation site in accordance with its existing USFWS required practices for the management of the least tern colony. The VA will continue these existing public access control practices.

7.5.6.2 Performance Standard

All trash observed during site monitoring will be removed from the site. Public access into the wetland mitigation site will be prohibited.

7.5.6.3 Monitoring Methods

The land manager will conduct quarterly site visits (once every 3 months) and will walk the entire perimeter of both the tidal marsh creation and enhancement areas and use binoculars to survey the site for trash and signs of public access.

7.5.6.4 Management Activities

The land manager will removal all trash observed during each site visit. If signs of public access are evident, the land manager will develop and implement a plan to better control public access for approval by the USACE and RWQCB.

7.6 Adaptive Management

If monitoring results indicate that performance standards are not met, the VA will undertake management actions, as described above. This LTMP is based upon the anticipated future conditions of the wetland mitigation site given present knowledge and the mitigation design presented above. However, adaptive management decades in the future may need to accommodate conditions that could not be foreseen at this time. Therefore, this LTMP is a "living document" and the monitoring methods, performance standards, and management actions can be modified by the VA, if needed, with written approval from the USACE and RWQCB.

7.7 Monitoring and Management Schedule

Monitoring and management actions described above will be carried out according to the schedule in Table 15.

Table 15. Long-Term Monitoring and Management Schedule

	Spring	Summer	Fall	Winter
Monitoring				
Vegetation monitoring to protect least tern colony and control invasive plants	Χ	Χ		
Tidal inlet and slash pad monitoring	Χ			
trash monitoring and public access	Χ			
Maintenance				
Vegetation management to protect least tern colony, control of invasive plants and trash removal	Χ	Χ		
Inlet and slash pad maintenance	Χ			
Public access control	Χ			

7.8 Annual Reporting

The VA will prepare annual reports summarizing the monitoring methods, results, management actions undertaken, and requests USACE/RWQCB approval for certain management actions as specified above. The report will include a concise executive summary. Annual reports will be submitted to the USACE and RWQCB by December 31 of each year.

7.9 Transfer, Replacement, Amendments, and Notices

7.9.1 Transfer

Any subsequent transfer of responsibilities under this LTMP to a different land manager shall be requested by the land manager in writing to the USACE and RWQCB, shall require written approval by those regulatory agencies, and shall be incorporated into this LTMP by amendment. Any subsequent property owner assumes land manager responsibilities described in this LTMP, unless otherwise amended in writing by the USACE and RWQCB.

7.9.2 Replacement

If the land manager fails to implement the tasks described in this LTMP and is notified of such failure in writing by either the USACE or RWQCB, the land manager shall have 90 days to remedy such failure. If the land manager cannot remedy the failure within 90 days, the land manager may request a meeting with the regulatory agencies to resolve the failure within 90 days from the regulatory agency notice. Based on the outcome of the meeting, or if no meeting is requested, the USACE and RWQCB may designate a replacement land manager in

writing by amendment of this LTMP. The replacement land manager may enter onto the property in order to fulfill the purposes of this LTMP.

7.9.3 Amendments

The land manager, property owner, USACE, and RWQCB may meet and confer from time to time, upon the request of any one of them, to revise the LTMP to better meet management objectives and preserve the habitat and conservation values of the wetland mitigation site. Any proposed changes to the LTMP will be discussed with the regulatory agencies and the land manager. Any proposed changes will be crafted with input from all parties. Amendments to the LTMP shall be approved in writing by the USACE and RWQCB, shall be required management components and shall be implemented by the land manager.

If the USFWS determines, in writing, that continued implementation of the LTMP would jeopardize the continued existence of a federally listed species, any written amendment to this LTMP determined by the USFWS as necessary to avoid jeopardy, shall be a required management component and shall be implemented by the land manager.

7.9.4 Notices

Any notices regarding this LTMP shall be directed as follows:

Land Manager/Property Owner:

Larry Janes

Department of Veterans Affairs, Sierra Pacific Network (VISN 21)

Capital Asset Manager

201 Walnut Avenue

Mare Island, CA 94592

Tel.: 707.562.8213

Email: Larry.Janes@va.gov

Regulatory Agencies, Signatory Agencies:

U.S. Army Corps of Engineers

San Francisco District 1455 Market Street

San Francisco, CA 95814

Attn: Chief, Regulatory Branch

Telephone: 415.503.6804

Fax: 408.503.6690

U.S. Fish and Wildlife Service

Sacramento Fish & Wildlife Office

Federal Building

2800 Cottage Way, Room W-2605

Sacramento, CA 95825-1846

Attn: Field Supervisor

Telephone: (916) 414-6600

Fax: (916) 414-6713

San Francisco Bay Regional Water

Quality Control Board

1515 Clay Street, Suite 1400

Oakland, CA 94612

Attn: Water Resource Control

Engineer

Telephone: (510) 622-2300

Fax: (510) 622-2460

7.10 Funding and Task Prioritization

7.10.1 Funding

The VA shall provide annual funding sufficient to undertake this LTMP's monitoring and management activities. The VA's annual funding is assured through the following mechanism...(VA/HDR) to provide text here.

Table 16 summarizes the anticipated annual costs of long-term management for the property in accordance with this LTMP. The total annual funding anticipated is approximately \$31,300.

Table 16. LTMP Annual Cost Estimate

Long Term Management and Monitoring Activities	Description	Annual Cost *
Monitoring Activities		
Qualitative Monitoring	Includes annual tidal inlet monitoring, seawall splash pad monitoring, trash removal monitoring, preinvasive plant control nesting bird surveys, biannual vegetation and invasive plant monitoring, and reporting for all aforementioned tasks. Level of effort is assumed to be approximately 60 hours of a professional level engineer, wildlife biologist, and restoration ecologist's time (combined) annually.	\$16,200
Management Activities		
Tidal Inlet Management	Annual removal of wrack or debris that may be deposited by tidal flows and/or wind waves in the tidal inlet or pilot channel mouth to restore adequate tidal flushing/channel stability at the slough channel mouth. Level of effort is assumed to be approximately 4 laborers for 1 day annually.	\$2,600
Seawall Splash Pad Function Management	Annual minor earthwork to repair patches of soil erosion immediately landward of the splash pad and/or to add gravel/base rock to the splash pad structure for access road maintenance. Level of effort is assumed to be approximately 4 laborers for 1 day annually plus cost of repair materials.	\$3,500
Vegetation Management to Protect Least Tern Colony, Control Invasive Plants, and Remove Trash	Biannual control of vegetation to meet vegetation height requirements for the least tern, control invasive plants, and annual trash removal. Level of effort is assumed to be approximately 2 laborers for 4 days twice a year.	\$9,800
Total		\$32,200

^{*}Annual costs assume the following:

^{1.} Costs are based on 2017 dollars

^{2.} Annual costs include routine annual expenses. Over time, episodes and special repairs may be required, and at that point, additional special assessment may be needed

^{3.} Costs includes labor, soft costs, and contingency.

7.10.2 Task Prioritization

Due to unforeseen circumstances, prioritization of tasks, including tasks resulting from new requirements, may be necessary if insufficient funding is available to accomplish all tasks. The land manager and the regulatory agencies shall discuss task priorities and funding availability to determine which tasks will be implemented. In general, tasks are prioritized in this order: 1) required by a state federal agency; 2) tasks necessary to maintain habitat quality; and 3) tasks that monitor resources, particularly if past monitoring has not shown downward trends. Final determination of task priorities in any given year of insufficient funding will be determined in consultation with the regulatory agencies and as authorized by the regulatory agencies in writing.

Section 8. Statement of Financial Commitment

The VA is financially responsible for the successful mitigation for impacts to USACE/RWQCB jurisdictional wetlands incurred during construction of the Alameda Point VA Project. This financial responsibility includes the 5 years of postconstruction monitoring, any agency-approved remedial actions to meet the ecological performance standards during the postconstruction monitoring period, and the long-term management described herein.

Section 9. References

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Appendix A. HDR Wetland Mitigation Design Technical Memorandum

Appendix B. Investigation to Determine Ecological Suitability of On-Site Soils

Memorandum

May 3, 2017

To: Dawn Edwards, M.S.

Environmental Project Manager

HDR Engineering, Inc.

From: Max Busnardo, M.S.

Principal, Restoration Ecologist

Cc: Daniel Jabbour, PE (HDR Engineering); Justin Hanzel-Durbin, EIT (Senior Engineer,

TRC Solutions); Joe Howard M.L.A. (H.T. Harvey & Associates); Doug Roaldson (U.S.

Department of Veterans Affairs)

Subject: Alameda Point Veterans Affairs Project - Onsite Wetland Mitigation -

Investigation to Determine Ecological Suitability of Onsite Soils

Introduction

The U.S. Department of Veteran's Affairs (VA) Multi-specialty Outpatient Clinic and Columbarium project (project) will result in impacts to 7.2 acres of jurisdictional wetlands on the former Naval Air Base at Alameda Point over the next several decades. H. T. Harvey & Associates, in collaboration with HDR, developed a preliminary/conceptual onsite wetland mitigation package, which includes the creation of 7.2 acres of new tidal salt marsh (wetland mitigation site) and the enhancement of 13.2 acres of existing salt marsh/salina (wetland enhancement site) (H. T. Harvey & Associates 2016a). The VA then held an interagency meeting in fall 2016 to obtain input on the mitigation package. Per agency input at the meeting, the target habitat at the wetland mitigation site will be primarily tidal salt marsh with a few, small salinas within the marsh plain. Construction of the 7.2 acre wetland mitigation site will entail excavation to design grades suitable for establishment of tidal salt marsh hydrology. The project will require a federal Clean Water Act Section 401 permit from the San Francisco Bay Regional Water Quality Control Board (RWQCB). To protect aquatic life, the RWQCB typically requires that surface soils in constructed wetlands meet the ecological contaminant screening criteria for "wetland surface material" in Table 4 of the Beneficial Reuse of Dredged Materials: Sediment Screening and Testing Guidelines (RWQCB 2000). Moreover, surface soils at the wetland mitigation site need to be horticulturally suitable for establishment of tidal salt marsh vegetation to meet the mitigation design goals.

In accordance with H. T. Harvey & Associates scope of work, we have completed a soils investigation to determine the ecological suitability of soils at the wetland mitigation site. This Technical Memorandum provides H. T. Harvey & Associates methods and results to both satisfy the RWQCB's contaminant screening guidelines and assess the horticultural suitability of surface soils to be daylighted at the design grade within the wetland mitigation site. Below we also provide design recommendations to help inform the HDR team's mitigation design in the project's forthcoming Mitigation and Monitoring Plan (MMP) and construction documentation package.

Methods for Soil Sampling and Analysis

Overview

We identified a 10.9 acre wetland mitigation study area (study area) on Alameda Point wherein the 7.2 acre mitigation wetland will be constructed (Figure 1). The study area is intentionally larger than the mitigation acreage requirement to allow flexibility during the forthcoming design process to determine the precise location of the mitigation wetland. We developed this soil sampling and analysis plan to characterize the presence (or absence), concentration, and distribution of contaminants of concern and to determine the horticultural suitability of soils both above (the overburden) and at/below the mitigation wetland design grade within the study area. Our overburden sampling provides data to determine the extent of suitable above-grade soils that may be used to replace unsuitable soils at and below the design grade, if needed.

Sampling Intensity and Sample Locations

Our sample plan called for collection of 24 samples: 12 samples each comprised of 2 composited subsamples to characterize the overburden, and 12 samples each comprised of 2 composited subsamples to characterize the wetland surface material collected (48 total subsamples). Samples were collected at the 12 sampling locations shown in Figure 1. Although the State Department of Toxic Substance Control (DTSC) has no regulatory involvement in this project, our sampling intensity is consistent with DTSC's guidance. Our sampling intensity exceeds DTSC's minimum Borrow Area sample guidelines, which specify a minimum of 8 sampling locations with 4 subsamples per location for borrow areas larger than 10 acres (DTSC 2001), and is appropriate based on the homogenous nature of soils within the study area, which are composed of uniform, sandy dredge material excavated from the San Francisco Bay and laid down decades ago to form the Alameda Point Naval Air Station. Our prior soil sampling for horticultural properties at the potential mitigation site indicated relatively homogeneous, unstratified sandy soils within and adjacent to the current study area (H. T. Harvey & Associates 2016b). Our sampling results confirmed that soils are consistently sandy and unstratified across the study area.

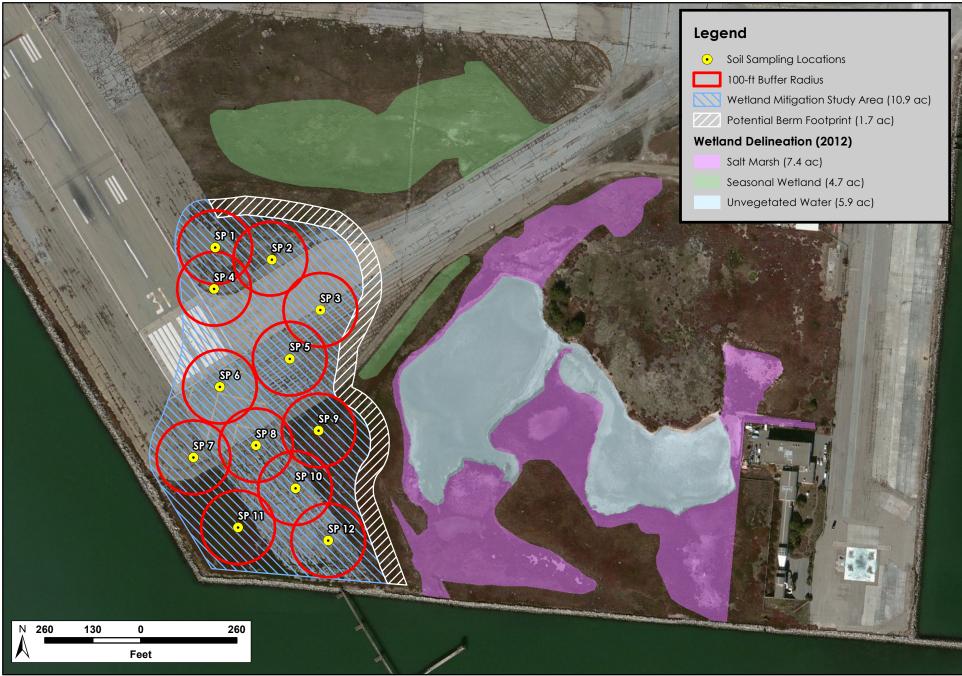




Figure 1. Soil Sampling Locations

Alameda Point Veterans Affairs Project Onsite Wetland MItigation - Soils Investigation (3898-03) May 2017 We determined sampling depths based on the basis of design for the mitigation wetland grading/excavation, to ensure that samples characterized the wetland surface material to be daylighted as well as the material above the wetland surface (referred to herein as the "overburden") that could be potentially salvaged for reuse at the design grade, if needed, to replace unsuitable material. Figure 2 provides an example of the sampling design as a function of depth in the soil profile. The mitigation wetland design grade will consist of elevations between 6.4 and 3.2 ft North American Vertical Datum 1988 (NAVD88). This is because the large majority of the restored tidal marsh plain habitat will be situated at elevations from Mean Higher High Water (MHHW; 6.4 ft NAVD88) to Mean High Water (MHW; 5.8 ft NAVD88). A few small salinas on the marsh plain will be situated approximately 1.5 ft (on average) below MHHW (4.9 ft NAVD88). The design grade of most tidal channels cut into the marsh plain will be situated at or above mean sea level (3.2 ft NAVD88). The 1.5 ft depth defining wetland surface material is a conservative estimate because the majority of tidal marsh plant roots and invertebrates occur in the upper 6 inches of sediment in tidal marshes. For this reason, sampling for contaminants to characterize wetland surface material to a depth of 1.5 ft has been approved by RWQCB on several wetland mitigation sites (e.g., the Santa Clara Valley Transportation Authority Tasman Corridor Wetland Mitigation, City of Santa Clara Ulistac Natural Area Wetland Mitigation, and CALTRANS Foster City Mitigation Wetland). Hence, the upper 1.5 ft of soil in the wetland must meet the RWQCB's environmental screening criteria for wetland surface material. Therefore, the vertical range of wetland design grade soil sampling was from 6.4 ft NAVD88 (MHHW) to 1.7 ft NAVD88 (1.5 ft below the depth of most tidal channels, the lowest elevation wetland design feature). The overburden that we sampled constituted the vertical range of soil above MHHW.

Each of the twelve soil sampling pits represents an area of approximately 0.7 to 0.9 acre (Figure 1). Within each pit, four subsamples, distributed vertically, were collected for contaminant screening (Figure 2). The two upper subsamples were collected within the vertical range of the overburden. The two lower samples were collected within the vertical range of potential wetland surface material. The four subsamples from each pit were stored in individual containers and later composited by the laboratory into a single overburden composite sample and a single wetland surface material composite sample for analysis as shown in Figure 2. In this way, a total of 12 overburden samples and 12 wetland surface material samples were analyzed for contaminants. Table 1 provides the depths of samples relative to the surface elevation for each sampling pit. Prior to sampling, we recorded sampling locations with a sub-meter GPS and contracted Subtronic Corporation to provide onsite utility detection within the excavation footprints of those locations.

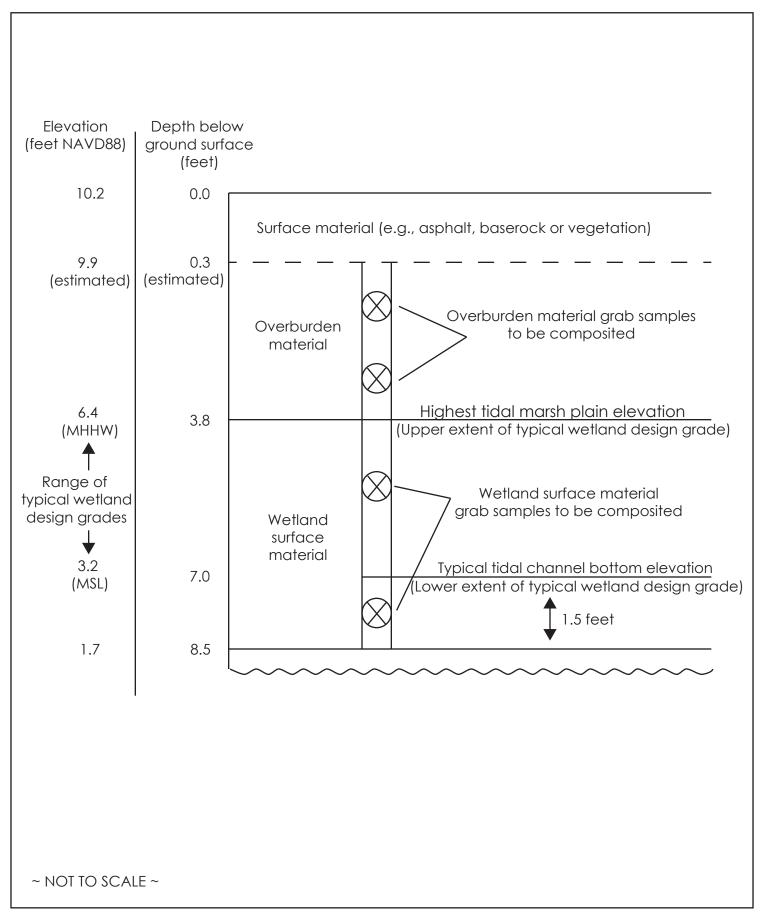
Table 1. Surface Elevations and Sampling Depths by Location

Soil Sampling Location	Ground Surface Elevation 1 (Feet NAVD 88)	Overburden Sampling Range ² (Feet below ground surface)	Wetland Design Elevation Sampling Range ³ (Feet below ground surface)
1	10.2	0.3 - 3.8	3.8 - 8.5
2	9.8	0.3 - 3.4	3.4 - 8.1
3	10.6	0.3 - 4.2	4.2 - 8.9
4	10.6	0.3 - 4.2	4.2 - 8.9
5	10.1	0.3 - 3.7	3.7 - 8.4
6	11.2	0.3 - 4.8	4.8 - 9.5
7	9.0	0.3 - 2.6	2.6 - 7.3
8	9.9	0.3 - 3.5	3.5 – 8.2
9	9.7	0.3 - 3.3	3.3 – 8.0
10	10.3	0.3 - 3.9	3.9 - 8.6
11	9.2	0.3 - 2.8	2.8 - 7.5
12	9.2	0.3 - 2.8	2.8 - 7.5

^{1.} Ground surface elevations derived from Northern San Francisco Bay Area LiDAR (NOAA, 2020).

^{2.} The overburden sampling range is defined as all sediment above 6.4 ft elevation (NAVD 88) minus any unsuitable surface material.

^{3.} The Wetland design elevation sampling range is defined as 3.4 – 6.4 ft elevation (NAVD 88).





Soil Contaminant Screening

We directed BC Laboratories, Inc. (Bakersfield, CA) to test soil samples for the contaminants listed in the Recommended Sediment Chemistry Screening Guidelines for Beneficial Reuse of Dredged Material for "Wetland Surface Material" as described in Table 4 of RWQCB 2000. In addition, based on the history of site use as a naval air station, we elected to test for individual Petroleum Hydrocarbons. Therefore, contaminants that were tested include Organochlorine Pesticides (EPA-8081A), polychlorinated biphenyls (PCBs) (EPA 8082), polycyclic aromatic hydrocarbons (PAHs) (EPA 8270C-SIM), Fuels (EPA-8015B and EPA-8015B/FFP); the summation of which we report as Total Recoverable Petroleum Hydrocarbons (TRPH), Mercury (EPA-7471A), and other metals (EPA-6020). The complete list of contaminant tests and constituents relative to the RWQCB screening criteria is provided in Attachment A. The complete lab report is provided in Attachment B.

Soil Horticultural Analysis

We also collected 48 sub-samples for horticultural analysis. These samples were collected from the same geographic and vertical locations as for contaminant screening. Following assessment of contaminant sampling results, these subsamples were composited into 6 samples that best characterize the extent of material that may potentially comprise the *wetland surface material*. We submitted the 6 horticultural composite samples to Waypoint Analytical (Anaheim, CA) for analysis to characterize their horticultural properties. Horticultural analyses include USDA texture (ASTM D422 method). Various wet chemical methods (SSSA Methods of Soil Analysis Chemical Methods – or equivalent) will also be utilized to quantify pertinent horticultural parameters such as salinity, pH, and Boron concentration, as well as macro- and micro-nutrient concentrations. We have utilized these results to determine the horticultural suitability of soils and to make our recommendations.

Collection of Soil Samples

H.T. Harvey & Associates collected soil samples on March 28-29, 2017. Soil sampling for contaminant analysis followed the U.S. EPA Environmental Response Team Standard Operating Procedures - Soil Sampling (USEPA 2000) for sampling via trench excavation. At each soil sampling location, a soil sample pit was excavated using an excavator with a 3 foot digging bucket to remove any overlying debris and/or vegetation and expose the upper limit of the overburden sampling range. The excavator bucket was then withdrawn from the pit and excess sediment from the bucket was removed with a brush. The operator then excavated downward through the soil profile and a soil sample was collected directly from the first bucket load to be drawn from each progressively deeper sampling depth. Exposed material was scraped from each bucket volume to be sampled in order to obtain a sample from the central region of the bucket volume and avoid contamination via contact with the bucket itself. H. T. Harvey & Associates restoration ecologist, Matt Pollock, collected all soil samples. He wore a new, clean pair of nitrile gloves and used a new, sterile sampling scoop for each individual subsample collected. Soil samples were packed into 1-quart glass sampling containers (for contaminant screening), as well as a 1-gallon Ziploc bag (for horticultural analysis). New glass sampling containers were provided by BC Laboratories Inc. for this purpose. Each sampling container and bag was sealed and labelled with a unique sample ID, time, and date. Filled glass containers were placed in a cooler containing ice. The incremental depth of excavation was measured by extending a steel measuring tape into the pit and measuring against the ground surface. Sample pits were backfilled

immediately after sample collection. Where pits occurred on tarmac, broken asphalt and gravel, removed from the surface of the pit, was placed back on top of the pit and compacted to restore a firm, flat surface.

Storage and Delivery Protocols

Contaminant Screening. At the end of each of the two sampling days, sample coolers were transported to H. T. Harvey & Associate's office in Los Gatos, CA, repacked with fresh ice, and stored in a secure area. Chain-of-custody (CoC) documentation was completed at the end of each day. A representative of BC Laboratories Inc. collected the samples from our office on the morning of March 30, 2017. This timeline ensured that samples were processed within the required holding time (7 days).

Horticultural Analysis. Contaminant screening results were used to inform the soil horticultural analysis. We composited six samples from the 48 subsamples to characterize soil volumes from areas that met the RWQCB's contaminant screening criteria. We determined that 6 samples were sufficient to adequately characterize horticultural suitability given the homogenous nature of the soils encountered during excavation at the wetland design grade. For each composite, equal volumes of applicable subsamples were mixed together and sent to Waypoint Analytical (Anaheim, CA). Samples for horticultural analysis were composited from the sample locations in Figure 1 as follows:

- Northern Overburden overburden samples from locations 1, 2, 3 and 4.
- Northern Wetland wetland design grade samples from locations 1, 2, 3 and 4.
- Central Overburden overburden samples from locations 5, 6, 7, and 8.
- Central Wetland wetland design grade samples from locations 5, 6, 7 and 8.
- Southern Overburden overburden samples from location 10, 11 and 12.
- Southern Wetland wetland design grade samples from locations 9 and 12.

Results

Contaminant Screening

A summary table with contaminant screening results is provided in Attachment A. Attachment B provides the complete laboratory report. The contaminant screening results indicate that all soil volumes tested within the study area are suitable for use as wetland surface soils within 1.5 feet of, or at the wetland design grade, with the following exception:

Cadmium was detected in concentrations higher than the RWQCB 2000 screening criterion of 0.33 mg/kg in 3 of the 24 composite samples. Cadmium concentrations were 0.38 mg/kg in the overburden soil at sample location 9 and 0.45 and 0.41 mg/kg in the wetland design-grade soil at sample locations 10 and 11, respectively.

The Reporting Limits (RL) were lower than the screening criteria for all contaminants, with the exception of chlordanes (sum), hexachlorocyclohexane (sum), and hexachlorobenzene, however, the Method Detection Limit (MDL) for these constituents was lower than the screening criteria. These contaminants were "not detected" (ND) at the MDL. Therefore, the concentrations for chlordanes (sum), hexachlorocyclohexane (sum), and hexachlorobenzene are below the screening criteria in all samples based on the MDL.

Horticultural Analysis

Soil horticultural analysis results are provided in Attachment C. All site soils are acceptable for use as wetland soils with the additional of soil amendments. Our horticultural analysis demonstrates that site soils are relatively homogeneous. All six composite samples were classified as sand with pH ranging between 7.1 and 8.0, a range suitable for tidal marsh plant growth. Boron, which can be toxic to plants when elevated, was below 0.20 parts per million (ppm) and below the level toxic to plants. Macro and micronutrient levels were sufficient for tidal marsh plant growth.

Soil texture was a homogenous sand (medium to very fine) across all samples. The amount of organic matter present was low in all samples, ranging from 0.6 to 0.4% organic matter (dry weight basis). By contrast, tidal marshes typically have organic matter ranging from 5-30% dry weight and typically occur in fine textured clay to silt sediments. A study of 6 naturally occurring pickleweed (*Spartina* spp.) marshes in southern California found organic matter ranging from 3-45% (Talley and Levin 1999). Low organic matter and coarse soil texture can lead to poor productivity in tidal marshes.

Wetland Mitigation Grading/Soil Preparation Recommendations

We provide the following grading and soil preparation recommendations for incorporation into the forthcoming Habitat Mitigation and Monitoring Plan and construction documentation:

- Surficial Materials. The grading plan should include the removal of surface hardscape (e.g., asphalt, underlying gravels) and the vegetation within the wetland mitigation and berm footprint.
- Removal of Soil Exceeding the RWQCB Screening Criteria and Replacement with Soils Meeting the Screening Criteria. Soils containing elevated concentrations of cadmium should be removed from within the wetland and berm design footprint. These soils should be replaced up to the design grade with overburden soils that meet the screening criteria. The exact spatial extent of the soil removal should be determined during the forthcoming wetland/berm design phase. Specifically:
 - o Soil above 6.4 ft NAVD88 within in the area represented by sample location 9 should be removed from the project site.
 - Soil from 6.4 ft NAVD88 to 1.5 ft below the final wetland design grade in the area represented by sample locations 10 and 11 should be removed from the project site.
 - Areas with elevated cadmium should be dewatered prior to soil removal to prevent contamination of adjacent, suitable areas

- o Grading of the wetland and berm areas should be done only after removal of contaminated soil from the project site.
- o Wetland surface soils removed from sample locations 10 and 11 should be replaced up to the design grade with soils meeting the screening criteria from the remainder of the site.
- Tidal Marsh Design and Constructability. Tidal marshes and slough channels are typically composed of fine textured sediment (e.g., clays). Cohesions between clay particles allows for formation of steeply walled slough channels in naturally formed marshes. By contrast, sands typically have a relatively low angle of repose under saturated conditions. Therefore, given the sandy soil material in the mitigation wetland, the physical characteristics of site soils should be carefully considered in the design of tidal slough channels. Moreover, we found groundwater relatively close to the marsh plain design grade, which would likely create an unstable soil surface for heavy equipment operation. This should be taken into consideration in crafting the constructability aspects of the grading and dewatering plan.
- Soil Amendments. If feasible, an organic amendment should be thoroughly incorporated into the upper 6 inches of the constructed tidal marsh plain to increase organic matter content to between 5-30% dry weight. Sediment sources with levels of organic matter below this range are likely to lead to lower cover and productivity of marsh plants. The feasibility, type and application rate of organic amendment will be determined during the forthcoming design phase.

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- [RWQCB] Regional Water Quality Control Board. 2000. Draft Staff Report. Beneficial Reuse of Dredged Materials: Sediment Screening and Testing Guidelines. Prepared by: San Francisco Bay Regional Water Quality Control Board staff. May 25, 2000.
- Talley, T.S. and L.A. Levin. 1999. Macrofaunal succession and community structure in *Salicornia* marshes of southern California. *Estuarine, Coastal Shelf Science*. 49:713-731
- [USEPA] U.S. Environmental Protection Agency Environmental Response Team. 2000. SOP #2012; Revision 0.0; 2/18/2000. Standard Operating Procedures Soil Sampling.

Attachment A.

Summary Table of Contaminant Screening Results

Summary Table of Contaminant Screening Results

Seement Methods									Soil Sample Locations (See Figure 1). O=Overburden, W=Wetland design grade																								
Property state																																	
Property state																																	
Segretary segret		RWQCB Wetland			Method																												
Series (1) (1) (2) (2) (3) (3) (3) (3) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4																																	
Secretary 13 works 16 works 16 works 17 works 18		Screening Criteria	a Units	Limit (RL)	Limit (MDL)	Method	Criteria?	Criteria?	1-0	1-W	2-0	2-W	3-O	3-W	4-0	4-W	5-O	5-W	6-0	6-W	7-0	7-W	8-O	8-W	9-0	9-W	10-O	10-W	11-0	11-W	12-0	12-W	Comments
Series 1. 19		45.0		0.50	2.22	554 (000			1.0	1.0	4.5	1.0	1.0	4.0	1.0	4.7		4.0		0.4	1.0		1.0			1.0			4.5	0.1	1.0		111 1 0 11 1
See the section of th																																	
Segretary 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1. 1.																																	
Segregation of the segregation o	_									5											20	5											
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Section 1.1 1.2 1.3 1.3 1.3 1.4 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5 1.5											ND											ND			0.085			0.081					
Series (also also also also also also also also	Nickel										25		24		38	26			24	32		23			35					39			
The content of the co	Selenium	0.64		0.58	0.13	EPA-6020	Yes	Yes	ND	ND	0.13	0.21	0.24	0.19	ND	0.39	0.32	ND	ND	ND	0.12	0.12	ND	ND	0.12	0.17	ND	ND	ND	ND	ND	ND	Meets Criteria
Section	Silver	0.58	mg/kg	0.29	0.059	EPA-6020	Yes	Yes	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	0.11	ND	ND	0.15	0.12	0.13	ND	ND	Meets Criteria
Design Control Contr	Zinc	158	mg/kg	1.5	0.58	EPA-6020	Yes	Yes	15	16	16	17	17	19	27	16	16	21	15	26	23	15	19	18	41	18	20	37	19	37	19	20	Meets Criteria
Procession Pro	Organochlorine Pesticides/PCBs																																
Public P	1	7.0	ug/kg	1.74	0.284	EPA-8081A	Yes	Yes	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Meets Criteria
Month confisce properties (month confisce prop	Chlordanes, sum¹	2.3	ug/kg	58	1.7	EPA-8081A	No	Yes	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Meets Criteria
Method contribute	Dieldrin	0.72	ug/kg	0.58	0.081	EPA-8081A	Yes	Yes	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Meets Criteria
California Cal	Hexachlorocyclohexane, sum ¹	0.78	ug/kg	2.32	0.263	EPA-8081A	No	Yes	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Meets Criteria
Properties Pro	Hexachlorobenzene	0.485	ug/kg	2.3	0.33	EPA-8081A	No	Yes	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Meets Criteria
Max-stroring Max-	PCBs, sum	22.7	ug/kg	12	5.8	EPA-8082	Yes	Yes	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Meets Criteria
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2.86Htylphonarthrene NA ug/kg 58 23 EPA-8270C-SM NA NA NA AN NA N	, ,																																
2-Methyphenanthrene NA ug/kg 58 2.3 EPA-827C-SIM NA NA NA NO	- '																																
Acchaephthylore 2.0 4.0 4.0 4.0 4.0 4.0 4.0 4.0		NA			2.3	EPA-8270C-SIM	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	See note B
Accomplishingfore 88.0	3-Methylphenanthrene	NA	ug/kg	5.8	2.3	EPA-8270C-SIM	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	See note B
Anthracene 88 0 ug/kg 35 12 EPA8270C-SM Ves Ves ND	Acenaphthene	26.0	ug/kg	3.5	1.2	EPA-8270C-SIM	Yes	Yes	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Meets Criteria
Benz(a)anthracene 412 ug/kg 3.5 1.5 EPA-8270C-SIM Yes Yes 1.8 ND 1.9 2.3 2.4 2 4.9 ND 5.9 3.6 ND 7.4 4.9 ND 1.7 30 5.2 3.2 2.3 4.6 3.4 16 2.9 ND Meets Criteria Benzo(a)pyrene 371 ug/kg 5.8 2.3 EPA-8270C-SIM Yes Yes 4.1 ND 3.9 4.2 4.9 4.3 7.6 ND 5.9 6.3 ND 10 10 10 2.8 2.3 35 5 9 6.8 5.7 8.3 7.2 2.2 5.8 4 Meets Criteria Benzo(a)pyrene 2.9 4 ug/kg 5.8 2.3 EPA-8270C-SIM Yes Yes 5.2 ND	Acenaphthylene	88.0	ug/kg	3.5	1.2	EPA-8270C-SIM	Yes	Yes	ND	ND	ND	ND	ND	ND	ND	ND	4.1	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.4	ND	ND	Meets Criteria
Service Serv	Anthracene	88.0	ug/kg	3.5	1.2	EPA-8270C-SIM	Yes	Yes	ND	ND	ND	ND	ND	ND	2.6	ND	9.2	ND	ND	3.5	2.7	ND	2.9	3.9	3	2.8	2.3	2.9	ND	6	2.5	ND	Meets Criteria
Benzo (e) pyrene	Benz(a)anthracene		ug/kg				Yes	Yes	1.8			2.3	2.4	2	4.9	ND		3.6	ND	7.4					5.2	3.2						ND	Meets Criteria
Penzo(p) flouranthene 371 ug/kg 3.5 1.2 EPA-8270C-SIM Yes Yes 5.2 ND 5 4.9 6.1 5.1 10 4.2 10 7.5 4.2 13 10 3.9 3.2 51 11 7.6 6 9.6 8.8 25 6.5 4.4 Meels Criteria																									9							4	
Encro(g,h,l)perylene 310											ND																						
Benzo(k)flouranthene											5																						
Siphery 12.9																													0.9	20			
Chrysene 289 ug/kg 3.5 1.2 EPA-8270C-SIM Ves Ves ND ND 1.6 1.5 V.4 ND																													ND	ND			
Dibenz(a,h)anthracene 32.7 ug/kg 3.5 1.2 EPA-8270C-SIM Yes Yes ND																										2			3				
Flouranthene 514 ug/kg 3.5 1.3 EPA-8270C-SIM Yes Yes 4.8 2.1 4.3 4.6 5.3 3.6 11 3.4 3.7 6.7 2.7 16 14 3.2 25 43 11 5.2 3.4 7.1 5.7 27 5.1 ND Meets Criteria Flourene 25.3 ug/kg 3.5 1.2 EPA-8270C-SIM Yes Yes ND	-																									ND			ND				
Flourene 25.3 ug/kg 3.5 1.2 EPA-8270C-SIM Yes Yes ND																																	
Indeno(1,2,3-c,d)pyrene 382 ug/kg 3.5 1.2 EPA-8270C-SIM Yes Yes 3.7 ND 4.3 3.8 4.5 4 6.1 ND 4.4 5.1 ND 7.4 6.1 3.6 13 18 7.5 5.6 4.9 6.2 6.1 15 4.7 4.4 Meets Criteria Naphthalene 55.8 ug/kg 3.5 1.2 EPA-8270C-SIM Yes Yes ND									ND		ND				ND	ND	ND				ND			ND	ND		ND	ND			ND		
Naphthalene 55.8 ug/kg 3.5 1.2 EPA-8270C-SIM Yes Yes ND	Indeno(1,2,3-c,d)pyrene																																
Phenanthrene 237 ug/kg 3.5 1.2 EPA-8270C-SIM Yes Yes ND 5.2 4.9 ND 5.4 8.6 3.4 1.6 1.5 2.1 ND 12 2.2 ND Meets Criteria Pyrene 665 ug/kg 3.5 1.8 EPA-8270C-SIM Yes Yes 5.9 ND 5.4 6.5 7.3 4.3 17 4.6 3.7 10 3.1 24 21 4.3 30 49 16 6.8 4.5 11 6.9 30 5.4 ND Meets Criteria Total Petroleum Hydrocarbons	Naphthalene	55.8	ug/kg	3.5	1.2	EPA-8270C-SIM	Yes	Yes	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	Meets Criteria
Pyrene 665 ug/kg 3.5 1.8 EPA-8270C-SIM Yes Yes 5.9 ND 5.4 6.5 7.3 4.3 17 4.6 3.7 10 3.1 24 21 4.3 30 49 16 6.8 4.5 11 6.9 30 5.4 ND Meets Criteria Total Petroleum Hydrocarbons Total Petroleum Hydrocarbons	Perylene	145	ug/kg	5.8	2.3	EPA-8270C-SIM	Yes	Yes	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	2.6	2.7	ND	5.8	8.2	ND	ND	ND	ND	ND	5.2	ND	ND	Meets Criteria
Total Petroleum Hydrocarbons 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5	Phenanthrene		ug/kg	3.5	1.2		Yes	Yes	ND	ND	ND	ND	ND	ND	3.4	ND	ND	ND	ND	5.2	4.9	ND	5.4	8.6	3.4	1.6	1.5	2.1	ND	12	2.2	ND	Meets Criteria
	•	665	ug/kg	3.5	1.8	EPA-8270C-SIM	Yes	Yes	5.9	ND	5.4	6.5	7.3	4.3	17	4.6	3.7	10	3.1	24	21	4.3	30	49	16	6.8	4.5	11	6.9	30	5.4	ND	Meets Criteria
TPHs, sum' NA mg/kg 304 99.8 EPA-8015B/FFP NA NA ND																																	
	TPHs, sum'	NA	mg/kg	304	99.8	EPA-8015B/FFP	NA	NA	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	ND	See note B

Contaminant level exceeds the RWQCB screening criterion

ND: Analyte not detected at concentration equal to or greater than the MDL.

¹ The RL & MDL reported for these sumations are the sums of the RLs and MDLs for the individual analytes

Note A: Samples 9-O, 10-W, and 11-W contain cadmium concentrations above the screening criterion

Note B: There are no screening criteria specified for these analytes

Attachment B.

BC Laboratory Report- Contaminants Data



Date of Report: 04/14/2017

Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Client Project: 15284

BCL Project: Alameda Point

BCL Work Order: 1708436 Invoice ID: B264632

Enclosed are the results of analyses for samples received by the laboratory on 3/30/2017. If you have any questions concerning this report, please feel free to contact me.

Sincerely,

Contact Person: Kerrie Vaughan

Client Services

Authorized Signature

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



Sample Information	
Chain of Custody and Cooler Receipt form	7
Laboratory / Client Sample Cross Reference	
Sample Results	
1708436-01 - Composite 1-O-A,1-O-B	
Organochlorine Pesticides (EPA Method 8081A)	31
PCB Analysis (EPA Method 8082)	
Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	35
Total Petroleum Hydrocarbons	36
Chemical Analysis	37
Total Concentrations (TTLC)	38
1708436-02 - Composite 1-W-A,1-W-B	
Organochlorine Pesticides (EPA Method 8081A)	39
PCB Analysis (EPA Method 8082)	40
Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)	41
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Total Petroleum Hydrocarbons	44
Chemical Analysis	45
Total Concentrations (TTLC)	46
1708436-03 - Composite 2-O-A,2-O-B	
Organochlorine Pesticides (EPA Method 8081A)	
PCB Analysis (EPA Method 8082)	
Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Total Petroleum Hydrocarbons	
Chemical Analysis	
Total Concentrations (TTLC)	54
1708436-04 - Composite 2-W-A,2-W-B	
Organochlorine Pesticides (EPA Method 8081A)	
PCB Analysis (EPA Method 8082)	
Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Total Petroleum Hydrocarbons	
Chemical Analysis	
Total Concentrations (TTLC)	
1708436-05 - Composite 3-O-A,3-O-B	63
Organochlorine Pesticides (EPA Method 8081A) PCB Analysis (EPA Method 8082)	
Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Total Petroleum Hydrocarbons	
Chemical Analysis	
Total Concentrations (TTLC)	
1708436-06 - Composite 3-W-A,3-W-B	
Organochlorine Pesticides (EPA Method 8081A)	71
PCB Analysis (EPA Method 8082)	
Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Total Petroleum Hydrocarbons	
Chemical Analysis	
Total Concentrations (TTLC)	
1708436-07 - Composite 4-O-A,4-O-B	
Organochlorine Pesticides (EPA Method 8081A)	



PCB Analysis (EPA Method 8082)	80
Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)	81
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Total Petroleum Hydrocarbons	
Chemical Analysis	
Total Concentrations (TTLC)	
1708436-08 - Composite 4-W-A,4-W-B	
Organochlorine Pesticides (EPA Method 8081A)	87
PCB Analysis (EPA Method 8082)	
Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Total Petroleum Hydrocarbons	
Chemical Analysis	
Total Concentrations (TTLC)	
1708436-09 - Composite 5-O-A,5-O-B	
Organochlorine Pesticides (EPA Method 8081A)	95
PCB Analysis (EPA Method 8082)	
Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Total Petroleum Hydrocarbons	
Chemical Analysis	
Total Concentrations (TTLC)	
1708436-10 - Composite 5-W-A,5-W-B	102
Organochlorine Pesticides (EPA Method 8081A)	103
PCB Analysis (EPA Method 8082)	
Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Total Petroleum Hydrocarbons	
·	
Chemical Analysis	
Total Concentrations (TTLC)	
1708436-11 - Composite 6-O-A,6-O-B	444
Organochlorine Pesticides (EPA Method 8081A)	
PCB Analysis (EPA Method 8082)	
Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Total Petroleum Hydrocarbons	
Chemical Analysis	
Total Concentrations (TTLC)	118
1708436-12 - Composite 6-W-A,6-W-B	440
Organochlorine Pesticides (EPA Method 8081A)	
PCB Analysis (EPA Method 8082)	
Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Total Petroleum Hydrocarbons	
Chemical Analysis	
Total Concentrations (TTLC)	126
1708436-13 - Composite 7-O-A,7-O-B	
Organochlorine Pesticides (EPA Method 8081A)	
PCB Analysis (EPA Method 8082)	
Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Total Petroleum Hydrocarbons	
Chemical Analysis	
Total Concentrations (TTLC)	134



1708436-14 - Composite 7-W-A,7-W-B	
Organochlorine Pesticides (EPA Method 8081A)	135
PCB Analysis (EPA Method 8082)	136
Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)	137
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Total Petroleum Hydrocarbons	
Chemical Analysis	
Total Concentrations (TTLC)	142
1708436-15 - Composite 8-O-A,8-O-B	
Organochlorine Pesticides (EPA Method 8081A)	
PCB Analysis (EPA Method 8082)	
Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Total Petroleum Hydrocarbons	
Chemical Analysis	
Total Concentrations (TTLC)	150
1708436-16 - Composite 8-W-A,8-W-B	
Organochlorine Pesticides (EPA Method 8081A)	
PCB Analysis (EPA Method 8082)	
Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Total Petroleum Hydrocarbons	
Chemical Analysis	
Total Concentrations (TTLC)	158
1708436-17 - Composite 9-O-A,9-O-B	450
Organochlorine Pesticides (EPA Method 8081A)	
PCB Analysis (EPA Method 8082)	
Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Total Petroleum Hydrocarbons	
Chemical Analysis	
Total Concentrations (TTLC)	100
1708436-18 - Composite 9-W-A,9-W-B	407
Organochlorine Pesticides (EPA Method 8081A)	
PCB Analysis (EPA Method 8082)	
Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Total Petroleum Hydrocarbons	
Chemical Analysis Total Concentrations (TTLC)	
· · · · ·	1/4
1708436-19 - Composite 10-O-A,10-O-B	175
Organochlorine Pesticides (EPA Method 8081A) PCB Analysis (EPA Method 8082)	
Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Total Petroleum Hydrocarbons	
Chemical Analysis	
Total Concentrations (TTLC)	
1708436-20 - Composite 10-W-A,10-W-B	102
Organochlorine Pesticides (EPA Method 8081A)	100
PCB Analysis (EPA Method 8082)	
Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)	
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Total Petroleum Hydrocarbons	
Total Followith Hydrodarbono	100



Chemical Analysis	189
Total Concentrations (TTLC)	190
1708436-21 - Composite 11-O-A,11-O-B	
Organochlorine Pesticides (EPA Method 8081A)	191
PCB Analysis (EPA Method 8082)	192
Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)	193
Purgeable Aromatics and Total Petroleum Hydrocarbons	195
Total Petroleum Hydrocarbons	196
Chemical Analysis	197
Total Concentrations (TTLC)	198
1708436-22 - Composite 11-W-A,11-W-B	
Organochlorine Pesticides (EPA Method 8081A)	199
PCB Analysis (EPA Method 8082)	200
Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)	201
Purgeable Aromatics and Total Petroleum Hydrocarbons	203
Total Petroleum Hydrocarbons	204
Chemical Analysis	205
Total Concentrations (TTLC)	206
1708436-23 - Composite 12-O-A,12-O-B	
Organochlorine Pesticides (EPA Method 8081A)	207
PCB Analysis (EPA Method 8082)	208
Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)	209
Purgeable Aromatics and Total Petroleum Hydrocarbons	211
Total Petroleum Hydrocarbons	212
Chemical Analysis	213
Total Concentrations (TTLC)	214
1708436-24 - Composite 12-W-A,12-W-B	
Organochlorine Pesticides (EPA Method 8081A)	
PCB Analysis (EPA Method 8082)	
Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)	217
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Total Petroleum Hydrocarbons	220
Chemical Analysis	
Total Concentrations (TTLC)	222
Quality Control Reports	
Organochlorine Pesticides (EPA Method 8081A)	
Method Blank Analysis	223
Laboratory Control Sample	225
Precision and Accuracy	226
PCB Analysis (EPA Method 8082)	
Method Blank Analysis	227
Laboratory Control Sample	228
Precision and Accuracy	229
Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)	
Method Blank Analysis	230
Laboratory Control Sample	232
Precision and Accuracy	234
Purgeable Aromatics and Total Petroleum Hydrocarbons	
Method Blank Analysis	237
Laboratory Control Sample	
Precision and Accuracy	239
Total Petroleum Hydrocarbons	
Method Blank Analysis	
Laboratory Control Sample	241



	Precision and Accuracy	242
	Chemical Analysis	
	Precision and Accuracy	243
	Total Concentrations (TTLC)	
	Method Blank Analysis	244
	Laboratory Control Sample	246
	Precision and Accuracy	247
Notes	·	
	Notes and Definitions	250



Chain of Custody and Cooler Receipt Form for 1708436 Page 1 of 13 140 Date & Time 3/30/17 Date & Time **Analysis Requested** CHAIN OF CUSTODY 1747 yd gH IstoT Total - As, Cd, Cr, Cu, Pb, Ni, Se, Ag, Zn by 6020 Solids by SM2540G for Dry Weight Calculations TPHg by 8015, FFP by 8015 PCBs by 8082, PNAs by 8270 Organo-Chlorine Pesticides by 8081 Received by Received by Sample Type:
(GW)
Ground-water
(S)
Soil
(WW) Gas (g) (SL) Sludge 4100 Atlas Court ☐ Bakersfield, CA 93308 (661) 327-4911 ☐ FAX (661) 327-1918 95/ 0955 ଫ** 34 9 007 1401 2 0 Date & Time Sampled Relinguished by: (Signature) (13 3/29/ Relinquished by: (Signature) (Signature) Relinquished by: 2230 Project: Alameda Point Sampler Name: Project #: _ocation: Sample Description 7-08436 BC LABORATORIES, INC. H.T.Harvey & Associates 983 University Avenue, Bldg D mpollock@harveyecology.com Report Attention: Los Gatos, CA 95031 TAT: 10 days 408-458-3237 Matt Pollock 302-0-B Comments -W-B 31 7-W-A 1-0-B Address: 7-0-Z Lab# 7-0-150 2



Chain of Custody and Cooler Receipt Form for 1708436 Page 2 of 13 5580 Date & Time Date & Time **Analysis Requested** 3/30/ CHAIN OF CUSTODY Total Hg by 7471 Total - As,Cd,Cr,Cu,Pb,Ni,Se,Ag,Zn by 6020 Solids by SM2540G for Dry Weight Calculations TPHg by 8015, FFP by 8015 PCBs by 8082, PNAs by 8270 Y Organo-Chlorine Pesticides by 8081 Received by Sample
Type:
(GW)
Groundwater
(S)
Soil
(WW)
Waste-water Received by Gas (g) (SL) Sludge 4100 Atlas Court □ Bakersfield, CA 93308 (661) 327-4911 □ FAX (661) 327-1918 5060 0930 9/10 0760 1050 1057 03 10/21 Date & Time Sampled Relinguished by: (Signature) /bĭ/ Relinquished by: (Signature) Project: Alameda Point Sampler Name: Project #: Location: Sample Description S; 35480-F 3C LABORATORIES, INC. H.T.Harvey & Associates 983 University Avenue, Bldg D mpollock@harveyecology.com Report Attention: Los Gatos, CA 95031 TAT: 10 days Comments Matt Pollock ,343-0-B -404-M-B Address: 363-W-B -384-0-B 1394-W-A 353-W-A 4-0-45° Lab# 433-0-A



Chain of Custody and Cooler Receipt Form for 1708436 Page 3 of 13 0857 Date & Time Date & Time 3/30/17 Requested CHAIN OF CUSTODY Total Hg by 7471 Total - As, Cd, Cr, Cu, Pb, Ni, Se, Ag, Zn by 6020 Analysis PRINT Solids by SM2540G for Dry Weight Calculations TPHg by 8015, FFP by 8015 PCBs by 8082, PNAs by 8270 Organo-Chlorine Pesticides by 8081 Received Sample
Type:
(GW)
Groundwater
(S)
Soil
(WW) Gas (g) Sec. (SL) Sludge 4100 Atlas Court ☐ Bakersfield, CA 93308 (661) 327-4911 ☐ FAX (661) 327-1918 450 435 **ፖ**ተታ 0827 0834 1430 8/80 084 Date & Time Sampled (1/67) Reliberished by: (Signature) Relinquished by: (Signature) Relinquished by: (Signature) Project: Alameda Point Sampler Name: Project #: Location: Sample Description SS: 17-08436 BC LABORATORIES, INC. H.T.Harvey & Associates 983 University Avenue, Bldg D mpollock@harveyecology.com = Report Attention: Los Gatos, CA 95031 TAT: 10 days 408-458-3237 Matt Pollock Comments 486-W-B 4-W-284. -445-W-B 425-0-B 46-0-B Y-M-9th-4-05m Lab# ·46-0-



Chain of Custody and Cooler Receipt Form for 1708436 Page 4 of 13 7280 07 Date & Time Date & Time **Analysis Requested** 30 CHAIN OF CUSTODY Total Hg by 7471 Total - As,Cd,Cr,Cu,Pb,Ni,Se,Ag,Zn by 6020 Solids by SM2540G for Dry Weight Calculations TRING TPHg by 8015, FFP by 8015 PCBs by 8082, PNAs by 8270 Organo-Chlorine Pesticides by 8081 Sample
Type:
(GW)
Groundwater
(S)
Soil
(WW)
Waste-water
(SL)
Sludge Received Gas (g) 4100 Atlas Court ☐ Bakersfield, CA 93308 (661) 327-4911 ☐ FAX (661) 327-1918 1256 400 1305 9 1343 350 1251 Date & Time Sampled Relinguished by: (Signature) 138/ Relinquished by: (Signature) Relinquished by: (Signature) Project: Alameda Point Sampler Name: Project #: Location: Sample Description SS: 17-08436 BC LABORATORIES, INC. H.T.Harvey & Associates 983 University Avenue, Bldg D mpollock@harveyecology.com Report Attention: Los Gatos, CA 95031 TAT: 10 days 408-458-3237 507-0-B+ Comments Matt Pollock -W-D -8-M-8-2-B-0-1-M-712-Address: N-0-7 m F-0-A-W-855 Bill to: Lab# . 38. 725. 248



Chain of Custody and Cooler Receipt Form for 1708436 Page 5 of 13 Date & Time 3-30-17 Date & Time 3/30/17 **Analysis Requested** CHAIN OF CUSTODY Total Hg by 7471 BCC Total - As, Cd, Cr, Cu, Pb, Ni, Se, Ag, Zn by 6020 Solids by SM2540G for Dry Weight Calculations PBILLS TPHg by 8015, FFP by 8015 PCBs by 8082, PNAs by 8270 Organo-Chlorine Pesticides by 8081 Sample Type:
(GW)
Ground-water
(S)
Soil
(WW) Gas (g) Receive (SL) Sludge 4100 Atlas Court □ Bakersfield, CA 93308 (661) 327-4911 □ FAX (661) 327-1918 535 520 1515 1530 2 Date & Time Sampled Rolinguistred by: (Signature) 50/17 Relinquished by: (Signature) 3.30-17 3/28/17 Relinquished by: (Signature) Project: Alameda Point Sampler Name: B 83 Project #: Location: Sample Description S S 7-08436 BC LABORATORIES, INC. H.T.Harvey & Associates 983 University Avenue, Bldg D mpollock@harveyecology.com Report Attention: Los Gatos, CA 95031 TAT: 10 days Comments Matt Pollock 60 9 -W-B B-0-01 19 2-89-0-B 1-W-PP2. -63 10-W-A Address: 7-0-0119-Lab# 7-0-bLS



Chain of Custody and Cooler Receipt Form for 1708436 Page 6 of 13 8580 Date & Time Date & Time 3/30/17 **Analysis Requested** CHAIN OF CUSTODY Total Hg by 7471 Total - As,Cd,Cr,Cu,Pb,Ni,Se,Ag,Zn by 6020 Solids by SM2540G for Dry Weight Calculations PRIN TPHg by 8015, FFP by 8015 PCBs by 8082, PNAs by 8270 Organo-Chlorine Pesticides by 8081 Received by: Received by: Sample
Type:
(GW)
Groundwater
(S)
Soil
(WW) Received Gas (g) (SL) Sludge 4100 Atlas Court □ Bakersfield, CA 93308 (661) 327-4911 □ FAX (661) 327-1918 1045 2460 0926 8060 8101 1022 038 10/11 Date & Time Sampled 3/28/17 Relinquished by: (Signature) Relinquished by: (Signature) 3-3 Relinquished by; (Signature) Project: Alameda Point Sampler Name: 19 B Project #: Location: Sample Description S S 17-08436 BC LABORATORIES, INC. H.T.Harvey & Associates 983 University Avenue, Bldg D mpollock@harveyecology.com Report Attention: Los Gatos, CA 95031 TAT: 10 days 12-W-B Comments: Matt Pollock 12-0-B Address: 1-0-B 7-3-1-0-A Lab# 1-M-1189 9 169 12/ 168 _66 _



Chain of Custody and Cooler Receipt Form for 1708436 Page 7 of 13

BC LABORATORIES INC.			COOLER	RECEIP	T FORM			Pag	ge <u> </u>	017
Submission #: 11-08736										
SHIPPING INFORM Fed Ex □ UPS □ Ontrac □ BC Lab Field Service 🔼 Other □	Han (Specif			Ice C	hest 🛆	G CONTA None pecify)	Box 🗆		FREE LIC YES [] W /	
Refrigerant: Ice X Blue Ice □	None	е 🗆	Other 🗆		ments:					
Intact? Yes 3 No.01	Contain tact? Yes	□ No □			nments:					
All samples received? Yes € No □ Al	l samples	container	s intact?	ges A N	ø 🗆	Descrip	tion(s) ma	tch COC?	Yes No	_ つ うえ ひ
COC Received Emiss	sivity: _	2.47	Container;	lein gre	1 Thermo	ometer ID:	0+	Date/Ti	me 3/50	72.00
	nperature:		_	ر /ه٠	(C)	<i>J</i> . <u>]</u>	°C	Analyst	Init 6	
	r	\		V		/ LE NUMBERS			-	
SAMPLE CONTAINERS	25	1 26	127	1 28	⊥ 37	38	39	140	173	10
QT PE UNPRES		Ī	ļ		 		-	 	 -	+
4oz / 8oz / 16oz PE UNPRES		 	-	 		-	-	 	 	1
20z Cr*6			ļ	ļ		-	 	-	 	+
QT INORGANIC CHEMICAL METALS		 	 	ļ	 	 	-	-	 	1
INORGANIC CHEMICAL METALS 40z / 80z / 160z		-					 	 	 	
PT CYANIDE		<u> </u>	 		 	 	-	-		
PT NITROGEN FORMS		ļ	 	 	-		<u> </u>		 	1
PT TOTAL SULFIDE		 			-				 	
2oz. NITRATE / NITRITE		 			 	-		 		$+\parallel$
PT TOTAL ORGANIC CARBON		 			 	 				
PT CHEMICAL OXYGEN DEMAND		 			-	 			7	
PIA PHENOLICS					 	 			A	
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL		 			 					
QT EPA 1664		 			 	1				
PT ODOR					 					
RADIOLOGICAL		<u> </u>			1					
BACTERIOLOGICAL			<u></u>		1					
40 ml VOA VIAL- 504					1					
QT EPA 508/608/8080					†					
QT EPA 515.1/8150			-					ď		
QT EPA 525										
QT EPA 525 TRAVEL BLANK				7	†					
40ml EPA 547										
40ml EPA-531.1									• 3 100 10 11 11 11	
80z EPA 548										
QT EPA 549										
QT EPA 8015M	•									
QT EPA 8270										
80z / 160z / 320z AMBER 80z / 160z / 320z JAR	A	A	A	Д	A	A	A	A		
80Z / 160Z / 920Z JAR SOIL SLEEVE			-71							
PCB VIAL										
PLASTIC BAG								<u>.</u>		
TEDLAR BAG										
FERROUS IRÔN										
ENCORE									-	
SMART-KIT					-					
SUMMA CANISTER		0								
	/ /	1/			_	1101	1800			



Chain of Custody and Cooler Receipt Form for 1708436 Page 8 of 13

SHIPPING INFORI	□ Ha			- []	SHIPPIN	G CONT.	AINER	ı II	FREE	LIQUID
Refrigerant: Ice X Blue Ice	□ (Speci	nd Delive	ry 🗆	Ice CI		None	□ Box [- 		NO 🗆 / (\$^5)
nonigerance	Nor	ne 🗆	Other 🗆		ments:					
Custody Seals lice Chest Lintact? Yes II No II	Contair Intact? Yes	ners □ s □ No □	1	Cor	nments:					
All samples received? Yes No □	All sample	s containe	rs intact? `	Yes N	9 🗆	Desci	ription(s) ma		Yes Z	Vo □
	issivity: _		Container		(C)		207 °c	Date/T Analys	9	56P
• • •	L					LE NUMBER				
SAMPLE CONTAINERS	129	130	131	132	3	3 3°	11 35	+ 36	- 4	1 90
QT PE UNPRES			_							
40z/80z/160z PE UNPRES	_			-		+		+	+	
20z Cr ³⁴⁶	_		4	ļ			-	-		
OT INORGANIC CHEMICAL METALS	_			<u> </u>		 		+	+	++
INORGANIC CHEMICAL METALS 40z / 80z / 160z	.		 					 	 	
PT CYANIDE	1			 		+		 	 	
PT NITROGEN FORMS			 			+		 	+	
PT TOTAL SULFIDE	 		 	_	-	+	+	-	 	
2oz. NITRATE / NITRITE	ļ		 		 	 	-	 	 	
PT TOTAL ORGANIC CARBON	!	-	-		 	 	+	 	+	
PT CHEMICAL OXYGEN DEMAND	 		 	 	-	 			 	+
PIA PHENOLICS	 -		 		-	+		 	 	
10ml VOA VIAL TRAVEL BLANK	 		 		 	+	-	 	 	+
loml VOA VIAL	 	 			 	 	+	 	 	$+\parallel$
OT EPA 1664	 	+				 	-		 	$+\parallel$
TODOR	 	 	-		 	+	-		 	1
ADIOLOGICAL		 	 		 	1	 		 	1
ACTERIOLOGICAL	 	1	 			 	 			
0 ml VOA VIAL- 504	 	 	 							
OT EPA 508/608/8080		-	\vdash		 					
OT EPA 515.1/8150		1	 		 	 	1	7		
T EPA 525		 								T
T EPA 525 TRAVEL BLANK		†								
Oml EPA 531 1		 						,		
Oml EPA-531.1	**************************************									
oz EPA 548 T EPA 549		1							***************************************	
T EPA 8015M	l									
T EPA 80151VI T EPA 8270		1								
2 / 160z / 32eg AMBER										
7/ 1602/7202 JAR	A	A	A	A	Α	A	A	A	A	1
OIL SLEEVE										•
CB VIAL								,		
LASTIC BAG										
EDLAR BAG										
ERROUS IKÔN										
NCORE									· · · · · · · · · · · · · · · · · · ·	
MART KIT										
										L
MMA CANISTER		h					<u></u>			



Chain of Custody and Cooler Receipt Form for 1708436 Page 9 of 13

BC LABORATORIES INC.			COOLER	RECEIPT	FORM			Pag	e	Of +
Submission #: 7 08436										
SHIPPING INFORM	IATION			s	HIPPING	CONTAI	NER		FREE LIC	
Fed Ex □ UPS □ Ontrac □		d Delive	ry 🗆	Ice Ch	est 🗹	None	Box 🗆		YES 🗆 1	
	(Specify			Oth	er □ (Spe	cify)		-	W /	(s)
				<u> </u>						<u> </u>
Refrigerant: lce X Blue Ice □	None	: 🗆	Other 🗆	Comr	nents:					
Figure of support Company and Company of Principles	And Authority rows departure		N	V c						
	Containe nact? Yes	11.00	None	Com	ments:					
All samples received? Yes ☐ No ☐ A	ll samples	containe	rs intact? Y Container:	es 🗸 No	<i>F.</i> ,	Descrip	tion(s) mate	т	61-	0
COC Received Emis	sivity: 0	197	Container:	loar 9	Thermon	neter ID: 🧘	(07	Date/Tin	163/30	_2250
Action III NO			Alı		(C) O		°C	Analyst	Init	ice P
. Ø⊂YES □ NO Ter	nperature:	(A)	0.4	°C Y	(C) U	• 0	-0	Allalyst		201
		۲			SAMPLE	NUMBERS				
SAMPLE CONTAINERS	113	94	3	4	5	6	7	8	9	10
OT PE UNPRES	1-1-4	+++								
40z/80z/160z PE UNPRES		T								
	f	1			l .					
20z Cr*6		†								
OT INORGANIC CHEMICAL METALS		1								
INORGANIC CHEMICAL METALS 40z / 80z / 160z		 	1							
PT CYANIDE		 	-							
PT NITROGEN FORMS		 								
PT TOTAL SULFIDE		 	-							
20z. NITRATE / NITRITE		-	+							
PT TOTAL ORGANIC CARBON		 								
PT CHEMICAL OXYGEN DEMAND			-						-,	
PIA PHENOLICS		ļ								
10ml VOA VIAL TRAVEL BLANK										
10ml VOA VIAL										
OT EPA 1664		ļ	-	·						
PT ODOR		 								
RADIOLOGICAL		ļ	-							
BACTERIOLOGICAL		ļ	<u> </u>							
10 ml VOA VIAL- 504		ļ	ļ							
QT EPA 508/608/8080										
QT EPA 515.1/8150			<u> </u>							
QT EPA 525		ļ						7		
QT EPA 525 TRAVEL BLANK										
10ml EPA 547										
10ml EPA 531.1										
30z EPA 548										
OT EPA 549										
)T EPA 8015M										
OT EPA 8270										
oz / 16oz / 32oz AMBER										
oz / 160z / \$20z AR	A	A								
OIL SLEEVE	1									
PCB VIAL										
LASTIC BAG									·····	
EDLAR BAG		·								
		<u> </u>								
FERROUS IRON		 								
ENCORE		ļ	+	***************************************						
SMART KIT										
SUMMA CANISTER			لـــــــــــــــــــــــــــــــــــــ							
			7							





Chain of Custody and Cooler Receipt Form for 1708436

110		CC	OLER RE	CEIP1 F	JKIVI				1	4-1
LABORATORIES INC.	T .							<u> </u>	255 1101	
ubmission #: 7-08436				SHI	PPING C	ONTAIN	ER	F	REE LIQUES D N	ן שונ
SHIPPING INFORM	ATION	Delivery	0	Inc Chast	A N	lone 🗆	Box ⊔	Y	\mathbf{w}'	7
ed Ex D UPS D Ontrac D	(Specify)	Denvoit		Other	☐ (Spec	ify)			VV / O	
C Lab Field Service A Other D	1 (Ороситут									
	None	O	ther 🗆	Comme	nts:					
terrigerance 104,7	Container		None 2	Comm	ents:					
ustody Seals lice Chest	ntact? Yes 🗈	No 🗆				Description	on(s) matcl	n COC? Y	s No [
Il samples received? Yes No □ A	Il samples c	ontainers	intact? Yes	Ng L		tor ID: 20	7	Date/Tim	3/30	1230
Emi	ssivity: _()).41 c	ontainer L	ou gars	hermoni	eter in A				ho
COC Received	mperature:		5	·c // (<u>c 1 0.</u>	<u>+</u>	°C]	Analyst li	···	
YES NO Te	mperature.	(A) O.			SAMPLE	NUMBERS			1	7.6
		11/	47	48	199	50	5	52	_5º1_	58
SAMPLE CONTAINERS	145	46	_11+	4101						
T PE UNPRES	 									
oz/8oz/16oz PE UNPRES	1	 								
0z Cr+6	 	-								
OT INORGANIC CHEMICAL METALS										
NORGANIC CHEMICAL METALS 40z / 80z / 160z		 								
PT CYANIDE	-									
PT NITROGEN FORMS	1	-								
PT TOTAL SULFIDE	-	-								
20z. NITRATE / NITRITE	+	1								
PT TOTAL ORGANIC CARBON	1	<u> </u>							•	
PT CHEMICAL OXYGEN DEMAND	1	 								
PŁA PHENOLICS	1									
40ml VOA VIAL TRAVEL BLANK	1									
40ml VOA VIAL						-				
QT EPA 1664										
PT ODOR										
RADIOLOGICAL			1							1
BACTERIOLOGICAL			<u> </u>	-						1
40 ml VOA VIAL-504										1
QT EPA 508/608/8080			 	-				7		1
QT EPA 515.1/8150						1	- 5			1
QT EPA 525 QT EPA 525 TRAVEL BLANK										
40ml EPA 547						1				
			-	-			my market to			1
40ml EPA-531.1 8oz EPA 548			-							
OT EPA 549			-	+	-					1
OT EPA 8015M					-					
OT EPA 8270	,			-	+				A	+A
80z / 160z / 32oz AMBER		- A	- A	A	A	A	A	LA	H	
80Z / 160Z / 320Z AMBERT	A	A	A	+11	1					
SOIL SLEEVE			-					<u> </u>	-	-
PCB VIAL								1:	-	-
PLASTIC BAG				-						-
TEDLAR BAG		_	-	+	1					
FERROUSTRON			-							-
ENCORE					-					
SMART KIT					+					
SUMMA CANISTER		10						>		
		2 -			rime:	121	186	$\mathcal{O}_{}$	Rev 2	05/23/2016
Comments:	,			Date	ume: 🏒	111			AB_DOCS\FORM	SISAMRECTEV 20





Chain of Custody and Cooler Receipt Form for 1708436 Page 11 of 13

C LABORATORIES INC.		C	OOLER Ŗ	ECEIPT	FORM	\neg		rage	5	"
Submission #: 17-08436									FREE LIQ	UID.
SHIPPING INFORMA	TION				IIPPING (CONTAIL	VER		/ES 🗆 N	
	Hand	Delivery		Ice Che		None 🗆		1	W / J	
				Othe	r ⊡ [′] (Spec	ify)		-	VV /	ار
BC Lab Field Service A Other 🗆										
Refrigerant: Ice 🗶 Blue Ice 🗆	None		ther 🗆	Comm	ents:					
nemgerane	Containe		None	Comr	nents:					
TIETOOV DEGIS INVESTIGATION IN	ontainei act? Yes - [SU	TWO IIC							
Intact? Yes No 11 Lini				Α .		Descript	tion(s) mate	h COC? Y	es A No	.
All samples received? Yes All	samples c	ontainers	intact? Ye	s T Ng]			T	nin.	7230
All samples received: 100	ivity:	1.97 0	ontainer.	our das	&Thermom	eter ID:	0+	Date/Tim	10 JOU	2
COC Received				//.		7	°C	Analyst I	nit 6C	I = I
YES NO Tem	perature:	(A) O.	5	°C V /	(C) O.					
					SAMPLE	NUMBERS 64				
SAMPLE CONTAINERS	20	60	61	62	63	64	13	8.	9	10
SAWIFLE GORT/III	59	00	01							
QT PE UNPRES										1
4oz / 8oz / 16oz PE UNPRES										
20z Cr*6		 								
OT INORGANIC CHEMICAL METALS		 								
INORGANIC CHEMICAL METALS 40z / 80z / 160z		ļ								
PT CYANIDE							1			
PT NITROGEN FORMS		<u> </u>					1			
PT TOTAL SULFIDE										
20z. NITRATE / NITRITE		ļ								
PT TOTAL ORGANIC CARBON							1			
PT CHEMICAL OXYGEN DEMAND							B		,	
PIA PHENOLICS							1			
40ml VOA VIAL TRAVEL BLANK							-			
1										
40ml VOA VIAL										
QT EPA 1664			1							
PT ODOR										
RADIOLOGICAL										
BACTERIOLOGICAL		1								
40 ml VOA VIAL- 504		†								
QT EPA 508/608/8080	 		1							
QT EPA 515.1/8150	l	 						7		1
QT EPA 525	 	╂								
QT EPA 525 TRAVEL BLANK	<u> </u>	 	-							1
40ml EPA 547	 	 	 							
40ml EPA 531.1			-			7				
80z EPA 548		 		<u> </u>		 				
QT EPA 549	<u> </u>			<u> </u>						
OT EPA 8015M							-			
OT EPA 8270	<u> </u>		<u> </u>			-				
80z / 160z / 320z AMBER						ΙΛ-		+		
80z / 160z / 3202 JAR	A	A	A		A	17	-	-	 	
SOIL SLEEVE		'						-	+	+
	1						-	 	-	+
PCB VIAL								ļ.	-	
PLASTIC BAG	1							-	-	+
TEDLAR BAG	T							-		+
FERROUSTRON	1	1								
ENCORE	-	-	 	+	1					
SMART KIT	1	+		-	+	-				
SUMMA CANISTER	<u> </u>					<u> </u>				
Comments:					ime: 3	101	180)	Ray 21	05/23/2016
				Date/T	:ma: 🔿		1011	\WordPerfect\LA		





Chain of Custody and Cooler Receipt Form for 1708436 Page 12 of 13

Submission #: + 08450 SHIPPING INFOR		Delivery		Ice Che	HIPPING est △ er □ (Spe	None 🗆	VER Box □		FREE LIC YES 🗆 W /(
BC Lab Field Service A Other			41	Comp	nents:					
Refrigerant: Ice X Blue Ice			ther 🗆	Ż Com						
Custody Seals lice Chest (1)	Containe	rs.⊟ ⊡No:⊡	None	Z C0111						
<u> </u>			intact? Y	es 🗹 No.	. 🗆	Descrip	tion(s) mat	ch COC?	Yes No	7720
All sumples (see	All samples on the samples of the sample	.97 c	ontainer	Pas gla	38 Thermon	neter ID:	07	Date/Tir	ne3/30_	1250
333					(c) O.	Ø .	°C	Analyst	Init 6	\mathcal{L}
YES NO	emperature:	(A) O	· 6	°C /						
		<u> </u>	0		SAMPLE	NUMBERS	67	16 8	169	710
SAMPLE CONTAINERS	155	34	55	56	5	66	1 0/	TO 9		T C
QT PE UNPRES	4									
4oz / 8oz / 16oz PE UNPRES										-
20z Cr+6	1									1
QT INORGANIC CHEMICAL METALS									 	+
INORGANIC CHEMICAL METALS 40z / 80z / 160	-							 		+
PT CYANIDE						ļ		**		1
PT NITROGEN FORMS								- 3	***	1
PT TOTAL SULFIDE 20z. NITRATE / NITRITE								-	 	
PT TOTAL ORGANIC CARBON						 		-		
PT CHEMICAL OXYGEN DEMAND									1	
PIA PHENOLICS					ļ					
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL										
QT EPA 1664	-									
PT ODOR										
RADIOLOGICAL										1
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		-	7.0 p 12.00						W. W. (Mar.) 1 (1) (1)	
80z EPA 548				,						
OT EPA 549					-		-			
QT EPA 8015M								1		
QT EPA 8270				 	-		 			
80z/160z/320z AMBER	+	A		A	+ <u>^</u>	I	Λ	A	Δ	A
80z / 160z / \$207 JAR	IA_	N	A	17	1		1			
SOIL SLEEVE										
PCB VIAL	-	 								
PLASTIC BAG										
TEDLAR BAG										
FERROUS IRON	†									
ENCORE		 								
SMART KIT		-		 						
SUMMA CANISTER		1						••		



Chain of Custody and Cooler Receipt Form for 1708436 Page 13 of 13

BC LABORATORIES INC.		C	OOLER	RECEIPT	FORM				Page #	<u>- UT</u>
17 011/2	ス し									
Submission #: 1 - 0540	U_			S	HIPPING	CONTAI	NER		FREE L	
SHIPPING INFORM	AHUN	l Delivery	, \sqcap	Ice Che		None 🗆	Box 🗆		YES 🗆	
Fed Ex □ UPS □ Ontrac □	(Specify)	,	Oth	er ⊟'(Spe	cify)		_ [W	/ (\$)
BC Lab Field Service Other □	(Opcon)									
Refrigerant: Ice X Blue Ice	None	П	Other 🗆	Comn	ents:					
nongo	100000000000000000000000000000000000000	WILLIAM WATER		Ž Com	mants.					
Custous acais lies sugar	Containe		None	ZZ Com	Helita.					
Intact? Yes 🗆 No 🗇 🔝 🗓	tact? Yes			^					- × £	
All samples received? Yes ☑ No ☐ Al	l samples	containers	intact? Y	es No				tch COC	C? Yes N	7730
All samples received	sivita:	1.97	Container	Vers gla	8 Thermor	neter ID:	0+	Date	/Time3/30	72.50
000 110001111	Sivity.		ع <u>.</u>			0	°C	Δnal	yst Init	SP 1
YES INO Ten	perature:	(A) C	<u> </u>	°C 1	(c) O.	88		1 41101	70	'
		,			SAMPL	E NUMBERS				
SAMPLE CONTAINERS	7,	172	1 13	4	5] 6		8	9	10
Compare An Impage		t					_			
QT PE UNPRES 4oz / 8oz / 16oz PE UNPRES						ļ				
							 	+		
2oz Cr⁴ ⁶ QT INORGANIC CHEMICAL METALS						<u> </u>				
OT INORGANIC CHEMICAL METALS INORGANIC CHEMICAL METALS 40z / 80z / 160z						ļ	_			
						ļ				_
PT CYANIDE						<u> </u>	1	4		
PT NITROGEN FORMS							1 3		- 18 Pa	
PT TOTAL SULFIDE						<u> </u>		_		
20z. NITRATE / NITRITE									_	
PT TOTAL ORGANIC CARBON						ļ		4		
PT CHEMICAL OXYGEN DEMAND								-		
Pta PHENOLICS			C							
40ml VOA VIAL TRAVEL BLANK										
40ml VOA VIAL						ļ				
OT EPA 1664										-
PT ODOR										
RADIOLOGICAL						<u> </u>				
BACTERIOLOGICAL								 		
40 ml VOA VIAL- 504						ļ				
QT EPA 508/608/8080						ļ	<u> </u>			
OT EPA 515.1/8150								7		
OT EPA 525 TPA VEL BLANK							-	-		
OT EPA 525 TRAVEL BLANK						ļ	-		_	
40ml EPA 547						1,				
40ml EPA 531.1	METALON CONTRACTOR STREET	1								
80z EPA 548							-		_	
OT EPA 549 OT EPA 8015M								-		
OT EPA 8270		T .								
80z / 160z / 320z AMBER 80z / 160z / 320z JAR	Δ	A								
80z / 160z//320t JAR SOIL SLEEVE	1									
PCB VIAL										$+\parallel$
PLASTIC BAG										
TEDLAR BAG	1									_
FERROUS IRON	l –	1								
ENCORE	 	1								
SMART KIT		A		 						
SUMMA CANISTER		y		<u> </u>	1	01 .				
Comments:	(AC)	Ĭ		P . (20		83	16	100	Rev 2	1 05/23/2016
Sample Numbering Completed By:	///			Date/T	me:	ULL		·	tILAB_DOCS\FORM	



H.T. Harvey & Associates
983 University Avenue, Building D

Los Gatos, CA 95032

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Laboratory	Client Sample Informati	ion		
1708436-01	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/30/2017 00:00
	Sampling Location:		Sample Depth:	
	Sampling Point:	Composite 1-O-A,1-O-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
	Camplea by.		Cample Type.	
1708436-02	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/30/2017 00:00
	Sampling Location:		Sample Depth:	
		Composite 1 W A 1 W B		Solids
	Sampling Point:	Composite 1-W-A,1-W-B	Lab Matrix:	Soil
	Sampled By:		Sample Type:	5011
1708436-03	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:			03/30/2017 22:30
	•		Sampling Date:	
	Sampling Location:		Sample Depth:	0-1:-
	Sampling Point:	Composite 2-O-A,2-O-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-04	COC Number:		Receive Date:	03/30/2017 22:30
1700430-04				
	Project Number:		Sampling Date:	03/30/2017 00:00
	Sampling Location:		Sample Depth:	
	Sampling Point:	Composite 2-W-A,2-W-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-05	COC Number:		Pagaiya Data	03/30/2017 22:30
1700-00-00			Receive Date:	03/30/2017 00:00
	Project Number:		Sampling Date:	
	Sampling Location:		Sample Depth:	
	Sampling Point:	Composite 3-O-A,3-O-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-06	COC Number:		Receive Date:	03/30/2017 22:30
				03/30/2017 22:30
	Project Number:		Sampling Date:	
	Sampling Location:	Commonite 2 M/ A 2 M/ B	Sample Depth:	Calida
	Sampling Point:	Composite 3-W-A,3-W-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-07	COC Number:		Receive Date:	03/30/2017 22:30
				03/30/2017 00:00
	Project Number:		Sampling Date:	
	Sampling Location:		Sample Depth:	
	Sampling Point:	Composite 4-O-A,4-O-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil



H.T. Harvey & Associates

983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

1708436-08	COC Number: Project Number: Sampling Location:	 	Receive Date:	03/30/2017 22:30
	Sampling Location:			
	Sampling Location:		Sampling Date:	03/30/2017 00:00
	. •		Sample Depth:	
	Sampling Point:	Composite 4-W-A,4-W-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-09	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/30/2017 00:00
	Sampling Location:		Sample Depth:	
	Sampling Point:	Composite 5-O-A,5-O-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
708436-10	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/30/2017 00:00
	Sampling Location:		Sample Depth:	
	Sampling Point:	Composite 5-W-A,5-W-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-11	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/30/2017 00:00
	Sampling Location:		Sample Depth:	
		Composite 6-O-A,6-O-B	Lab Matrix:	Solids
	Sampling Point: Sampled By:		Sample Type:	Soil
	Sampled by.		Sample Type.	
1708436-12	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/30/2017 00:00
	Sampling Location:		Sample Depth:	
	Sampling Point:	Composite 6-W-A,6-W-B	Lab Matrix:	Solids
	Sampled By:	'	Sample Type:	Soil
1708436-13	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/30/2017 00:00
	Sampling Location:		Sample Depth:	
	Sampling Point:	Composite 7-O-A,7-O-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-14	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/30/2017 00:00
	Sampling Location:		Sample Depth:	
		Composite 7-W-A,7-W-B	Lab Matrix:	Solids
	Sampling Point: Sampled By:		Lab Matrix: Sample Type:	Soil



Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Laboratory	Client Sample Informati	on		
1708436-15	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/30/2017 00:00
	Sampling Location:		Sample Depth:	
	Sampling Point:	Composite 8-O-A,8-O-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-16	000 Noveles		Parada Pata	00/00/0047 00:00
1700430-10	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/30/2017 00:00
	Sampling Location:		Sample Depth:	
	Sampling Point:	Composite 8-W-A,8-W-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-17	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/30/2017 00:00
	Sampling Location:		Sample Depth:	
	Sampling Point:	Composite 9-O-A,9-O-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1700400 40				00/00/0047 00 00
1708436-18	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/30/2017 00:00
	Sampling Location:		Sample Depth:	
	Sampling Point:	Composite 9-W-A,9-W-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-19	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/30/2017 00:00
	Sampling Location:		Sample Depth:	
	Sampling Point:	Composite 10-O-A,10-O-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
.=				
1708436-20	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/30/2017 00:00
	Sampling Location:		Sample Depth:	
	Sampling Point:	Composite 10-W-A,10-W-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-21	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/30/2017 00:00
	Sampling Location:		Sample Depth:	
	Sampling Point:	Composite 11-O-A,11-O-B		Solids
	Sampling Point: Sampled By:		Lab Matrix: Sample Type:	Soil



Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Laboratory	Client Sample Informati	on		
1708436-22	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/30/2017 00:00
	Sampling Location:		Sample Depth:	
	Sampling Point:	Composite 11-W-A,11-W-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-23	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/30/2017 00:00
	Sampling Location:		Sample Depth:	
	Sampling Point:	Composite 12-O-A,12-O-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-24	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/30/2017 22:30
	Sampling Location:	 	Sample Depth:	
				Solids
	Sampling Point: Sampled By:	Composite 12-W-A,12-W-B	Lab Matrix: Sample Type:	Soil
	,			
1708436-25	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/29/2017 11:28
	Sampling Location:		Sample Depth:	
	Sampling Point:	1-O-A	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-26	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/29/2017 11:34
	•		• •	
	Sampling Location:	 1-O-B	Sample Depth:	Solids
	Sampling Point:	I-O-B	Lab Matrix:	Soil
	Sampled By:		Sample Type:	3011
1708436-27	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/29/2017 11:40
	Sampling Location:		Sample Depth:	
	Sampling Point:	1-W-A	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-28	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/29/2017 11:46
	Sampling Location:		Sample Depth:	
	. •	 1-W-B		Solids
	Sampling Point:		Lab Matrix:	Soil
	Sampled By:		Sample Type:	Juli



H.T. Harvey & Associates

Reported: 04/14/2017 10:38

983 University Avenue, Building D
Los Gatos, CA 95032
Project Number: 15284
Project Manager: Matt Pollock

Laboratory	Client Sample Informati	on		
1708436-29	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/29/2017 09:55
	Sampling Location:		Sample Depth:	
	Sampling Point:	2-O-A	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-30	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/29/2017 10:02
	Sampling Location:		Sample Depth:	
	Sampling Point:	2-O-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-31	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/29/2017 10:11
	Sampling Location:		Sampling Date:	
		2-W-A		Solids
	Sampling Point: Sampled By:	2-VV-A	Lab Matrix: Sample Type:	Soil
	campion by:		Sample Type.	
1708436-32	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/29/2017 10:21
	Sampling Location:		Sample Depth:	
	Sampling Point:	2-W-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-33	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/29/2017 09:05
	Sampling Location:		Sample Depth:	
	Sampling Point:	3-O-A	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-34	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/29/2017 09:14
	Sampling Location:		Sample Depth:	
	Sampling Point:	3-O-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
			Cumple 13pe.	
1708436-35	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/29/2017 09:20
	Sampling Location:		Sample Depth:	
	Sampling Point:	3-W-A	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil



Project Number: 15284
Project Manager: Matt Pollock

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Laboratory	Client Sample Informati	on		
1708436-36	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/29/2017 09:30
	Sampling Location:		Sample Depth:	
	Sampling Point:	3-W-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-37	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/29/2017 10:50
	Sampling Location:		Sample Depth:	
	Sampling Point:	4-O-A	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-38	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/29/2017 10:57
	Sampling Location:		Sample Depth:	
	Sampling Point:	4-O-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-39	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/29/2017 11:03
	Sampling Location:		Sample Depth:	
	Sampling Point:	4-W-A	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-40	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/29/2017 11:11
	Sampling Location:		Sample Depth:	
	Sampling Point:	4-W-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-41	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/29/2017 08:18
	Sampling Location:		Sample Depth:	
	Sampling Point:	5-O-A	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-42	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/29/2017 08:27
	Sampling Location:		Sample Depth:	
	Sampling Point:	5-O-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil



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Reported: 04/14/2017 10:38
Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284
Project Manager: Matt Pollock

Laboratory	Client Sample Informati	on		
1708436-43	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/29/2017 08:34
	Sampling Location:		Sample Depth:	
	Sampling Point:	5-W-A	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-44	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/29/2017 08:41
	Sampling Location:		Sample Depth:	
	Sampling Point:	5-W-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-45	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/28/2017 14:30
	Sampling Location:		Sample Depth:	
	Sampling Point:	6-O-A	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-46	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/28/2017 14:35
	Sampling Location:		Sample Depth:	
	Sampling Point:	6-O-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-47	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/28/2017 14:42
	Sampling Location:		Sample Depth:	
		6-W-A	Lab Matrix:	Solids
	Sampling Point: Sampled By:		Sample Type:	Soil
1708436-48	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/28/2017 14:50
	Sampling Location:		Sampling Date:	
	Sampling Point:	6-W-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-49	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/28/2017 13:35
	Sampling Location:		Sample Depth:	
	Sampling Point:	7-O-A	Lab Matrix:	Solids
	Janipiniy Funt.	. 57.	Lau Wau IX.	Soil



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Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Laboratory	Client Sample Informati	on		
1708436-50	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/28/2017 13:43
	Sampling Location:		Sample Depth:	
	Sampling Point:	7-O-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-51	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/28/2017 13:50
	Sampling Location:		Sample Depth:	
	Sampling Point:	7-W-A	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-52	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/28/2017 14:00
	Sampling Location:		Sample Depth:	
	. •	7-W-B	Lab Matrix;	Solids
	Sampling Point:	/-VV-D		Soil
	Sampled By:		Sample Type:	J011
1708436-53	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/28/2017 12:51
	Sampling Location:		Sample Depth:	
	Sampling Point:	8-O-A	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-54	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/28/2017 12:56
	Sampling Location:		Sample Depth:	
	Sampling Point:	8-O-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-55	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/28/2017 13:05
	Sampling Location:		Sample Depth:	
	Sampling Point:	8-W-A	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1709 <i>1</i> 26 E6	000 N			00/00/0047 00:00
1708436-56	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/28/2017 13:16
	Sampling Location:		Sample Depth:	
	Sampling Point:	8-W-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil



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Reported: 04/14/2017 10:38
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Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284 Project Manager: Matt Pollock

Laboratory	Client Sample Informati	on		
1708436-57	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/28/2017 15:15
	Sampling Location:		Sample Depth:	
	Sampling Point:	9-O-A	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-58	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/28/2017 15:20
	Sampling Location:		Sample Depth:	
	Sampling Point:	9-O-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-59	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/28/2017 15:30
	Sampling Location:		Sample Depth:	
	Sampling Point:	9-W-A	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-60	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/28/2017 15:35
	•		Sample Depth:	
	Sampling Location:	9-W-B	·	Solids
	Sampling Point:	9-44-6	Lab Matrix:	Soil
	Sampled By:		Sample Type:	3011
1708436-61	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/28/2017 11:15
	Sampling Location:		Sample Depth:	
	Sampling Point:	10-O-A	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-62	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/28/2017 11:20
	Sampling Location:		Sample Depth:	
	Sampling Point:	10-O-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-63	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/28/2017 11:29
	Sampling Location:		Sample Depth:	
	Sampling Point:	10-W-A	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil



Project Number: 15284
Project Manager: Matt Pollock

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Laboratory	Client Sample Informati	on		
1708436-64	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/28/2017 11:37
	Sampling Location:		Sample Depth:	
	Sampling Point:	10-W-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-65	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/28/2017 09:08
	Sampling Location:		Sample Depth:	
		11-O-A		Solids
	Sampling Point: Sampled By:		Lab Matrix: Sample Type:	Soil
1708436-66	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/28/2017 09:19
	Sampling Location:		Sample Depth:	
	Sampling Point:	11-O-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-67	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/28/2017 09:26
	Sampling Location:		Sample Depth:	
	Sampling Point:	11-W-A	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-68				00/00/0047 00:00
1700430-00	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/28/2017 09:42
	Sampling Location:		Sample Depth:	
	Sampling Point:	11-W-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-69	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/28/2017 10:18
	Sampling Location:		Sample Depth:	
	Sampling Point:	12-O-A	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil
1708436-70	COC Number:		Receive Date:	03/30/2017 22:30
	Project Number:		Sampling Date:	03/28/2017 10:22
	Sampling Location:	 12 O B	Sample Depth:	 Colido
	Sampling Point:	12-O-B	Lab Matrix:	Solids
	Sampled By:		Sample Type:	Soil



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Los Gatos, CA 95032

Reported: 04/14/2017 10:38

Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Laboratory	Client Sample Informati	on			
1708436-71	COC Number:		Receive Date:	03/30/2017 22:30)
	Project Number:		Sampling Date:	03/28/2017 10:38	3
	Sampling Location:		Sample Depth:		
	Sampling Point:	12-W-A	Lab Matrix:	Solids	
	Sampled By:		Sample Type:	Soil	
1708436-72	COC Number:		Receive Date:	03/30/2017 22:30)
	Project Number:		Sampling Date:	03/28/2017 10:45	5
	Sampling Location:		Sample Depth:		
	Sampling Point:	12-W-B	Lab Matrix:	Solids	
	Sampled By:		Sample Type:	Soil	
1708436-73	COC Number:		Receive Date:	03/30/2017 22:30)
	Project Number:		Sampling Date:	03/30/2017 00:00	
	Sampling Location:		Sample Depth:		
	Sampling Point:	Travel Blank	Lab Matrix:	Water	
	Sampled By:		Sample Type:	Backfill	

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID:	1708436-01	Client Sample	Name:	Composite	e 1-O-A,1-C)-В, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Aldrin		ND	mg/kg	0.00058	0.000063	EPA-8081A	ND		1
alpha-BHC		ND	mg/kg	0.00058	0.000074	EPA-8081A	ND		1
beta-BHC		ND	mg/kg	0.00058	0.000082	EPA-8081A	ND		1
delta-BHC		ND	mg/kg	0.00058	0.000068	EPA-8081A	ND		1
gamma-BHC (Lindane)		ND	mg/kg	0.00058	0.000039	EPA-8081A	ND		1
Chlordane (Technical)		ND	mg/kg	0.058	0.0017	EPA-8081A	ND		1
4,4'-DDD		ND	mg/kg	0.00058	0.000098	EPA-8081A	ND		1
4,4'-DDE		ND	mg/kg	0.00058	0.000096	EPA-8081A	ND		1
4,4'-DDT		ND	mg/kg	0.00058	0.000090	EPA-8081A	ND		1
Dieldrin		ND	mg/kg	0.00058	0.000081	EPA-8081A	ND		1
Endosulfan I		ND	mg/kg	0.00058	0.00010	EPA-8081A	ND		1
Endosulfan II		ND	mg/kg	0.00058	0.00013	EPA-8081A	ND		1
Endosulfan sulfate		ND	mg/kg	0.00058	0.00011	EPA-8081A	ND		1
Endrin		ND	mg/kg	0.00058	0.00010	EPA-8081A	ND		1
Endrin aldehyde		ND	mg/kg	0.00058	0.00011	EPA-8081A	ND		1
Heptachlor		ND	mg/kg	0.00058	0.000066	EPA-8081A	ND		1
Heptachlor epoxide		ND	mg/kg	0.00058	0.000090	EPA-8081A	ND		1
Methoxychlor		ND	mg/kg	0.00058	0.00013	EPA-8081A	ND		1
Toxaphene		ND	mg/kg	0.058	0.0015	EPA-8081A	ND		1
TCMX (Surrogate)		58.8	%	20 - 130 (LC	L - UCL)	EPA-8081A			1
Decachlorobiphenyl (Su	rrogate)	55.4	%	40 - 130 (LC	L - UCL)	EPA-8081A			1

Run							QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8081A	04/05/17	04/06/17 16:41	HKS	GC-17	1	B[D0815	

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H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

PCB Analysis (EPA Method 8082)

BCL Sample ID:	1708436-01	Client Sample	Name:	Composite	e 1-O-A,1-0	O-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
PCB-1016		ND	mg/kg	0.012	0.0045	EPA-8082	ND		1
PCB-1221		ND	mg/kg	0.012	0.0083	EPA-8082	ND		1
PCB-1232		ND	mg/kg	0.012	0.0085	EPA-8082	ND		1
PCB-1242		ND	mg/kg	0.012	0.0048	EPA-8082	ND		1
PCB-1248		ND	mg/kg	0.012	0.0081	EPA-8082	ND		1
PCB-1254		ND	mg/kg	0.012	0.0037	EPA-8082	ND		1
PCB-1260		ND	mg/kg	0.012	0.0033	EPA-8082	ND		1
Total PCB's (Summatio	n)	ND	mg/kg	0.012	0.0058	EPA-8082	ND		1
Decachlorobiphenyl (Su	ırrogate)	71.7	%	40 - 120 (LC	L - UCL)	EPA-8082			1

	Run						QC		
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	EPA-8082	04/05/17	04/06/17 08:52	HKS	GC-15	1.017	B[D0798		

Project Number: 15284
Project Manager: Matt Pollock

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Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

BCL Sample ID:	1708436-01	Client Sample	Name:	Composite	e 1-O-A,1-0	O-B, 3/30/2017 12	2:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab	Dun#
Acenaphthene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND	Quals	Run # 1
Acenaphthylene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
Anthracene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
Benzo[a]anthracene		0.0018	mg/kg	0.0035	0.0015	EPA-8270C-SIM	ND	J	1
Benzo[b]fluoranthene		0.0052	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
Benzo[k]fluoranthene		0.0022	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND	J	1
Benzo[a]pyrene		0.0041	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
Benzo[g,h,i]perylene		0.0041	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
Chrysene		0.0015	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND	J	1
Dibenzo[a,h]anthracene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
Fluoranthene		0.0048	mg/kg	0.0035	0.0013	EPA-8270C-SIM	ND		1
Fluorene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
ndeno[1,2,3-cd]pyrene		0.0037	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
Naphthalene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
Phenanthrene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
Pyrene		0.0059	mg/kg	0.0035	0.0018	EPA-8270C-SIM	ND		1
Benzo[e]pyrene		ND	mg/kg	0.0058	0.0023	EPA-8270C-SIM	ND		1
1,1-Biphenyl		ND	mg/kg	0.0058	0.0023	EPA-8270C-SIM	ND		1
2,6-Dimethylnaphthalene		ND	mg/kg	0.0058	0.0023	EPA-8270C-SIM	ND		1
1-Methylnaphthalene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
2-Methylnaphthalene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
2-Methylphenanthrene		ND	mg/kg	0.0058	0.0023	EPA-8270C-SIM	ND		1
3-Methylphenanthrene		ND	mg/kg	0.0058	0.0023	EPA-8270C-SIM	ND		1
Perylene		ND	mg/kg	0.0058	0.0023	EPA-8270C-SIM	ND		1
2,3,5-Trimethylnaphthalen	e	ND	mg/kg	0.0058	0.0023	EPA-8270C-SIM	ND		1
Total Low (MW) PAHs		ND	mg/kg	0.0058	0.0023	EPA-8270C-SIM	ND		1
Total High (MW) PAHs		0.033	mg/kg	0.0058	0.0023	EPA-8270C-SIM	ND		1
Total PAHs		0.033	mg/kg	0.0058	0.0023	EPA-8270C-SIM	ND		1
Nitrobenzene-d5 (Surroga	te)	80.0	%	30 - 110 (LC	L - UCL)	EPA-8270C-SIM			1
2-Fluorobiphenyl (Surroga	te)	75.2	%	40 - 120 (LC	L - UCL)	EPA-8270C-SIM			1
p-Terphenyl-d14 (Surroga	te)	73.7	%	30 - 120 (LC	L - UCL)	EPA-8270C-SIM			1



Reported: 04/14/2017 10:38

Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

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Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

BCL Sample ID): 1708436-01	Client Sar	mple Name:	Composite 1-O-A,1-O-B, 3/30/2017 12:00:00AM				
Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-8270C-SIM	04/05/17	04/11/17 15:41	1 EO1	MS-B7	0.960	B[D0904	

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38

Project: Alameda Point
roject Number: 15284

Project Number: 15284
Project Manager: Matt Pollock

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-01	Client Sample	Name:	Composite	e 1-O-A,1-0	O-B, 3/30/2017	12:00:00AM			
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#	
Gasoline Range Organ	nics (C4 - C12)	ND	mg/kg	1.2	0.32	EPA-8015B	ND		1	
a,a,a-Trifluorotoluene	FID Surrogate)	118	%	70 - 130 (LC	L - UCL)	EPA-8015B			1	

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	04/04/17	04/04/17 10:38	AKM	GC-V8	1	B[D0037	

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-01	Client Sample	Name:	Composite	e 1-O-A,1-0	O-B, 3/30/2017 12	2:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Light Naptha		ND	mg/kg	58	23	EPA-8015B/FFP	ND		1
TPH - Aviation Gas		ND	mg/kg	58	23	EPA-8015B/FFP	ND		1
TPH - Stoddard Solvent		ND	mg/kg	23	5.8	EPA-8015B/FFP	ND		1
TPH - Heavy Naptha		ND	mg/kg	12	5.8	EPA-8015B/FFP	ND		1
TPH - Gasoline		ND	mg/kg	23	5.8	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP4)		ND	mg/kg	12	5.8	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP5)		ND	mg/kg	12	5.3	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP8)		ND	mg/kg	12	5.8	EPA-8015B/FFP	ND		1
TPH - Kerosene		ND	mg/kg	12	1.6	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)		ND	mg/kg	12	1.4	EPA-8015B/FFP	ND		1
TPH - Fuel Oil #6		ND	mg/kg	12	5.8	EPA-8015B/FFP	ND		1
TPH - Crude Oil		ND	mg/kg	23	3.2	EPA-8015B/FFP	ND		1
TPH - Hydraulic Oil / Mot	or Oil	ND	mg/kg	23	7.5	EPA-8015B/FFP	ND		1
TPH - WD-40		ND	mg/kg	12	5.8	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)		104	%	30 - 130 (LC	L - UCL)	EPA-8015B/FFP			1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B/FFP	04/05/17	04/06/17 11:05	AS1	GC-2	1.007	B[D0817	

Reported: 04/14/2017 10:38

Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Chemical Analysis

BCL Sample ID:	1708436-01	Client Sample	Name:	Composite	e 1-O-A,1-0	O-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Solids		100	%	0.06	0.06	SM-2540G			1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	SM-2540G	04/06/17	04/06/17 08:30	DRC	MANUAL	1	B[D0990	

H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284
Project Manager: Matt Pollock

Total Concentrations (TTLC)

BCL Sample ID:	1708436-01	Client Sample	e Name:	Composit	e 1-O-A,1-	O-B, 3/30/2017 1	2:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Arsenic		1.3	mg/kg	0.58	0.20	EPA-6020	ND		1
Cadmium		0.091	mg/kg	0.29	0.055	EPA-6020	ND	J	2
Chromium		25	mg/kg	0.86	0.29	EPA-6020	ND		2
Copper		4.7	mg/kg	0.58	0.11	EPA-6020	ND		1
Lead		2.0	mg/kg	0.29	0.14	EPA-6020	ND		1
Mercury		ND	mg/kg	0.18	0.022	EPA-7471A	ND		3
Nickel		24	mg/kg	0.58	0.13	EPA-6020	0.34		1
Selenium		ND	mg/kg	0.58	0.13	EPA-6020	ND		2
Silver		ND	mg/kg	0.29	0.059	EPA-6020	ND		1
Zinc		15	mg/kg	1.5	0.58	EPA-6020	0.55		1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6020	04/05/17	04/08/17 04:25	ARD	PE-EL2	0.990	B[D0341	
2	EPA-6020	04/05/17	04/10/17 16:59	GPD	PE-EL2	0.990	B[D0341	
3	EPA-7471A	04/04/17	04/04/17 11:58	MEV	CETAC2	0.962	B[D0146	

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID:	1708436-02	Client Sample	Name:	Composite	e 1-W-A,1-\	V-B, 3/30/2017	7 12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Aldrin		ND	mg/kg	0.00062	0.000068	EPA-8081A	ND		1
alpha-BHC		ND	mg/kg	0.00062	0.000079	EPA-8081A	ND		1
beta-BHC		ND	mg/kg	0.00062	0.000088	EPA-8081A	ND		1
delta-BHC		ND	mg/kg	0.00062	0.000073	EPA-8081A	ND		1
gamma-BHC (Lindane)		ND	mg/kg	0.00062	0.000042	EPA-8081A	ND		1
Chlordane (Technical)		ND	mg/kg	0.062	0.0019	EPA-8081A	ND		1
4,4'-DDD		ND	mg/kg	0.00062	0.00011	EPA-8081A	ND		1
4,4'-DDE		ND	mg/kg	0.00062	0.00010	EPA-8081A	ND		1
4,4'-DDT		ND	mg/kg	0.00062	0.000096	EPA-8081A	ND		1
Dieldrin		ND	mg/kg	0.00062	0.000087	EPA-8081A	ND		1
Endosulfan I		ND	mg/kg	0.00062	0.00011	EPA-8081A	ND		1
Endosulfan II		ND	mg/kg	0.00062	0.00014	EPA-8081A	ND		1
Endosulfan sulfate		ND	mg/kg	0.00062	0.00012	EPA-8081A	ND		1
Endrin		ND	mg/kg	0.00062	0.00011	EPA-8081A	ND		1
Endrin aldehyde		ND	mg/kg	0.00062	0.00012	EPA-8081A	ND		1
Heptachlor		ND	mg/kg	0.00062	0.000070	EPA-8081A	ND		1
Heptachlor epoxide		ND	mg/kg	0.00062	0.000096	EPA-8081A	ND		1
Methoxychlor		ND	mg/kg	0.00062	0.00014	EPA-8081A	ND		1
Toxaphene		ND	mg/kg	0.062	0.0016	EPA-8081A	ND		1
TCMX (Surrogate)		39.3	%	20 - 130 (LC	L - UCL)	EPA-8081A			1
Decachlorobiphenyl (Sur	rogate)	34.8	%	40 - 130 (LC	L - UCL)	EPA-8081A		S09	1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8081A	04/05/17	04/06/17 16:56	HKS	GC-17	1.014	B[D0815	

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

PCB Analysis (EPA Method 8082)

BCL Sample ID:	1708436-02	Client Sample	Name:	Composite	e 1-W-A,1-	W-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
PCB-1016		ND	mg/kg	0.012	0.0048	EPA-8082	ND		1
PCB-1221		ND	mg/kg	0.012	0.0089	EPA-8082	ND		1
PCB-1232		ND	mg/kg	0.012	0.0092	EPA-8082	ND		1
PCB-1242		ND	mg/kg	0.012	0.0052	EPA-8082	ND		1
PCB-1248		ND	mg/kg	0.012	0.0087	EPA-8082	ND		1
PCB-1254		ND	mg/kg	0.012	0.0040	EPA-8082	ND		1
PCB-1260		ND	mg/kg	0.012	0.0036	EPA-8082	ND		1
Total PCB's (Summatio	n)	ND	mg/kg	0.012	0.0062	EPA-8082	ND		1
Decachlorobiphenyl (Su	ırrogate)	38.3	%	40 - 120 (LC	L - UCL)	EPA-8082		S09	1

			Run		QC			
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8082	04/05/17	04/06/17 09:02	HKS	GC-15	1.007	B[D0798	

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

BCL Sample ID:	1708436-02	Client Sample	Name:	: Composite 1-W-A,1-W-B, 3/30/2017 12:00:00AM					
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab	Pun#
Acenaphthene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND	Quals	Run # 1
Acenaphthylene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Anthracene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Benzo[a]anthracene		ND	mg/kg	0.0037	0.0016	EPA-8270C-SIM	ND		1
Benzo[b]fluoranthene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Benzo[k]fluoranthene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Benzo[a]pyrene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Benzo[g,h,i]perylene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Chrysene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Dibenzo[a,h]anthracene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Fluoranthene		0.0021	mg/kg	0.0037	0.0014	EPA-8270C-SIM	ND	J	1
Fluorene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Indeno[1,2,3-cd]pyrene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Naphthalene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Phenanthrene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Pyrene		ND	mg/kg	0.0037	0.0020	EPA-8270C-SIM	ND		1
Benzo[e]pyrene		ND	mg/kg	0.0062	0.0025	EPA-8270C-SIM	ND		1
1,1-Biphenyl		ND	mg/kg	0.0062	0.0025	EPA-8270C-SIM	ND		1
2,6-Dimethylnaphthalene		ND	mg/kg	0.0062	0.0025	EPA-8270C-SIM	ND		1
1-Methylnaphthalene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
2-Methylnaphthalene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
2-Methylphenanthrene		ND	mg/kg	0.0062	0.0025	EPA-8270C-SIM	ND		1
3-Methylphenanthrene		ND	mg/kg	0.0062	0.0025	EPA-8270C-SIM	ND		1
Perylene		ND	mg/kg	0.0062	0.0025	EPA-8270C-SIM	ND		1
2,3,5-Trimethylnaphthalen	e	ND	mg/kg	0.0062	0.0025	EPA-8270C-SIM	ND		1
Total Low (MW) PAHs		ND	mg/kg	0.0062	0.0025	EPA-8270C-SIM	ND		1
Total High (MW) PAHs		ND	mg/kg	0.0062	0.0025	EPA-8270C-SIM	ND		1
Total PAHs		ND	mg/kg	0.0062	0.0025	EPA-8270C-SIM	ND		1
Nitrobenzene-d5 (Surroga	te)	55.0	%	30 - 110 (LC	L - UCL)	EPA-8270C-SIM			1
2-Fluorobiphenyl (Surroga	te)	48.7	%	40 - 120 (LC	L - UCL)	EPA-8270C-SIM			1
p-Terphenyl-d14 (Surroga	te)	53.0	%	30 - 120 (LC	L - UCL)	EPA-8270C-SIM			1



Reported: 04/14/2017 10:38

Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

BCL Sample ID): 1708436-02	Client Sar	mple Name:	Composite 1-W-A,1-W-B, 3/30/2017 12:00:00AM						
Run#	Method	Prep Date	Run Date/Time	Analyst						
1	EPA-8270C-SIM	04/05/17	04/11/17 16:06	6 E01	MS-B7	1.003	B[D0904			

H.T. Harvey & Associates 983 University Avenue, Building D

Los Gatos, CA 95032

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284

Project Manager: Matt Pollock

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-02	Client Sample	ent Sample Name: Composite 1-W-A,1-W-B, 3/30/2017 12:00:00AM							
Comptituent		Dry Basis	11	DOL	MDI	Madhad	MB	Lab	D #	
Constituent		Result	Units	PQL	MDL	Method	Bias	Quals	Run #	
Gasoline Range Organ	ics (C4 - C12)	ND	mg/kg	1.2	0.35	EPA-8015B	ND		1	
a,a,a-Trifluorotoluene (FID Surrogate)	128	%	70 - 130 (LC	L - UCL)	EPA-8015B			1	

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	04/04/17	04/04/17 10:59	AKM	GC-V8	1	B[D0037	

Project Number: 15284 Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-02	Client Sample	e Name:	Composit	Composite 1-W-A,1-W-B, 3/30/2017 12:00:00AM					
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #	
TPH - Light Naptha		ND	mg/kg	62	25	EPA-8015B/FFP	ND		1	
TPH - Aviation Gas		ND	mg/kg	62	25	EPA-8015B/FFP	ND		1	
TPH - Stoddard Solvent		ND	mg/kg	25	6.2	EPA-8015B/FFP	ND		1	
TPH - Heavy Naptha		ND	mg/kg	12	6.2	EPA-8015B/FFP	ND		1	
TPH - Gasoline		ND	mg/kg	25	6.2	EPA-8015B/FFP	ND		1	
TPH - Jet Fuel (JP4)		ND	mg/kg	12	6.2	EPA-8015B/FFP	ND		1	
TPH - Jet Fuel (JP5)		ND	mg/kg	12	5.7	EPA-8015B/FFP	ND		1	
TPH - Jet Fuel (JP8)		ND	mg/kg	12	6.2	EPA-8015B/FFP	ND		1	
TPH - Kerosene		ND	mg/kg	12	1.7	EPA-8015B/FFP	ND		1	
TPH - Diesel (FFP)		ND	mg/kg	12	1.5	EPA-8015B/FFP	ND		1	
TPH - Fuel Oil #6		ND	mg/kg	12	6.2	EPA-8015B/FFP	ND		1	
TPH - Crude Oil		ND	mg/kg	25	3.5	EPA-8015B/FFP	ND		1	
TPH - Hydraulic Oil / Mo	tor Oil	ND	mg/kg	25	8.0	EPA-8015B/FFP	ND		1	
TPH - WD-40		ND	mg/kg	12	6.2	EPA-8015B/FFP	ND		1	
Tetracosane (Surrogate)		104	%	30 - 130 (LC	L - UCL)	EPA-8015B/FFP			1	

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B/FFP	04/05/17	04/06/17 11:28	AS1	GC-2	0.984	B[D0817	

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H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Chemical Analysis

BCL Sample ID:	1708436-02	Client Sample	Name:						
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Solids		100	%	0.06	0.06	SM-2540G			1

			Run					
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	SM-2540G	04/06/17	04/06/17 08:30	DRC	MANUAL	1	B[D0990	

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Total Concentrations (TTLC)

BCL Sample ID:	1708436-02	Client Sample	Name:	Composit	e 1-W-A,1-	W-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Arsenic		1.3	mg/kg	0.62	0.21	EPA-6020	ND		1
Cadmium		0.11	mg/kg	0.31	0.059	EPA-6020	ND	J	2
Chromium		32	mg/kg	0.93	0.31	EPA-6020	ND		2
Copper		5.0	mg/kg	0.62	0.12	EPA-6020	ND		1
Lead		3.7	mg/kg	0.31	0.15	EPA-6020	ND		1
Mercury		ND	mg/kg	0.20	0.023	EPA-7471A	ND		3
Nickel		25	mg/kg	0.62	0.14	EPA-6020	0.34		1
Selenium		ND	mg/kg	0.62	0.14	EPA-6020	ND		2
Silver		ND	mg/kg	0.31	0.063	EPA-6020	ND		1
Zinc		16	mg/kg	1.6	0.62	EPA-6020	0.55		1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6020	04/05/17	04/08/17 04:29	ARD	PE-EL2	1	B[D0341	
2	EPA-6020	04/05/17	04/10/17 17:03	GPD	PE-EL2	1	B[D0341	
3	EPA-7471A	04/04/17	04/04/17 12:24	MEV	CETAC2	0.992	B[D0146	

H.T. Harvey & Associates

983 University Avenue, Building D

Reported: 04/14/2017 10:38
Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284 Project Manager: Matt Pollock

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID:	1708436-03	Client Sample	Name:	Composit	e 2-O-A,2-C	D-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Aldrin		ND	mg/kg	0.00058	0.000064	EPA-8081A	ND		1
alpha-BHC		ND	mg/kg	0.00058	0.000075	EPA-8081A	ND		1
beta-BHC		ND	mg/kg	0.00058	0.000083	EPA-8081A	ND		1
delta-BHC		ND	mg/kg	0.00058	0.000069	EPA-8081A	ND		1
gamma-BHC (Lindane)		ND	mg/kg	0.00058	0.000040	EPA-8081A	ND		1
Chlordane (Technical)		ND	mg/kg	0.058	0.0018	EPA-8081A	ND		1
4,4'-DDD		ND	mg/kg	0.00058	0.000099	EPA-8081A	ND		1
4,4'-DDE		ND	mg/kg	0.00058	0.000097	EPA-8081A	ND		1
4,4'-DDT		ND	mg/kg	0.00058	0.000091	EPA-8081A	ND		1
Dieldrin		ND	mg/kg	0.00058	0.000082	EPA-8081A	ND		1
Endosulfan I		ND	mg/kg	0.00058	0.00010	EPA-8081A	ND		1
Endosulfan II		ND	mg/kg	0.00058	0.00013	EPA-8081A	ND		1
Endosulfan sulfate		ND	mg/kg	0.00058	0.00012	EPA-8081A	ND		1
Endrin		ND	mg/kg	0.00058	0.00010	EPA-8081A	ND		1
Endrin aldehyde		ND	mg/kg	0.00058	0.00011	EPA-8081A	ND		1
Heptachlor		ND	mg/kg	0.00058	0.000067	EPA-8081A	ND		1
Heptachlor epoxide		ND	mg/kg	0.00058	0.000091	EPA-8081A	ND		1
Methoxychlor		ND	mg/kg	0.00058	0.00013	EPA-8081A	ND		1
Toxaphene		ND	mg/kg	0.058	0.0015	EPA-8081A	ND		1
TCMX (Surrogate)		55.2	%	20 - 130 (LC	CL - UCL)	EPA-8081A			1
Decachlorobiphenyl (Sur	rogate)	56.1	%	40 - 130 (LC	CL - UCL)	EPA-8081A			1

				QC				
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8081A	04/05/17	04/06/17 17:10	HKS	GC-17	1.014	B[D0815	

Project Number: 15284

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

PCB Analysis (EPA Method 8082)

BCL Sample ID:	Client Sample Name:		Composite 2-O-A,2-O-B, 3/30/2017 12:00:00AM						
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
PCB-1016		ND	mg/kg	0.012	0.0046	EPA-8082	ND		1
PCB-1221		ND	mg/kg	0.012	0.0084	EPA-8082	ND		1
PCB-1232		ND	mg/kg	0.012	0.0086	EPA-8082	ND		1
PCB-1242		ND	mg/kg	0.012	0.0049	EPA-8082	ND		1
PCB-1248		ND	mg/kg	0.012	0.0082	EPA-8082	ND		1
PCB-1254		ND	mg/kg	0.012	0.0037	EPA-8082	ND		1
PCB-1260		ND	mg/kg	0.012	0.0034	EPA-8082	ND		1
Total PCB's (Summatio	on)	ND	mg/kg	0.012	0.0058	EPA-8082	ND		1
Decachlorobiphenyl (Su	urrogate)	70.0	%	40 - 120 (LC	L - UCL)	EPA-8082			1

		Run					QC		
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	EPA-8082	04/05/17	04/06/17 09:13	HKS	GC-15	1.010	B[D0798		



Reported: 04/14/2017 10:38

Project Number: 15284 Project Manager: Matt Pollock

Project: Alameda Point

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

BCL Sample ID:	1708436-03	Client Sample	Name:	Composite	e 2-O-A,2-0	D-B, 3/30/2017 12	2:00:00AM		
Constituent		Dry Basis	Unito	PQL	MDL	Method	MB	Lab	Dun #
Acenaphthene		Result ND	Units mg/kg	0.0035	0.0012	EPA-8270C-SIM	Bias ND	Quals	Run # 1
Acenaphthylene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
Anthracene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
Benzo[a]anthracene		0.0019	mg/kg	0.0035	0.0015	EPA-8270C-SIM	ND	J	1
Benzo[b]fluoranthene		0.0050	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
Benzo[k]fluoranthene		0.0023	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND	J	1
Benzo[a]pyrene		0.0039	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
Benzo[g,h,i]perylene		0.0043	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
Chrysene		0.0016	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND	J	1
Dibenzo[a,h]anthracene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
Fluoranthene		0.0043	mg/kg	0.0035	0.0013	EPA-8270C-SIM	ND		1
Fluorene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
Indeno[1,2,3-cd]pyrene		0.0043	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
Naphthalene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
Phenanthrene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
Pyrene		0.0054	mg/kg	0.0035	0.0019	EPA-8270C-SIM	ND		1
Benzo[e]pyrene		ND	mg/kg	0.0058	0.0023	EPA-8270C-SIM	ND		1
1,1-Biphenyl		ND	mg/kg	0.0058	0.0023	EPA-8270C-SIM	ND		1
2,6-Dimethylnaphthalene		ND	mg/kg	0.0058	0.0023	EPA-8270C-SIM	ND		1
1-Methylnaphthalene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
2-Methylnaphthalene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
2-Methylphenanthrene		ND	mg/kg	0.0058	0.0023	EPA-8270C-SIM	ND		1
3-Methylphenanthrene		ND	mg/kg	0.0058	0.0023	EPA-8270C-SIM	ND		1
Perylene		ND	mg/kg	0.0058	0.0023	EPA-8270C-SIM	ND		1
2,3,5-Trimethylnaphthaler	ne	ND	mg/kg	0.0058	0.0023	EPA-8270C-SIM	ND		1
Total Low (MW) PAHs		ND	mg/kg	0.0058	0.0023	EPA-8270C-SIM	ND		1
Total High (MW) PAHs		0.033	mg/kg	0.0058	0.0023	EPA-8270C-SIM	ND		1
Total PAHs		0.033	mg/kg	0.0058	0.0023	EPA-8270C-SIM	ND		1
Nitrobenzene-d5 (Surroga	ite)	65.1	%	30 - 110 (LC	L - UCL)	EPA-8270C-SIM			1
2-Fluorobiphenyl (Surroga	ite)	61.1	%	40 - 120 (LC	L - UCL)	EPA-8270C-SIM			1
p-Terphenyl-d14 (Surroga	te)	59.9	%	30 - 120 (LC	L - UCL)	EPA-8270C-SIM			1



Reported: 04/14/2017 10:38

Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

BCL Sample ID): 1708436-03	Client Sar	mple Name:	Composite 2-O-A,2-O-B, 3/30/2017 12:00:00AM					
Run#	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID		
1	EPA-8270C-SIM	04/05/17	04/11/17 16:30) EO1	MS-B7	0.997	B[D0904		

H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284 Project Manager: Matt Pollock

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-03	Client Sample	Name:	Composite	e 2-O-A,2-0	O-B, 3/30/2017	12:00:00AM			
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #	
Gasoline Range Organ	nics (C4 - C12)	ND	mg/kg	1.2	0.33	EPA-8015B	ND		1	
a,a,a-Trifluorotoluene	(FID Surrogate)	128	%	70 - 130 (LC	L - UCL)	EPA-8015B			1	

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	04/04/17	04/04/17 11:20	AKM	GC-V8	1	B[D0037	

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-03	Client Sample	Name:	Composite	e 2-O-A,2-	O-B, 3/30/2017 12	2:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Light Naptha		ND	mg/kg	58	23	EPA-8015B/FFP	ND		1
TPH - Aviation Gas		ND	mg/kg	58	23	EPA-8015B/FFP	ND		1
TPH - Stoddard Solvent		ND	mg/kg	23	5.8	EPA-8015B/FFP	ND		1
TPH - Heavy Naptha		ND	mg/kg	12	5.8	EPA-8015B/FFP	ND		1
TPH - Gasoline		ND	mg/kg	23	5.8	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP4)		ND	mg/kg	12	5.8	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP5)		ND	mg/kg	12	5.4	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP8)		ND	mg/kg	12	5.8	EPA-8015B/FFP	ND		1
TPH - Kerosene		ND	mg/kg	12	1.6	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)		ND	mg/kg	12	1.4	EPA-8015B/FFP	ND		1
TPH - Fuel Oil #6		ND	mg/kg	12	5.8	EPA-8015B/FFP	ND		1
TPH - Crude Oil		ND	mg/kg	23	3.3	EPA-8015B/FFP	ND		1
TPH - Hydraulic Oil / Moto	or Oil	ND	mg/kg	23	7.6	EPA-8015B/FFP	ND		1
TPH - WD-40		ND	mg/kg	12	5.8	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)		103	%	30 - 130 (LC	L - UCL)	EPA-8015B/FFP			1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B/FFP	04/05/17	04/06/17 11:51	AS1	GC-2	1.003	B[D0817	

H.T. Harvey & Associates

Los Gatos, CA 95032

983 University Avenue, Building D

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Project Manage

Chemical Analysis

BCL Sample ID:	1708436-03	Client Sample	Name:	Composite 2-O-A,2-O-B, 3/30/2017 12:00:00AM						
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#	
Solids		100	%	0.06	0.06	SM-2540G			1	

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	SM-2540G	04/06/17	04/06/17 08:30	DRC	MANUAL	1	B[D0990	

H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284
Project Manager: Matt Pollock

Total Concentrations (TTLC)

BCL Sample ID:	1708436-03	Client Sample	Name:	Composit	e 2-O-A,2-0	O-B, 3/30/2017 1	2:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Arsenic		1.5	mg/kg	0.58	0.20	EPA-6020	ND		1
Cadmium		0.15	mg/kg	0.29	0.056	EPA-6020	ND	J	2
Chromium		28	mg/kg	0.88	0.29	EPA-6020	ND		2
Copper		5.2	mg/kg	0.58	0.12	EPA-6020	ND		1
Lead		2.4	mg/kg	0.29	0.14	EPA-6020	ND		1
Mercury		ND	mg/kg	0.19	0.022	EPA-7471A	ND		3
Nickel		25	mg/kg	0.58	0.13	EPA-6020	0.32		1
Selenium		0.13	mg/kg	0.58	0.13	EPA-6020	ND	J	2
Silver		ND	mg/kg	0.29	0.060	EPA-6020	ND		1
Zinc		16	mg/kg	1.5	0.58	EPA-6020	0.52		1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6020	04/05/17	04/08/17 04:32	ARD	PE-EL2	0.943	B[D0341	
2	EPA-6020	04/05/17	04/10/17 17:06	GPD	PE-EL2	0.943	B[D0341	
3	EPA-7471A	04/04/17	04/04/17 12:26	MEV	CETAC2	0.962	B[D0146	

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID:	1708436-04	Client Sample	Name:	Composite 2-W-A,2-W-B, 3/30/2017 12:00			7 12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Aldrin		ND	mg/kg	0.00059	0.000064	EPA-8081A	ND		1
alpha-BHC		ND	mg/kg	0.00059	0.000075	EPA-8081A	ND		1
beta-BHC		ND	mg/kg	0.00059	0.000083	EPA-8081A	ND		1
delta-BHC		ND	mg/kg	0.00059	0.000069	EPA-8081A	ND		1
gamma-BHC (Lindane)		ND	mg/kg	0.00059	0.000040	EPA-8081A	ND		1
Chlordane (Technical)		ND	mg/kg	0.059	0.0018	EPA-8081A	ND		1
4,4'-DDD		ND	mg/kg	0.00059	0.00010	EPA-8081A	ND		1
4,4'-DDE		ND	mg/kg	0.00059	0.000097	EPA-8081A	ND		1
4,4'-DDT		ND	mg/kg	0.00059	0.000091	EPA-8081A	ND		1
Dieldrin		ND	mg/kg	0.00059	0.000082	EPA-8081A	ND		1
Endosulfan I		ND	mg/kg	0.00059	0.00010	EPA-8081A	ND		1
Endosulfan II		ND	mg/kg	0.00059	0.00013	EPA-8081A	ND		1
Endosulfan sulfate		ND	mg/kg	0.00059	0.00012	EPA-8081A	ND		1
Endrin		ND	mg/kg	0.00059	0.00010	EPA-8081A	ND		1
Endrin aldehyde		ND	mg/kg	0.00059	0.00011	EPA-8081A	ND		1
Heptachlor		ND	mg/kg	0.00059	0.000067	EPA-8081A	ND		1
Heptachlor epoxide		ND	mg/kg	0.00059	0.000091	EPA-8081A	ND		1
Methoxychlor		ND	mg/kg	0.00059	0.00013	EPA-8081A	ND		1
Toxaphene		ND	mg/kg	0.059	0.0015	EPA-8081A	ND		1
TCMX (Surrogate)		43.9	%	20 - 130 (LC	L - UCL)	EPA-8081A			1
Decachlorobiphenyl (Sur	rogate)	42.2	%	40 - 130 (LC	L - UCL)	EPA-8081A			1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8081A	04/05/17	04/06/17 17:25	HKS	GC-17	1.007	B[D0815	

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

PCB Analysis (EPA Method 8082)

BCL Sample ID:	1708436-04	Client Sample	Name:	Composite	Composite 2-W-A,2-W-B, 3/30/2017 12:00:00AM							
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#			
PCB-1016		ND	mg/kg	0.012	0.0046	EPA-8082	ND		1			
PCB-1221		ND	mg/kg	0.012	0.0084	EPA-8082	ND		1			
PCB-1232		ND	mg/kg	0.012	0.0087	EPA-8082	ND		1			
PCB-1242		ND	mg/kg	0.012	0.0049	EPA-8082	ND		1			
PCB-1248		ND	mg/kg	0.012	0.0082	EPA-8082	ND		1			
PCB-1254		ND	mg/kg	0.012	0.0038	EPA-8082	ND		1			
PCB-1260		ND	mg/kg	0.012	0.0034	EPA-8082	ND		1			
Total PCB's (Summatio	n)	ND	mg/kg	0.012	0.0059	EPA-8082	ND		1			
Decachlorobiphenyl (Su	ırrogate)	28.3	%	40 - 120 (LC	L - UCL)	EPA-8082		S09	1			

			Run					
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8082	04/05/17	04/06/17 09:24	HKS	GC-15	1.010	B[D0798	



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H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

BCL Sample ID:	1708436-04	Client Sample	Name:	ne: Composite 2-W-A,2-W-B, 3/30/2017 12:00:00AM						
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab	Run #	
Acenaphthene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND ND	Quals	1	
Acenaphthylene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1	
Anthracene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1	
Benzo[a]anthracene		0.0023	mg/kg	0.0035	0.0015	EPA-8270C-SIM	ND	J	1	
Benzo[b]fluoranthene		0.0049	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1	
Benzo[k]fluoranthene		0.0027	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND	J	1	
Benzo[a]pyrene		0.0042	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1	
Benzo[g,h,i]perylene		0.0042	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1	
Chrysene		0.0015	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND	J	1	
Dibenzo[a,h]anthracene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1	
Fluoranthene		0.0046	mg/kg	0.0035	0.0013	EPA-8270C-SIM	ND		1	
Fluorene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1	
Indeno[1,2,3-cd]pyrene		0.0038	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1	
Naphthalene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1	
Phenanthrene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1	
Pyrene		0.0065	mg/kg	0.0035	0.0019	EPA-8270C-SIM	ND		1	
Benzo[e]pyrene		ND	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1	
1,1-Biphenyl		ND	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1	
2,6-Dimethylnaphthalene)	ND	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1	
1-Methylnaphthalene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1	
2-Methylnaphthalene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1	
2-Methylphenanthrene		ND	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1	
3-Methylphenanthrene		ND	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1	
Perylene		ND	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1	
2,3,5-Trimethylnaphthale	ene	ND	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1	
Total Low (MW) PAHs		ND	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1	
Total High (MW) PAHs		0.035	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1	
Total PAHs		0.035	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1	
Nitrobenzene-d5 (Surrog	jate)	74.7	%	30 - 110 (LC	L - UCL)	EPA-8270C-SIM			1	
2-Fluorobiphenyl (Surrog	gate)	66.1	%	40 - 120 (LC	L - UCL)	EPA-8270C-SIM			1	
p-Terphenyl-d14 (Surrog	ate)	63.6	%	30 - 120 (LC	L - UCL)	EPA-8270C-SIM			1	



Reported: 04/14/2017 10:38

Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

BCL Sample II) : 1708436-04	Client Sar	mple Name:	Composite 2-\	N-A,2-W-B, 3/30):00AM		
Run #	Method	Prep Date	Run rep Date Date/Time		Instrument	Dilution	QC Batch ID	
1	EPA-8270C-SIM	04/05/17	04/11/17 16:54	E01	MS-B7	0.974	B[D0904	

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1708436-04 Client Sample Name:				Composite	Composite 2-W-A,2-W-B, 3/30/2017 12:00:00AM						
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#		
Gasoline Range Organ	nics (C4 - C12)	ND	mg/kg	1.2	0.33	EPA-8015B	ND	Quais	1		
a,a,a-Trifluorotoluene	(FID Surrogate)	128	%	70 - 130 (LC	L - UCL)	EPA-8015B			1		

			Run					
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	04/05/17	04/05/17 14:12	AKM	GC-V8	1	B[D0037	

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-04	Client Sample	e Name:	Composit	e 2-W-A,2-	W-B, 3/30/2017 1	2:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Light Naptha		ND	mg/kg	59	23	EPA-8015B/FFP	ND		1
TPH - Aviation Gas		ND	mg/kg	59	23	EPA-8015B/FFP	ND		1
TPH - Stoddard Solvent		ND	mg/kg	23	5.9	EPA-8015B/FFP	ND		1
TPH - Heavy Naptha		ND	mg/kg	12	5.9	EPA-8015B/FFP	ND		1
TPH - Gasoline		ND	mg/kg	23	5.9	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP4)		ND	mg/kg	12	5.9	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP5)		ND	mg/kg	12	5.4	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP8)		ND	mg/kg	12	5.9	EPA-8015B/FFP	ND		1
TPH - Kerosene		ND	mg/kg	12	1.6	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)		ND	mg/kg	12	1.4	EPA-8015B/FFP	ND		1
TPH - Fuel Oil #6		ND	mg/kg	12	5.9	EPA-8015B/FFP	ND		1
TPH - Crude Oil		ND	mg/kg	23	3.3	EPA-8015B/FFP	ND		1
TPH - Hydraulic Oil / Moto	or Oil	ND	mg/kg	23	7.6	EPA-8015B/FFP	ND		1
TPH - WD-40		ND	mg/kg	12	5.9	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)		96.5	%	30 - 130 (LC	L - UCL)	EPA-8015B/FFP			1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B/FFP	04/05/17	04/06/17 12:14	AS1	GC-2	1.003	B[D0817	

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Chemical Analysis

BCL Sample ID:	1708436-04	Client Sample	Name:	Composite	e 2-W-A,2-	W-B, 3/30/2017	7 12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Solids		100	%	0.06	0.06	SM-2540G			1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	SM-2540G	04/13/17	04/13/17 07:30	DRC	MANUAL	1	B[D1238	

Reported: 04/14/2017 10:38

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Total Concentrations (TTLC)

BCL Sample ID:	1708436-04	Client Sample	Name:	Composit	e 2-W-A,2-	W-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Arsenic		1.3	mg/kg	0.59	0.20	EPA-6020	ND		1
Cadmium		0.13	mg/kg	0.29	0.056	EPA-6020	ND	J	2
Chromium		27	mg/kg	0.88	0.29	EPA-6020	ND		2
Copper		5.4	mg/kg	0.59	0.12	EPA-6020	ND		1
Lead		2.4	mg/kg	0.29	0.14	EPA-6020	ND		1
Mercury		0.026	mg/kg	0.19	0.022	EPA-7471A	ND	J	3
Nickel		25	mg/kg	0.59	0.13	EPA-6020	0.33		1
Selenium		0.21	mg/kg	0.59	0.13	EPA-6020	ND	J	2
Silver		ND	mg/kg	0.29	0.060	EPA-6020	ND		1
Zinc		17	mg/kg	1.5	0.59	EPA-6020	0.53		1

			Run		_		QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6020	04/05/17	04/08/17 04:35	ARD	PE-EL2	0.971	B[D0341	
2	EPA-6020	04/05/17	04/10/17 17:10	GPD	PE-EL2	0.971	B[D0341	
3	EPA-7471A	04/04/17	04/04/17 12:28	MEV	CETAC2	1.008	B[D0146	

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID:	1708436-05	Client Sample	Name:	Composite	3-O-A,3-C	D-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Aldrin		ND	mg/kg	0.00060	0.000066	EPA-8081A	ND		1
alpha-BHC		ND	mg/kg	0.00060	0.000077	EPA-8081A	ND		1
beta-BHC		ND	mg/kg	0.00060	0.000085	EPA-8081A	ND		1
delta-BHC		ND	mg/kg	0.00060	0.000071	EPA-8081A	ND		1
gamma-BHC (Lindane)		ND	mg/kg	0.00060	0.000041	EPA-8081A	ND		1
Chlordane (Technical)		ND	mg/kg	0.060	0.0018	EPA-8081A	ND		1
4,4'-DDD		ND	mg/kg	0.00060	0.00010	EPA-8081A	ND		1
4,4'-DDE		ND	mg/kg	0.00060	0.000099	EPA-8081A	ND		1
4,4'-DDT		ND	mg/kg	0.00060	0.000093	EPA-8081A	ND		1
Dieldrin		ND	mg/kg	0.00060	0.000084	EPA-8081A	ND		1
Endosulfan I		ND	mg/kg	0.00060	0.00010	EPA-8081A	ND		1
Endosulfan II		ND	mg/kg	0.00060	0.00013	EPA-8081A	ND		1
Endosulfan sulfate		ND	mg/kg	0.00060	0.00012	EPA-8081A	ND		1
Endrin		ND	mg/kg	0.00060	0.00010	EPA-8081A	ND		1
Endrin aldehyde		ND	mg/kg	0.00060	0.00012	EPA-8081A	ND		1
Heptachlor		ND	mg/kg	0.00060	0.000068	EPA-8081A	ND		1
Heptachlor epoxide		ND	mg/kg	0.00060	0.000093	EPA-8081A	ND		1
Methoxychlor		ND	mg/kg	0.00060	0.00013	EPA-8081A	ND		1
Toxaphene		ND	mg/kg	0.060	0.0016	EPA-8081A	ND		1
TCMX (Surrogate)		43.5	%	20 - 130 (LCL	- UCL)	EPA-8081A			1
Decachlorobiphenyl (Sur	rogate)	33.1	%	40 - 130 (LCL	- UCL)	EPA-8081A		S09	1

			Run					
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8081A	04/05/17	04/06/17 17:39	HKS	GC-17	0.997	B[D0815	

Reported: 04/14/2017 10:38

Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

PCB Analysis (EPA Method 8082)

BCL Sample ID:	1708436-05	Client Sample	Name:	Composite	Composite 3-O-A,3-O-B, 3/30/2017 12:00:00AM							
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#			
PCB-1016		ND	mg/kg	0.012	0.0047	EPA-8082	ND		1			
PCB-1221		ND	mg/kg	0.012	0.0086	EPA-8082	ND		1			
PCB-1232		ND	mg/kg	0.012	0.0089	EPA-8082	ND		1			
PCB-1242		ND	mg/kg	0.012	0.0050	EPA-8082	ND		1			
PCB-1248		ND	mg/kg	0.012	0.0084	EPA-8082	ND		1			
PCB-1254		ND	mg/kg	0.012	0.0038	EPA-8082	ND		1			
PCB-1260		ND	mg/kg	0.012	0.0035	EPA-8082	ND		1			
Total PCB's (Summation)		ND	mg/kg	0.012	0.0060	EPA-8082	ND		1			
Decachlorobiphenyl (Surre	ogate)	43.3	%	40 - 120 (LC	L - UCL)	EPA-8082			1			

			Run		QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8082	04/05/17	04/06/17 09:34	HKS	GC-15	1.007	B[D0798	

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

BCL Sample ID:	1708436-05	Client Sample	Name:	Composite	e 3-O-A,3-0	D-B, 3/30/2017 12	2:00:00AM		
Constituent		Dry Basis	Unite	PQL	MDL	Method	MB	Lab	Bun #
Acenaphthene		Result ND	Units mg/kg	0.0036	0.0012	EPA-8270C-SIM	Bias ND	Quals	Run # 1
Acenaphthylene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Anthracene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Benzo[a]anthracene		0.0024	mg/kg	0.0036	0.0016	EPA-8270C-SIM	ND	J	1
Benzo[b]fluoranthene		0.0061	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Benzo[k]fluoranthene		0.0028	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND	J	1
Benzo[a]pyrene		0.0049	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Benzo[g,h,i]perylene		0.0053	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Chrysene		0.0024	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND	J	1
Dibenzo[a,h]anthracene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Fluoranthene		0.0053	mg/kg	0.0036	0.0013	EPA-8270C-SIM	ND		1
Fluorene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Indeno[1,2,3-cd]pyrene		0.0045	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Naphthalene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Phenanthrene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Pyrene		0.0073	mg/kg	0.0036	0.0019	EPA-8270C-SIM	ND		1
Benzo[e]pyrene		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1
1,1-Biphenyl		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1
2,6-Dimethylnaphthalene		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1
1-Methylnaphthalene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
2-Methylnaphthalene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
2-Methylphenanthrene		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1
3-Methylphenanthrene		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1
Perylene		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1
2,3,5-Trimethylnaphthaler	ne	ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1
Total Low (MW) PAHs		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1
Total High (MW) PAHs		0.043	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1
Total PAHs		0.043	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1
Nitrobenzene-d5 (Surroga	ate)	65.0	%	30 - 110 (LC	L - UCL)	EPA-8270C-SIM			1
2-Fluorobiphenyl (Surroga	ate)	51.2	%	40 - 120 (LC	L - UCL)	EPA-8270C-SIM			1
p-Terphenyl-d14 (Surroga	ite)	62.5	%	30 - 120 (LC	L - UCL)	EPA-8270C-SIM			1



Reported: 04/14/2017 10:38

Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

BCL Sample ID): 1708436-05	Client Sar	mple Name:	Composite 3-O-A,3-O-B, 3/30/2017 12:00:00AM						
Run#	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID			
1	EPA-8270C-SIM	04/05/17	04/11/17 17:19) EO1	MS-B7	1.014	B[D0904			

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-05	Client Sample	Name:	Composite	e 3-O-A,3-0	O-B, 3/30/2017				
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #	
Gasoline Range Organ	ics (C4 - C12)	ND	mg/kg	1.2	0.34	EPA-8015B	ND		1	
a,a,a-Trifluorotoluene (FID Surrogate)	125	%	70 - 130 (LC	L - UCL)	EPA-8015B			1	

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	04/05/17	04/05/17 14:54	AKM	GC-V8	1	B[D0037	

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-05	Client Sample	Name:	Composite	e 3-O-A,3-0				
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Light Naptha		ND	mg/kg	60	24	EPA-8015B/FFP	ND		1
TPH - Aviation Gas		ND	mg/kg	60	24	EPA-8015B/FFP	ND		1
TPH - Stoddard Solvent		ND	mg/kg	24	6.0	EPA-8015B/FFP	ND		1
TPH - Heavy Naptha		ND	mg/kg	12	6.0	EPA-8015B/FFP	ND		1
TPH - Gasoline		ND	mg/kg	24	6.0	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP4)		ND	mg/kg	12	6.0	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP5)		ND	mg/kg	12	5.5	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP8)		ND	mg/kg	12	6.0	EPA-8015B/FFP	ND		1
TPH - Kerosene		ND	mg/kg	12	1.7	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)		ND	mg/kg	12	1.4	EPA-8015B/FFP	ND		1
TPH - Fuel Oil #6		ND	mg/kg	12	6.0	EPA-8015B/FFP	ND		1
TPH - Crude Oil		ND	mg/kg	24	3.4	EPA-8015B/FFP	ND		1
TPH - Hydraulic Oil / Moto	r Oil	ND	mg/kg	24	7.8	EPA-8015B/FFP	ND		1
TPH - WD-40		ND	mg/kg	12	6.0	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)		98.8	%	30 - 130 (LC	L - UCL)	EPA-8015B/FFP			1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B/FFP	04/05/17	04/06/17 12:38	AS1	GC-2	0.987	B[D0817	

H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284
Project Manager: Matt Pollock

Chemical Analysis

BCL Sample ID:	1708436-05	Client Sample	nt Sample Name: Composite 3-O-A,3-O-B, 3/30/2017 12:00:00AM						
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Solids		100	%	0.06	0.06	SM-2540G			1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	SM-2540G	04/13/17	04/13/17 07:30	DRC	MANUAL	1	B[D1238	

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H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Total Concentrations (TTLC)

BCL Sample ID:	1708436-05	Client Sample	Name:	Composito	e 3-O-A,3-0	O-B, 3/30/2017 1	2:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Arsenic		1.3	mg/kg	0.60	0.20	EPA-6020	ND		1
Cadmium		0.12	mg/kg	0.30	0.057	EPA-6020	ND	J	2
Chromium		29	mg/kg	0.90	0.30	EPA-6020	ND		2
Copper		5.3	mg/kg	0.60	0.12	EPA-6020	ND		1
Lead		2.5	mg/kg	0.30	0.14	EPA-6020	ND		1
Mercury		ND	mg/kg	0.19	0.023	EPA-7471A	ND		3
Nickel		24	mg/kg	0.60	0.13	EPA-6020	0.34		1
Selenium		0.24	mg/kg	0.60	0.13	EPA-6020	ND	J	2
Silver		ND	mg/kg	0.30	0.061	EPA-6020	ND		1
Zinc		17	mg/kg	1.6	0.60	EPA-6020	0.55		1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6020	04/05/17	04/08/17 04:39	ARD	PE-EL2	0.990	B[D0341	
2	EPA-6020	04/05/17	04/10/17 17:14	GPD	PE-EL2	0.990	B[D0341	
3	EPA-7471A	04/04/17	04/04/17 12:30	MEV	CETAC2	1.008	B[D0146	

H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284 Project Manager: Matt Pollock

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID:	1708436-06	Client Sample	Name:	Composite	e 3-W-A,3-V	V-B, 3/30/2017	12:00:00AM	·	
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Aldrin		ND	mg/kg	0.00061	0.000067	EPA-8081A	ND		1
alpha-BHC		ND	mg/kg	0.00061	0.000078	EPA-8081A	ND		1
beta-BHC		ND	mg/kg	0.00061	0.000087	EPA-8081A	ND		1
delta-BHC		ND	mg/kg	0.00061	0.000072	EPA-8081A	ND		1
gamma-BHC (Lindane)		ND	mg/kg	0.00061	0.000042	EPA-8081A	ND		1
Chlordane (Technical)		ND	mg/kg	0.061	0.0018	EPA-8081A	ND		1
4,4'-DDD		ND	mg/kg	0.00061	0.00010	EPA-8081A	ND		1
4,4'-DDE		ND	mg/kg	0.00061	0.00010	EPA-8081A	ND		1
4,4'-DDT		ND	mg/kg	0.00061	0.000096	EPA-8081A	ND		1
Dieldrin		ND	mg/kg	0.00061	0.000086	EPA-8081A	ND		1
Endosulfan I		ND	mg/kg	0.00061	0.00011	EPA-8081A	ND		1
Endosulfan II		ND	mg/kg	0.00061	0.00013	EPA-8081A	ND		1
Endosulfan sulfate		ND	mg/kg	0.00061	0.00012	EPA-8081A	ND		1
Endrin		ND	mg/kg	0.00061	0.00011	EPA-8081A	ND		1
Endrin aldehyde		ND	mg/kg	0.00061	0.00012	EPA-8081A	ND		1
Heptachlor		ND	mg/kg	0.00061	0.000070	EPA-8081A	ND		1
Heptachlor epoxide		ND	mg/kg	0.00061	0.000096	EPA-8081A	ND		1
Methoxychlor		ND	mg/kg	0.00061	0.00013	EPA-8081A	ND		1
Toxaphene		ND	mg/kg	0.061	0.0016	EPA-8081A	ND		1
TCMX (Surrogate)		45.0	%	20 - 130 (LC	L - UCL)	EPA-8081A			1
Decachlorobiphenyl (Sur	rrogate)	39.9	%	40 - 130 (LC	L - UCL)	EPA-8081A		S09	1

Run							QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID			
1	EPA-8081A	04/05/17	04/06/17 18:52	HKS	GC-17	1.003	B[D0815			

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

PCB Analysis (EPA Method 8082)

BCL Sample ID:	1708436-06	Client Sample	Client Sample Name:			Composite 3-W-A,3-W-B, 3/30/2017 12:00:00AM						
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #			
PCB-1016		ND	mg/kg	0.012	0.0048	EPA-8082	ND		1			
PCB-1221		ND	mg/kg	0.012	0.0088	EPA-8082	ND		1			
PCB-1232		ND	mg/kg	0.012	0.0091	EPA-8082	ND		1			
PCB-1242		ND	mg/kg	0.012	0.0051	EPA-8082	ND		1			
PCB-1248		ND	mg/kg	0.012	0.0086	EPA-8082	ND		1			
PCB-1254		ND	mg/kg	0.012	0.0039	EPA-8082	ND		1			
PCB-1260		ND	mg/kg	0.012	0.0036	EPA-8082	ND		1			
Total PCB's (Summation	n)	ND	mg/kg	0.012	0.0061	EPA-8082	ND		1			
Decachlorobiphenyl (Su	rrogate)	21.7	%	40 - 120 (LC	L - UCL)	EPA-8082		S09	1			

			Run					
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8082	04/05/17	04/06/17 09:45	HKS	GC-15	1.007	B[D0798	



H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284
Project Manager: Matt Pollock

BCL Sample ID:	1708436-06	Client Sample	Name:	e: Composite 3-W-A,3-W-B, 3/30/2017 12:00:00AM					
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Acenaphthene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND	4 0000	1
Acenaphthylene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Anthracene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Benzo[a]anthracene		0.0020	mg/kg	0.0037	0.0016	EPA-8270C-SIM	ND	J	1
Benzo[b]fluoranthene		0.0051	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Benzo[k]fluoranthene		0.0020	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND	J	1
Benzo[a]pyrene		0.0043	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Benzo[g,h,i]perylene		0.0043	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Chrysene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Dibenzo[a,h]anthracene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Fluoranthene		0.0036	mg/kg	0.0037	0.0013	EPA-8270C-SIM	ND	J	1
Fluorene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Indeno[1,2,3-cd]pyrene		0.0040	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Naphthalene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Phenanthrene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Pyrene		0.0043	mg/kg	0.0037	0.0020	EPA-8270C-SIM	ND		1
Benzo[e]pyrene		ND	mg/kg	0.0061	0.0025	EPA-8270C-SIM	ND		1
1,1-Biphenyl		ND	mg/kg	0.0061	0.0025	EPA-8270C-SIM	ND		1
2,6-Dimethylnaphthalene	9	ND	mg/kg	0.0061	0.0025	EPA-8270C-SIM	ND		1
1-Methylnaphthalene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
2-Methylnaphthalene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
2-Methylphenanthrene		ND	mg/kg	0.0061	0.0025	EPA-8270C-SIM	ND		1
3-Methylphenanthrene		ND	mg/kg	0.0061	0.0025	EPA-8270C-SIM	ND		1
Perylene		ND	mg/kg	0.0061	0.0025	EPA-8270C-SIM	ND		1
2,3,5-Trimethylnaphthale	ene	ND	mg/kg	0.0061	0.0025	EPA-8270C-SIM	ND		1
Total Low (MW) PAHs		ND	mg/kg	0.0061	0.0025	EPA-8270C-SIM	ND		1
Total High (MW) PAHs		0.031	mg/kg	0.0061	0.0025	EPA-8270C-SIM	ND		1
Total PAHs		0.031	mg/kg	0.0061	0.0025	EPA-8270C-SIM	ND		1
Nitrobenzene-d5 (Surrog	gate)	55.6	%	30 - 110 (LC	L - UCL)	EPA-8270C-SIM			1
2-Fluorobiphenyl (Surrog	gate)	44.3	%	40 - 120 (LC	L - UCL)	EPA-8270C-SIM			1
p-Terphenyl-d14 (Surrog	ate)	58.3	%	30 - 120 (LC	L - UCL)	EPA-8270C-SIM			1



Reported: 04/14/2017 10:38
Project: Alameda Point

Froject. Alameda i

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

BCL Sample ID): 1708436-06	Client Sar	nple Name:	Composite 3-\	N-A,3-W-B, 3/30			
Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-8270C-SIM	04/05/17	04/11/17 17:43	B E01	MS-B7	0.967	B[D0904	

H.T. Harvey & Associates 983 University Avenue, Building D

Los Gatos, CA 95032

Reported: 04/14/2017 10:38

Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-06	Client Sample	nt Sample Name: Composite 3-W-A,3-W-B, 3/30/2017 12:00:00AM						
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Gasoline Range Organ	nics (C4 - C12)	ND	mg/kg	1.2	0.34	EPA-8015B	ND	Quais	1
a,a,a-Trifluorotoluene	(FID Surrogate)	85.0	%	70 - 130 (LC	L - UCL)	EPA-8015B			1

	Run					QC			
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	EPA-8015B	04/04/17	04/04/17 12:23	AKM	GC-V8	1	B[D0037		

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-06	Client Sample	Name:	Composit	e 3-W-A,3-	W-B, 3/30/2017 1			
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Light Naptha		ND	mg/kg	61	25	EPA-8015B/FFP	ND		1
TPH - Aviation Gas		ND	mg/kg	61	25	EPA-8015B/FFP	ND		1
TPH - Stoddard Solvent		ND	mg/kg	25	6.1	EPA-8015B/FFP	ND		1
TPH - Heavy Naptha		ND	mg/kg	12	6.1	EPA-8015B/FFP	ND		1
TPH - Gasoline		ND	mg/kg	25	6.1	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP4)		ND	mg/kg	12	6.1	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP5)		ND	mg/kg	12	5.6	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP8)		ND	mg/kg	12	6.1	EPA-8015B/FFP	ND		1
TPH - Kerosene		ND	mg/kg	12	1.7	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)		ND	mg/kg	12	1.5	EPA-8015B/FFP	ND		1
TPH - Fuel Oil #6		ND	mg/kg	12	6.1	EPA-8015B/FFP	ND		1
TPH - Crude Oil		ND	mg/kg	25	3.4	EPA-8015B/FFP	ND		1
TPH - Hydraulic Oil / Moto	or Oil	ND	mg/kg	25	8.0	EPA-8015B/FFP	ND		1
TPH - WD-40		ND	mg/kg	12	6.1	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)		101	%	30 - 130 (LC	L - UCL)	EPA-8015B/FFP			1

				QC				
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B/FFP	04/05/17	04/06/17 13:01	AS1	GC-2	1.010	B[D0817	

Reported: 04/14/2017 10:38

Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Chemical Analysis

BCL Sample ID:	1708436-06	Client Sample	e Name:	Composite 3-W-A,3-W-B, 3/30/2017 12:00:00AM						
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#	
Solids		100	%	0.06	0.06	SM-2540G			1	

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	SM-2540G	04/06/17	04/06/17 08:30	DRC	MANUAL	1	B[D0990	

983 University Avenue, Building D

H.T. Harvey & Associates Reported:

Los Gatos, CA 95032 Project Number: 15284
Project Manager: Matt Pollock

Total Concentrations (TTLC)

04/14/2017 10:38

Project: Alameda Point

BCL Sample ID:	1708436-06	Client Sample	Name:	Composit	e 3-W-A,3-	W-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Arsenic		1.3	mg/kg	0.61	0.21	EPA-6020	ND		1
Cadmium		0.12	mg/kg	0.31	0.059	EPA-6020	ND	J	2
Chromium		29	mg/kg	0.92	0.31	EPA-6020	ND		2
Copper		4.8	mg/kg	0.61	0.12	EPA-6020	ND		1
Lead		2.1	mg/kg	0.31	0.15	EPA-6020	ND		1
Mercury		ND	mg/kg	0.20	0.023	EPA-7471A	ND		3
Nickel		25	mg/kg	0.61	0.13	EPA-6020	0.32		1
Selenium		0.19	mg/kg	0.61	0.13	EPA-6020	ND	J	2
Silver		ND	mg/kg	0.31	0.063	EPA-6020	ND		1
Zinc		19	mg/kg	1.6	0.61	EPA-6020	0.52		1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6020	04/05/17	04/08/17 04:42	ARD	PE-EL2	0.943	B[D0341	
2	EPA-6020	04/05/17	04/10/17 17:17	GPD	PE-EL2	0.943	B[D0341	
3	EPA-7471A	04/04/17	04/04/17 12:32	MEV	CETAC2	0.977	B[D0146	

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID:	1708436-07	Client Sample	Name:	Composite	e 4-O-A,4-C	D-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Aldrin		ND	mg/kg	0.00059	0.000065	EPA-8081A	ND		1
alpha-BHC		ND	mg/kg	0.00059	0.000075	EPA-8081A	ND		1
beta-BHC		ND	mg/kg	0.00059	0.000083	EPA-8081A	ND		1
delta-BHC		ND	mg/kg	0.00059	0.000069	EPA-8081A	ND		1
gamma-BHC (Lindane)		ND	mg/kg	0.00059	0.000040	EPA-8081A	ND		1
Chlordane (Technical)		ND	mg/kg	0.059	0.0018	EPA-8081A	ND		1
4,4'-DDD		ND	mg/kg	0.00059	0.00010	EPA-8081A	ND		1
4,4'-DDE		ND	mg/kg	0.00059	0.000097	EPA-8081A	ND		1
4,4'-DDT		ND	mg/kg	0.00059	0.000092	EPA-8081A	ND		1
Dieldrin		ND	mg/kg	0.00059	0.000082	EPA-8081A	ND		1
Endosulfan I		ND	mg/kg	0.00059	0.00010	EPA-8081A	ND		1
Endosulfan II		ND	mg/kg	0.00059	0.00013	EPA-8081A	ND		1
Endosulfan sulfate		ND	mg/kg	0.00059	0.00012	EPA-8081A	ND		1
Endrin		ND	mg/kg	0.00059	0.00010	EPA-8081A	ND		1
Endrin aldehyde		ND	mg/kg	0.00059	0.00011	EPA-8081A	ND		1
Heptachlor		ND	mg/kg	0.00059	0.000067	EPA-8081A	ND		1
Heptachlor epoxide		ND	mg/kg	0.00059	0.000092	EPA-8081A	ND		1
Methoxychlor		ND	mg/kg	0.00059	0.00013	EPA-8081A	ND		1
Toxaphene		ND	mg/kg	0.059	0.0015	EPA-8081A	ND		1
TCMX (Surrogate)		42.2	%	20 - 130 (LCI	L - UCL)	EPA-8081A			1
Decachlorobiphenyl (Sur	rogate)	48.8	%	40 - 130 (LCI	L - UCL)	EPA-8081A			1

					QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8081A	04/05/17	04/06/17 19:07	HKS	GC-17	1.014	B[D0815	

H.T. Harvey & Associates

Los Gatos, CA 95032

983 University Avenue, Building D

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284

Project Manager: Matt Pollock

PCB Analysis (EPA Method 8082)

BCL Sample ID:	1708436-07	Client Sample	Name:	Composite	Composite 4-O-A,4-O-B, 3/30/2017 12:00:00AM					
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #	
PCB-1016		ND	mg/kg	0.012	0.0046	EPA-8082	ND		1	
PCB-1221		ND	mg/kg	0.012	0.0085	EPA-8082	ND		1	
PCB-1232		ND	mg/kg	0.012	0.0087	EPA-8082	ND		1	
PCB-1242		ND	mg/kg	0.012	0.0049	EPA-8082	ND		1	
PCB-1248		ND	mg/kg	0.012	0.0082	EPA-8082	ND		1	
PCB-1254		ND	mg/kg	0.012	0.0038	EPA-8082	ND		1	
PCB-1260		ND	mg/kg	0.012	0.0034	EPA-8082	ND		1	
Total PCB's (Summatio	n)	ND	mg/kg	0.012	0.0059	EPA-8082	ND		1	
Decachlorobiphenyl (Su	ırrogate)	46.7	%	40 - 120 (LC	L - UCL)	EPA-8082			1	

			Run		QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8082	04/05/17	04/06/17 10:27	HKS	GC-15	0.990	B[D0798	



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H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

BCL Sample ID:	1708436-07	Client Sample	Name:	Composite	e 4-O-A,4-0	P-B, 3/30/2017 12:00:00AM			
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Acenaphthene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND ND	Quais	1
Acenaphthylene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
Anthracene		0.0026	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND	J	1
Benzo[a]anthracene		0.0049	mg/kg	0.0035	0.0015	EPA-8270C-SIM	ND		1
Benzo[b]fluoranthene		0.010	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
Benzo[k]fluoranthene		0.0034	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND	J	1
Benzo[a]pyrene		0.0076	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
Benzo[g,h,i]perylene		0.0076	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
Chrysene		0.0049	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
Dibenzo[a,h]anthracene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
Fluoranthene		0.011	mg/kg	0.0035	0.0013	EPA-8270C-SIM	ND		1
Fluorene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
Indeno[1,2,3-cd]pyrene		0.0061	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
Naphthalene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
Phenanthrene		0.0034	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND	J	1
Pyrene		0.017	mg/kg	0.0035	0.0019	EPA-8270C-SIM	ND		1
Benzo[e]pyrene		ND	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1
1,1-Biphenyl		ND	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1
2,6-Dimethylnaphthalene	•	ND	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1
1-Methylnaphthalene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
2-Methylnaphthalene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1
2-Methylphenanthrene		ND	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1
3-Methylphenanthrene		ND	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1
Perylene		ND	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1
2,3,5-Trimethylnaphthale	ene	ND	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1
Total Low (MW) PAHs		0.0061	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1
Total High (MW) PAHs		0.073	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1
Total PAHs		0.079	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1
Nitrobenzene-d5 (Surrog	gate)	57.1	%	30 - 110 (LCI	L - UCL)	EPA-8270C-SIM			1
2-Fluorobiphenyl (Surrog	gate)	44.6	%	40 - 120 (LCI	L - UCL)	EPA-8270C-SIM			1
p-Terphenyl-d14 (Surrog	jate)	49.0	%	30 - 120 (LCI	L - UCL)	EPA-8270C-SIM			1



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H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

BCL Sample ID	1708436-07	Client Sar	mple Name:	Composite 4-O-A,4-O-B, 3/30/2017 12:00:00AM						
Run #	Method	Prep Date	Run Date/Time	QC Analyst Instrument Dilution Batch ID						
1	EPA-8270C-SIM	04/05/17	04/11/17 18:07	EO1	MS-B7	0.966	B[D0904			

H.T. Harvey & Associates 983 University Avenue, Building D

Los Gatos, CA 95032

Reported: 04/14/2017 10:38

Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-07	Client Sample	DIE Name: Composite 4-O-A,4-O-B, 3/30/2017 12:00:00AM							
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#	
Gasoline Range Organ	nics (C4 - C12)	ND	mg/kg	1.2	0.33	EPA-8015B	ND		1	
a,a,a-Trifluorotoluene (FID Surrogate)	128	%	70 - 130 (LC	L - UCL)	EPA-8015B			1	

			Run			QC				
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID			
1	EPA-8015B	04/05/17	04/05/17 12:05	AKM	GC-V8	1	B[D0037			

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-07	Client Sample Name:		Composite 4-O-A,4-O-B, 3/30/2017 12:00:00AM					
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Light Naptha		ND	mg/kg	59	23	EPA-8015B/FFP	ND		1
TPH - Aviation Gas		ND	mg/kg	59	23	EPA-8015B/FFP	ND		1
TPH - Stoddard Solvent		ND	mg/kg	23	5.9	EPA-8015B/FFP	ND		1
TPH - Heavy Naptha		ND	mg/kg	12	5.9	EPA-8015B/FFP	ND		1
TPH - Gasoline		ND	mg/kg	23	5.9	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP4)		ND	mg/kg	12	5.9	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP5)		ND	mg/kg	12	5.4	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP8)		ND	mg/kg	12	5.9	EPA-8015B/FFP	ND		1
TPH - Kerosene		ND	mg/kg	12	1.6	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)		ND	mg/kg	12	1.4	EPA-8015B/FFP	ND		1
TPH - Fuel Oil #6		ND	mg/kg	12	5.9	EPA-8015B/FFP	ND		1
TPH - Crude Oil		ND	mg/kg	23	3.3	EPA-8015B/FFP	ND		1
TPH - Hydraulic Oil / Moto	or Oil	ND	mg/kg	23	7.6	EPA-8015B/FFP	ND		1
TPH - WD-40		ND	mg/kg	12	5.9	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)		106	%	30 - 130 (LC	L - UCL)	EPA-8015B/FFP			1

	Run					QC		
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B/FFP	04/05/17	04/06/17 10:35	AS1	GC-2	1.010	B[D0817	

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284

Project Manager: Matt Pollock

983 University Avenue, Building D Los Gatos, CA 95032

H.T. Harvey & Associates

Chemical Analysis

BCL Sample ID:	1708436-07	Client Sample	Name:	Composite	Composite 4-O-A,4-O-B, 3/30/2017 12:00:00AM					
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#	
Solids		100	%	0.06	0.06	SM-2540G			1	

			Run			QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	SM-2540G	04/13/17	04/13/17 07:30	DRC	MANUAL	1	B[D1238		

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Total Concentrations (TTLC)

BCL Sample ID:	1708436-07	Client Sample	Name:	Composit	e 4-O-A,4-0	O-B, 3/30/2017 1	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Arsenic		1.2	mg/kg	0.59	0.20	EPA-6020	ND		1
Cadmium		0.18	mg/kg	0.29	0.056	EPA-6020	ND	J	2
Chromium		39	mg/kg	0.88	0.29	EPA-6020	ND		2
Copper		9.4	mg/kg	0.59	0.12	EPA-6020	ND		1
Lead		3.7	mg/kg	0.29	0.14	EPA-6020	ND		1
Mercury		0.045	mg/kg	0.19	0.022	EPA-7471A	ND	J	3
Nickel		38	mg/kg	0.59	0.13	EPA-6020	0.32		1
Selenium		ND	mg/kg	0.59	0.13	EPA-6020	ND		2
Silver		ND	mg/kg	0.29	0.060	EPA-6020	ND		1
Zinc		27	mg/kg	1.5	0.59	EPA-6020	0.52		1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6020	04/05/17	04/08/17 05:00	ARD	PE-EL2	0.952	B[D0341	
2	EPA-6020	04/05/17	04/10/17 17:21	GPD	PE-EL2	0.952	B[D0341	
3	EPA-7471A	04/04/17	04/04/17 12:34	MEV	CETAC2	0.962	B[D0146	

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID:	1708436-08	Client Sample	Name:	Composite	e 4-W-A,4-\	N-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Aldrin		ND	mg/kg	0.00060	0.000065	EPA-8081A	ND		1
alpha-BHC		ND	mg/kg	0.00060	0.000076	EPA-8081A	ND		1
beta-BHC		ND	mg/kg	0.00060	0.000084	EPA-8081A	ND		1
delta-BHC		ND	mg/kg	0.00060	0.000070	EPA-8081A	ND		1
gamma-BHC (Lindane)		ND	mg/kg	0.00060	0.000040	EPA-8081A	ND		1
Chlordane (Technical)		ND	mg/kg	0.060	0.0018	EPA-8081A	ND		1
4,4'-DDD		ND	mg/kg	0.00060	0.00010	EPA-8081A	ND		1
4,4'-DDE		ND	mg/kg	0.00060	0.000099	EPA-8081A	ND		1
4,4'-DDT		ND	mg/kg	0.00060	0.000093	EPA-8081A	ND		1
Dieldrin		ND	mg/kg	0.00060	0.000083	EPA-8081A	ND		1
Endosulfan I		ND	mg/kg	0.00060	0.00010	EPA-8081A	ND		1
Endosulfan II		ND	mg/kg	0.00060	0.00013	EPA-8081A	ND		1
Endosulfan sulfate		ND	mg/kg	0.00060	0.00012	EPA-8081A	ND		1
Endrin		ND	mg/kg	0.00060	0.00010	EPA-8081A	ND		1
Endrin aldehyde		ND	mg/kg	0.00060	0.00012	EPA-8081A	ND		1
Heptachlor		ND	mg/kg	0.00060	0.000068	EPA-8081A	ND		1
Heptachlor epoxide		ND	mg/kg	0.00060	0.000093	EPA-8081A	ND		1
Methoxychlor		ND	mg/kg	0.00060	0.00013	EPA-8081A	ND		1
Toxaphene		ND	mg/kg	0.060	0.0015	EPA-8081A	ND		1
TCMX (Surrogate)		41.4	%	20 - 130 (LC	L - UCL)	EPA-8081A			1
Decachlorobiphenyl (Sur	rogate)	44.0	%	40 - 130 (LC	L - UCL)	EPA-8081A			1

					QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8081A	04/05/17	04/06/17 19:21	HKS	GC-17	1.017	B[D0815	

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H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 **Reported:** 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

PCB Analysis (EPA Method 8082)

BCL Sample ID:	1708436-08	Client Sample	Name:	Composite	Composite 4-W-A,4-W-B, 3/30/2017 12:00:00AM						
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#		
PCB-1016		ND	mg/kg	0.012	0.0046	EPA-8082	ND		1		
PCB-1221		ND	mg/kg	0.012	0.0086	EPA-8082	ND		1		
PCB-1232		ND	mg/kg	0.012	0.0088	EPA-8082	ND		1		
PCB-1242		ND	mg/kg	0.012	0.0050	EPA-8082	ND		1		
PCB-1248		ND	mg/kg	0.012	0.0083	EPA-8082	ND		1		
PCB-1254		ND	mg/kg	0.012	0.0038	EPA-8082	ND		1		
PCB-1260		ND	mg/kg	0.012	0.0035	EPA-8082	ND		1		
Total PCB's (Summation	1)	ND	mg/kg	0.012	0.0060	EPA-8082	ND		1		
Decachlorobiphenyl (Sui	rrogate)	36.7	%	40 - 120 (LC	L - UCL)	EPA-8082		S09	1		

			Run					
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8082	04/05/17	04/06/17 10:38	HKS	GC-15	1.010	B[D0798	



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H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

BCL Sample ID:	1708436-08	Client Sample	Name:	Composite	e 4-W-A,4-	W-B, 3/30/2017 1	2:00:00AM	e: Composite 4-W-A,4-W-B, 3/30/2017 12:00:00AM					
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab	Dun#				
Acenaphthene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND ND	Quals	Run # 1				
Acenaphthylene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1				
Anthracene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1				
Benzo[a]anthracene		ND	mg/kg	0.0036	0.0015	EPA-8270C-SIM	ND		1				
Benzo[b]fluoranthene		0.0042	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1				
Benzo[k]fluoranthene		0.0023	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND	J	1				
Benzo[a]pyrene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1				
Benzo[g,h,i]perylene		0.0038	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1				
Chrysene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1				
Dibenzo[a,h]anthracene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1				
Fluoranthene		0.0034	mg/kg	0.0036	0.0013	EPA-8270C-SIM	ND	J	1				
Fluorene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1				
Indeno[1,2,3-cd]pyrene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1				
Naphthalene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1				
Phenanthrene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1				
Pyrene		0.0046	mg/kg	0.0036	0.0019	EPA-8270C-SIM	ND		1				
Benzo[e]pyrene		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1				
1,1-Biphenyl		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1				
2,6-Dimethylnaphthalene		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1				
1-Methylnaphthalene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1				
2-Methylnaphthalene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1				
2-Methylphenanthrene		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1				
3-Methylphenanthrene		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1				
Perylene		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1				
2,3,5-Trimethylnaphthalen	e	ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1				
Total Low (MW) PAHs		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1				
Total High (MW) PAHs		0.018	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1				
Total PAHs		0.018	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1				
Nitrobenzene-d5 (Surroga	te)	63.8	%	30 - 110 (LC	L - UCL)	EPA-8270C-SIM			1				
2-Fluorobiphenyl (Surroga	te)	49.9	%	40 - 120 (LC	L - UCL)	EPA-8270C-SIM			1				
p-Terphenyl-d14 (Surroga	te)	61.0	%	30 - 120 (LC	L - UCL)	EPA-8270C-SIM			1				



H.T. Harvey & Associates 983 University Avenue, Building D

Los Gatos, CA 95032

Reported: 04/14/2017 10:38

Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

BCL Sample ID): 1708436-08	Client Sar	mple Name:	Composite 4-W-A,4-W-B, 3/30/2017 12:00:00AM						
Run#	Method	Prep Date	Run Date/Time	QC e Analyst Instrument Dilution Batch ID						
1	EPA-8270C-SIM	04/05/17	04/11/17 18:32	. EO1	MS-B7	0.963	B[D0904			

H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284
Project Manager: Matt Pollock

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-08	Client Sample	Name:	Composite	e 4-W-A,4-	W-B, 3/30/2017			
		Dry Basis		201		.	МВ	Lab	_ "
Constituent		Result	Units	PQL	MDL	Method	Bias	Quals	Run #
Gasoline Range Organ	ics (C4 - C12)	ND	mg/kg	1.2	0.33	EPA-8015B	ND		1
a,a,a-Trifluorotoluene (FID Surrogate)	118	%	70 - 130 (LC	L - UCL)	EPA-8015B			1

			Run			QC				
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID			
1	EPA-8015B	04/05/17	04/05/17 12:26	AKM	GC-V8	1	B[D0037			

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-08	Client Sample	Composit	Composite 4-W-A,4-W-B, 3/30/2017 12:00:00AM							
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #		
TPH - Light Naptha		ND	mg/kg	60	24	EPA-8015B/FFP	ND		1		
TPH - Aviation Gas		ND	mg/kg	60	24	EPA-8015B/FFP	ND		1		
TPH - Stoddard Solvent		ND	mg/kg	24	6.0	EPA-8015B/FFP	ND		1		
TPH - Heavy Naptha		ND	mg/kg	12	6.0	EPA-8015B/FFP	ND		1		
TPH - Gasoline		ND	mg/kg	24	6.0	EPA-8015B/FFP	ND		1		
TPH - Jet Fuel (JP4)		ND	mg/kg	12	6.0	EPA-8015B/FFP	ND		1		
TPH - Jet Fuel (JP5)		ND	mg/kg	12	5.5	EPA-8015B/FFP	ND		1		
TPH - Jet Fuel (JP8)		ND	mg/kg	12	6.0	EPA-8015B/FFP	ND		1		
TPH - Kerosene		ND	mg/kg	12	1.7	EPA-8015B/FFP	ND		1		
TPH - Diesel (FFP)		ND	mg/kg	12	1.4	EPA-8015B/FFP	ND		1		
TPH - Fuel Oil #6		ND	mg/kg	12	6.0	EPA-8015B/FFP	ND		1		
TPH - Crude Oil		ND	mg/kg	24	3.3	EPA-8015B/FFP	ND		1		
TPH - Hydraulic Oil / Moto	r Oil	ND	mg/kg	24	7.7	EPA-8015B/FFP	ND		1		
TPH - WD-40		ND	mg/kg	12	6.0	EPA-8015B/FFP	ND		1		
Tetracosane (Surrogate)		96.3	%	30 - 130 (LC	CL - UCL)	EPA-8015B/FFP			1		

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B/FFP	04/05/17	04/06/17 17:12	AS1	GC-2	1	B[D0817	

H.T. Harvey & Associates

Los Gatos, CA 95032

983 University Avenue, Building D

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284

Project Manager: Matt Pollock

Chemical Analysis

BCL Sample ID:	1708436-08	Client Sample	Name:	Composite					
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Solids		100	%	0.06	0.06	SM-2540G			1

			Run			QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	SM-2540G	04/06/17	04/06/17 08:30	DRC	MANUAL	1	B[D0990		

H.T. Harvey & Associates

Los Gatos, CA 95032

983 University Avenue, Building D

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Total Concentrations (TTLC)

BCL Sample ID:	1708436-08	Client Sample	Name:	Composit	e 4-W-A,4-	W-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Arsenic		1.7	mg/kg	0.60	0.20	EPA-6020	ND		1
Cadmium		0.16	mg/kg	0.30	0.057	EPA-6020	ND	J	2
Chromium		32	mg/kg	0.89	0.30	EPA-6020	ND		2
Copper		5.4	mg/kg	0.60	0.12	EPA-6020	ND		1
Lead		2.3	mg/kg	0.30	0.14	EPA-6020	ND		1
Mercury		ND	mg/kg	0.19	0.023	EPA-7471A	ND		3
Nickel		26	mg/kg	0.60	0.13	EPA-6020	0.34		1
Selenium		0.39	mg/kg	0.60	0.13	EPA-6020	ND	J	2
Silver		ND	mg/kg	0.30	0.061	EPA-6020	ND		1
Zinc		16	mg/kg	1.5	0.60	EPA-6020	0.55		1

			Run		_		QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6020	04/05/17	04/08/17 05:03	ARD	PE-EL2	0.990	B[D0341	
2	EPA-6020	04/05/17	04/10/17 17:24	GPD	PE-EL2	0.990	B[D0341	
3	EPA-7471A	04/04/17	04/04/17 12:37	MEV	CETAC2	1.025	B[D0146	

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID:	1708436-09	Client Sample	Name:	Composite	e 5-O-A,5-C	D-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Aldrin		ND	mg/kg	0.00057	0.000062	EPA-8081A	ND		1
alpha-BHC		ND	mg/kg	0.00057	0.000072	EPA-8081A	ND		1
beta-BHC		ND	mg/kg	0.00057	0.000080	EPA-8081A	ND		1
delta-BHC		ND	mg/kg	0.00057	0.000067	EPA-8081A	ND		1
gamma-BHC (Lindane)		ND	mg/kg	0.00057	0.000038	EPA-8081A	ND		1
Chlordane (Technical)		ND	mg/kg	0.057	0.0017	EPA-8081A	ND		1
4,4'-DDD		ND	mg/kg	0.00057	0.000096	EPA-8081A	ND		1
4,4'-DDE		ND	mg/kg	0.00057	0.000094	EPA-8081A	ND		1
4,4'-DDT		ND	mg/kg	0.00057	0.000088	EPA-8081A	ND		1
Dieldrin		ND	mg/kg	0.00057	0.000079	EPA-8081A	ND		1
Endosulfan I		ND	mg/kg	0.00057	0.000098	EPA-8081A	ND		1
Endosulfan II		ND	mg/kg	0.00057	0.00012	EPA-8081A	ND		1
Endosulfan sulfate		ND	mg/kg	0.00057	0.00011	EPA-8081A	ND		1
Endrin		ND	mg/kg	0.00057	0.000098	EPA-8081A	ND		1
Endrin aldehyde		ND	mg/kg	0.00057	0.00011	EPA-8081A	ND		1
Heptachlor		ND	mg/kg	0.00057	0.000064	EPA-8081A	ND		1
Heptachlor epoxide		ND	mg/kg	0.00057	0.000088	EPA-8081A	ND		1
Methoxychlor		ND	mg/kg	0.00057	0.00012	EPA-8081A	ND		1
Toxaphene		ND	mg/kg	0.057	0.0015	EPA-8081A	ND		1
TCMX (Surrogate)		52.7	%	20 - 130 (LC	L - UCL)	EPA-8081A			1
Decachlorobiphenyl (Sur	rogate)	49.7	%	40 - 130 (LC	L - UCL)	EPA-8081A			1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8081A	04/05/17	04/06/17 19:36	HKS	GC-17	1.014	B[D0815	

Reported: 04/14/2017 10:38

Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

PCB Analysis (EPA Method 8082)

BCL Sample ID:	1708436-09	Client Sample	Name:	Composite	Composite 5-O-A,5-O-B, 3/30/2017 12:00:00AM						
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #		
PCB-1016		ND	mg/kg	0.011	0.0044	EPA-8082	ND		1		
PCB-1221		ND	mg/kg	0.011	0.0081	EPA-8082	ND		1		
PCB-1232		ND	mg/kg	0.011	0.0084	EPA-8082	ND		1		
PCB-1242		ND	mg/kg	0.011	0.0047	EPA-8082	ND		1		
PCB-1248		ND	mg/kg	0.011	0.0079	EPA-8082	ND		1		
PCB-1254		ND	mg/kg	0.011	0.0036	EPA-8082	ND		1		
PCB-1260		ND	mg/kg	0.011	0.0033	EPA-8082	ND		1		
Total PCB's (Summatio	n)	ND	mg/kg	0.011	0.0057	EPA-8082	ND		1		
Decachlorobiphenyl (Su	ırrogate)	70.0	%	40 - 120 (LC	L - UCL)	EPA-8082			1		

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8082	04/05/17	04/06/17 10:48	HKS	GC-15	1.003	B[D0798	



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H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

BCL Sample ID:	1708436-09	Client Sample	Name:	Composite	e 5-O-A,5-0	O-B, 3/30/2017 12	2:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Acenaphthene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND ND	Quais	1
Acenaphthylene		0.0041	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Anthracene		0.0092	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Benzo[a]anthracene		0.0059	mg/kg	0.0034	0.0015	EPA-8270C-SIM	ND		1
Benzo[b]fluoranthene		0.010	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Benzo[k]fluoranthene		0.0044	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Benzo[a]pyrene		0.0059	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Benzo[g,h,i]perylene		0.0044	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Chrysene		0.0052	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Dibenzo[a,h]anthracene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Fluoranthene		0.0037	mg/kg	0.0034	0.0012	EPA-8270C-SIM	ND		1
Fluorene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Indeno[1,2,3-cd]pyrene		0.0044	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Naphthalene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Phenanthrene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Pyrene		0.0037	mg/kg	0.0034	0.0018	EPA-8270C-SIM	ND		1
Benzo[e]pyrene		ND	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
1,1-Biphenyl		ND	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
2,6-Dimethylnaphthalene)	ND	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
1-Methylnaphthalene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
2-Methylnaphthalene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
2-Methylphenanthrene		ND	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
3-Methylphenanthrene		ND	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
Perylene		ND	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
2,3,5-Trimethylnaphthale	ene	ND	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
Total Low (MW) PAHs		0.014	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
Total High (MW) PAHs		0.052	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
Total PAHs		0.066	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
Nitrobenzene-d5 (Surrog	ate)	73.7	%	30 - 110 (LCI	L - UCL)	EPA-8270C-SIM			1
2-Fluorobiphenyl (Surrog	gate)	66.4	%	40 - 120 (LCI	L - UCL)	EPA-8270C-SIM			1
p-Terphenyl-d14 (Surrog	ate)	64.5	%	30 - 120 (LCI	L - UCL)	EPA-8270C-SIM			1



H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284
Project Manager: Matt Pollock

BCL Sample II	D : 1708436-09	Client Sa	mple Name:	Composite 5-O-A,5-O-B, 3/30/2017 12:00:00AM					
Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID		
1	EPA-8270C-SIM	04/05/17	04/11/17 18:56	E01	MS-B7	0.980	B[D0904		

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-09	Client Sample	Name:	Composite 5-O-A,5-O-B, 3/30/2017 12:00:00AM						
Constituent		Dry Basis	Unito	DOL	MDI	Mathad	MB	Lab	D #	
Constituent Gasoline Range Organ	ics (C4 - C12)	Result ND	Units mg/kg	PQL 1.1	MDL 0.32	Method EPA-8015B	Bias ND	Quals	Run # 1	
a,a,a-Trifluorotoluene (FID Surrogate)	128	%	70 - 130 (LCL	- UCL)	EPA-8015B			1	

			Run			QC				
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID			
1	EPA-8015B	04/04/17	04/04/17 13:26	AKM	GC-V8	1	B[D0037			

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-09	Client Sample	Name:	Composit	e 5-O-A,5-0	O-B, 3/30/2017 12	2:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Light Naptha		ND	mg/kg	57	23	EPA-8015B/FFP	ND		1
TPH - Aviation Gas		ND	mg/kg	57	23	EPA-8015B/FFP	ND		1
TPH - Stoddard Solvent		ND	mg/kg	23	5.7	EPA-8015B/FFP	ND		1
TPH - Heavy Naptha		ND	mg/kg	11	5.7	EPA-8015B/FFP	ND		1
TPH - Gasoline		ND	mg/kg	23	5.7	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP4)		ND	mg/kg	11	5.7	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP5)		ND	mg/kg	11	5.2	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP8)		ND	mg/kg	11	5.7	EPA-8015B/FFP	ND		1
TPH - Kerosene		ND	mg/kg	11	1.6	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)		ND	mg/kg	11	1.4	EPA-8015B/FFP	ND		1
TPH - Fuel Oil #6		ND	mg/kg	11	5.7	EPA-8015B/FFP	ND		1
TPH - Crude Oil		ND	mg/kg	23	3.2	EPA-8015B/FFP	ND		1
TPH - Hydraulic Oil / Moto	or Oil	ND	mg/kg	23	7.3	EPA-8015B/FFP	ND		1
TPH - WD-40		ND	mg/kg	11	5.7	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)		102	%	30 - 130 (LC	L - UCL)	EPA-8015B/FFP			1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B/FFP	04/05/17	04/06/17 17:35	AS1	GC-2	1	B[D0817	

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Chemical Analysis

BCL Sample ID:	1708436-09	Client Sample	Name:	Composite 5-O-A,5-O-B, 3/30/2017 12:00:00AM					
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Solids		100	%	0.06	0.06	SM-2540G			1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	SM-2540G	04/06/17	04/06/17 08:30	DRC	MANUAL	1	B[D0990	

H.T. Harvey & Associates

983 University Avenue, Building D

Reported: 04/14/2017 10:38

Project Number: 15284 Project Manager: Matt Pollock

Project: Alameda Point

Los Gatos, CA 95032 Pro

BCL Sample ID:	1708436-09	Client Sample	Name:	Composite	e 5-O-A,5-0	O-B, 3/30/2017 1	2:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Arsenic		1.6	mg/kg	0.57	0.19	EPA-6020	ND		1
Cadmium		0.10	mg/kg	0.28	0.054	EPA-6020	ND	J	2
Chromium		28	mg/kg	0.85	0.28	EPA-6020	ND		2
Copper		5.1	mg/kg	0.57	0.11	EPA-6020	ND		1
Lead		2.4	mg/kg	0.28	0.14	EPA-6020	ND		1
Mercury		ND	mg/kg	0.18	0.021	EPA-7471A	ND		3
Nickel		26	mg/kg	0.57	0.12	EPA-6020	0.33		1
Selenium		0.32	mg/kg	0.57	0.12	EPA-6020	ND	J	2
Silver		ND	mg/kg	0.28	0.058	EPA-6020	ND		1
Zinc		16	mg/kg	1.5	0.57	EPA-6020	0.54		1

Total Concentrations (TTLC)

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6020	04/05/17	04/08/17 05:07	ARD	PE-EL2	0.980	B[D0341	
2	EPA-6020	04/05/17	04/10/17 17:28	GPD	PE-EL2	0.980	B[D0341	
3	EPA-7471A	04/04/17	04/04/17 12:39	MEV	CETAC2	1.025	B[D0146	

H.T. Harvey & Associates

Los Gatos, CA 95032

983 University Avenue, Building D

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284

Project Manager: Matt Pollock

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID:	1708436-10	Client Sample	Name:	Composite	e 5-W-A,5-V	V-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Aldrin		ND	mg/kg	0.00061	0.000067	EPA-8081A	ND		1
alpha-BHC		ND	mg/kg	0.00061	0.000078	EPA-8081A	ND		1
beta-BHC		ND	mg/kg	0.00061	0.000087	EPA-8081A	ND		1
delta-BHC		ND	mg/kg	0.00061	0.000072	EPA-8081A	ND		1
gamma-BHC (Lindane)		ND	mg/kg	0.00061	0.000042	EPA-8081A	ND		1
Chlordane (Technical)		ND	mg/kg	0.061	0.0018	EPA-8081A	ND		1
4,4'-DDD		ND	mg/kg	0.00061	0.00010	EPA-8081A	ND		1
4,4'-DDE		ND	mg/kg	0.00061	0.00010	EPA-8081A	ND		1
4,4'-DDT		ND	mg/kg	0.00061	0.000095	EPA-8081A	ND		1
Dieldrin		ND	mg/kg	0.00061	0.000086	EPA-8081A	ND		1
Endosulfan I		ND	mg/kg	0.00061	0.00011	EPA-8081A	ND		1
Endosulfan II		ND	mg/kg	0.00061	0.00013	EPA-8081A	ND		1
Endosulfan sulfate		ND	mg/kg	0.00061	0.00012	EPA-8081A	ND		1
Endrin		ND	mg/kg	0.00061	0.00011	EPA-8081A	ND		1
Endrin aldehyde		ND	mg/kg	0.00061	0.00012	EPA-8081A	ND		1
Heptachlor		ND	mg/kg	0.00061	0.000070	EPA-8081A	ND		1
Heptachlor epoxide		ND	mg/kg	0.00061	0.000095	EPA-8081A	ND		1
Methoxychlor		ND	mg/kg	0.00061	0.00013	EPA-8081A	ND		1
Toxaphene		ND	mg/kg	0.061	0.0016	EPA-8081A	ND		1
TCMX (Surrogate)		41.6	%	20 - 130 (LC	L - UCL)	EPA-8081A			1
Decachlorobiphenyl (Sur	rogate)	40.4	%	40 - 130 (LC	L - UCL)	EPA-8081A			1

Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8081A	04/05/17	04/06/17 19:50	HKS	GC-17	1.003	B[D0815	

MU

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

PCB Analysis (EPA Method 8082)

BCL Sample ID:	1708436-10	Client Sample	Name:	Composite	e 5-W-A,5-	W-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
PCB-1016		ND	mg/kg	0.012	0.0048	EPA-8082	ND		1
PCB-1221		ND	mg/kg	0.012	0.0088	EPA-8082	ND		1
PCB-1232		ND	mg/kg	0.012	0.0090	EPA-8082	ND		1
PCB-1242		ND	mg/kg	0.012	0.0051	EPA-8082	ND		1
PCB-1248		ND	mg/kg	0.012	0.0086	EPA-8082	ND		1
PCB-1254		ND	mg/kg	0.012	0.0039	EPA-8082	ND		1
PCB-1260		ND	mg/kg	0.012	0.0035	EPA-8082	ND		1
Total PCB's (Summatio	n)	ND	mg/kg	0.012	0.0061	EPA-8082	ND		1
Decachlorobiphenyl (Su	ırrogate)	23.3	%	40 - 120 (LC	L - UCL)	EPA-8082		S09	1

			Run					
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8082	04/05/17	04/06/17 10:59	HKS	GC-15	1.003	B[D0798	



MU

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

BCL Sample ID:	1708436-10	Client Sample	Name:	Composite	e 5-W-A,5-	W-B, 3/30/2017 1:	2:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Acenaphthene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND	Qudis	1
Acenaphthylene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Anthracene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Benzo[a]anthracene		0.0036	mg/kg	0.0037	0.0016	EPA-8270C-SIM	ND	J	1
Benzo[b]fluoranthene		0.0075	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Benzo[k]fluoranthene		0.0032	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND	J	1
Benzo[a]pyrene		0.0063	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Benzo[g,h,i]perylene		0.0063	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Chrysene		0.0036	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND	J	1
Dibenzo[a,h]anthracene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Fluoranthene		0.0067	mg/kg	0.0037	0.0013	EPA-8270C-SIM	ND		1
Fluorene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Indeno[1,2,3-cd]pyrene		0.0051	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Naphthalene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Phenanthrene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Pyrene		0.010	mg/kg	0.0037	0.0020	EPA-8270C-SIM	ND		1
Benzo[e]pyrene		ND	mg/kg	0.0061	0.0024	EPA-8270C-SIM	ND		1
1,1-Biphenyl		ND	mg/kg	0.0061	0.0024	EPA-8270C-SIM	ND		1
2,6-Dimethylnaphthalene		ND	mg/kg	0.0061	0.0024	EPA-8270C-SIM	ND		1
1-Methylnaphthalene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
2-Methylnaphthalene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
2-Methylphenanthrene		ND	mg/kg	0.0061	0.0024	EPA-8270C-SIM	ND		1
3-Methylphenanthrene		ND	mg/kg	0.0061	0.0024	EPA-8270C-SIM	ND		1
Perylene		ND	mg/kg	0.0061	0.0024	EPA-8270C-SIM	ND		1
2,3,5-Trimethylnaphthaler	ne	ND	mg/kg	0.0061	0.0024	EPA-8270C-SIM	ND		1
Total Low (MW) PAHs		ND	mg/kg	0.0061	0.0024	EPA-8270C-SIM	ND		1
Total High (MW) PAHs		0.056	mg/kg	0.0061	0.0024	EPA-8270C-SIM	ND		1
Total PAHs		0.056	mg/kg	0.0061	0.0024	EPA-8270C-SIM	ND		1
Nitrobenzene-d5 (Surroga	ite)	68.8	%	30 - 110 (LC	L - UCL)	EPA-8270C-SIM			1
2-Fluorobiphenyl (Surroga	nte)	51.2	%	40 - 120 (LC	L - UCL)	EPA-8270C-SIM			1
p-Terphenyl-d14 (Surroga	te)	57.3	%	30 - 120 (LC	L - UCL)	EPA-8270C-SIM			1



Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

BCL Sample ID): 1708436-10	Client Sar	mple Name:	Composite 5-W-A,5-W-B, 3/30/2017 12:00:00AM						
Run#	Method	Prep Date	Run Date/Time							
1	EPA-8270C-SIM	04/05/17	04/11/17 19:20	E01	MS-B7	0.970	B[D0904			

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-10	Client Sample	Name:	Name: Composite 5-W-A,5-W-B, 3/30/2017 12:00:00AM						
Comptituent		Dry Basis	11	DOL	MDI	Mathad	MB	Lab	D#	
Constituent		Result	Units	PQL	MDL	Method	Bias	Quals	Run #	
Gasoline Range Organ	ics (C4 - C12)	ND	mg/kg	1.2	0.34	EPA-8015B	ND		1	
a,a,a-Trifluorotoluene (FID Surrogate)	128	%	70 - 130 (LC	L - UCL)	EPA-8015B			1	

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	04/04/17	04/04/17 13:47	AKM	GC-V8	1	B[D0037	

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-10	Client Sample	Name:	Composit	e 5-W-A,5-	W-B, 3/30/2017 1	2:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Light Naptha		ND	mg/kg	61	24	EPA-8015B/FFP	ND		1
TPH - Aviation Gas		ND	mg/kg	61	24	EPA-8015B/FFP	ND		1
TPH - Stoddard Solvent		ND	mg/kg	24	6.1	EPA-8015B/FFP	ND		1
TPH - Heavy Naptha		ND	mg/kg	12	6.1	EPA-8015B/FFP	ND		1
TPH - Gasoline		ND	mg/kg	24	6.1	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP4)		ND	mg/kg	12	6.1	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP5)		ND	mg/kg	12	5.6	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP8)		ND	mg/kg	12	6.1	EPA-8015B/FFP	ND		1
TPH - Kerosene		ND	mg/kg	12	1.7	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)		ND	mg/kg	12	1.5	EPA-8015B/FFP	ND		1
TPH - Fuel Oil #6		ND	mg/kg	12	6.1	EPA-8015B/FFP	ND		1
TPH - Crude Oil		ND	mg/kg	24	3.4	EPA-8015B/FFP	ND		1
TPH - Hydraulic Oil / Moto	or Oil	ND	mg/kg	24	7.9	EPA-8015B/FFP	ND		1
TPH - WD-40		ND	mg/kg	12	6.1	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)		85.0	%	30 - 130 (LC	CL - UCL)	EPA-8015B/FFP			1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B/FFP	04/05/17	04/06/17 17:58	AS1	GC-2	1.014	B[D0817	

H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284
Project Manager: Matt Pollock

Chemical Analysis

BCL Sample ID:	1708436-10	Client Sample	t Sample Name: Composite 5-W-A,5-W-B, 3/30/2017 12:00:00AM							
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#	
Solids		100	%	0.06	0.06	SM-2540G			1	

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	SM-2540G	04/06/17	04/06/17 08:30	DRC	MANUAL	1	B[D0990	

H.T. Harvey & Associates

983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Total Concentrations (TTLC)

BCL Sample ID:	1708436-10	Client Sample	Name:	Composit	e 5-W-A,5-	W-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Arsenic		1.9	mg/kg	0.61	0.21	EPA-6020	ND		1
Cadmium		0.15	mg/kg	0.31	0.059	EPA-6020	ND	J	2
Chromium		30	mg/kg	0.92	0.31	EPA-6020	ND		2
Copper		6.8	mg/kg	0.61	0.12	EPA-6020	ND		1
Lead		2.8	mg/kg	0.31	0.15	EPA-6020	ND		1
Mercury		0.031	mg/kg	0.20	0.023	EPA-7471A	ND	J	3
Nickel		31	mg/kg	0.61	0.13	EPA-6020	0.32		1
Selenium		ND	mg/kg	0.61	0.13	EPA-6020	ND		2
Silver		ND	mg/kg	0.31	0.062	EPA-6020	ND		1
Zinc		21	mg/kg	1.6	0.61	EPA-6020	0.51		1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6020	04/05/17	04/08/17 05:10	ARD	PE-EL2	0.935	B[D0341	
2	EPA-6020	04/05/17	04/10/17 17:31	GPD	PE-EL2	0.935	B[D0341	
3	EPA-7471A	04/04/17	04/04/17 12:45	MEV	CETAC2	1.008	B[D0146	

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID:	1708436-11	Client Sample	Name:	Composite	Composite 6-O-A,6-O-B, 3/30/2017 12:00:00				
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Aldrin		ND	mg/kg	0.00056	0.000062	EPA-8081A	ND		1
alpha-BHC		ND	mg/kg	0.00056	0.000072	EPA-8081A	ND		1
beta-BHC		ND	mg/kg	0.00056	0.000080	EPA-8081A	ND		1
delta-BHC		ND	mg/kg	0.00056	0.000067	EPA-8081A	ND		1
gamma-BHC (Lindane)		ND	mg/kg	0.00056	0.000038	EPA-8081A	ND		1
Chlordane (Technical)		ND	mg/kg	0.056	0.0017	EPA-8081A	ND		1
4,4'-DDD		ND	mg/kg	0.00056	0.000096	EPA-8081A	ND		1
4,4'-DDE		ND	mg/kg	0.00056	0.000094	EPA-8081A	ND		1
4,4'-DDT		ND	mg/kg	0.00056	0.000088	EPA-8081A	ND		1
Dieldrin		ND	mg/kg	0.00056	0.000079	EPA-8081A	ND		1
Endosulfan I		ND	mg/kg	0.00056	0.000098	EPA-8081A	ND		1
Endosulfan II		ND	mg/kg	0.00056	0.00012	EPA-8081A	ND		1
Endosulfan sulfate		ND	mg/kg	0.00056	0.00011	EPA-8081A	ND		1
Endrin		ND	mg/kg	0.00056	0.000098	EPA-8081A	ND		1
Endrin aldehyde		ND	mg/kg	0.00056	0.00011	EPA-8081A	ND		1
Heptachlor		ND	mg/kg	0.00056	0.000064	EPA-8081A	ND		1
Heptachlor epoxide		ND	mg/kg	0.00056	0.000088	EPA-8081A	ND		1
Methoxychlor		ND	mg/kg	0.00056	0.00012	EPA-8081A	ND		1
Toxaphene		ND	mg/kg	0.056	0.0015	EPA-8081A	ND		1
TCMX (Surrogate)		59.2	%	20 - 130 (LC	L - UCL)	EPA-8081A			1
Decachlorobiphenyl (Sur	rogate)	57.3	%	40 - 130 (LC	L - UCL)	EPA-8081A			1

					QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8081A	04/05/17	04/06/17 20:05	HKS	GC-17	1.017	B[D0815	

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H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

PCB Analysis (EPA Method 8082)

BCL Sample ID:	1708436-11	Client Sample	Name:	Composite	Composite 6-O-A,6-O-B, 3/30/2017 12:00:00AM						
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #		
PCB-1016		ND	mg/kg	0.011	0.0044	EPA-8082	ND		1		
PCB-1221		ND	mg/kg	0.011	0.0081	EPA-8082	ND		1		
PCB-1232		ND	mg/kg	0.011	0.0084	EPA-8082	ND		1		
PCB-1242		ND	mg/kg	0.011	0.0047	EPA-8082	ND		1		
PCB-1248		ND	mg/kg	0.011	0.0079	EPA-8082	ND		1		
PCB-1254		ND	mg/kg	0.011	0.0036	EPA-8082	ND		1		
PCB-1260		ND	mg/kg	0.011	0.0033	EPA-8082	ND		1		
Total PCB's (Summation	on)	ND	mg/kg	0.011	0.0056	EPA-8082	ND		1		
Decachlorobiphenyl (S	urrogate)	68.3	%	40 - 120 (LC	L - UCL)	EPA-8082			1		

			Run					
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8082	04/05/17	04/06/17 11:10	HKS	GC-15	1.003	B[D0798	

H.T. Harvey & Associates

Los Gatos, CA 95032

983 University Avenue, Building D

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

BCL Sample ID: 1708436-11	Client Sample	Name:	: Composite 6-O-A,6-O-B, 3/30/2017 12:00:00AM					
Constituent	Dry Basis Result	Unito	PQL	MDL	Method	MB	Lab	Dun #
Acenaphthene	ND ND	Units mg/kg	0.0034	0.0011	EPA-8270C-SIM	Bias ND	Quals	Run # 1
Acenaphthylene	ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Anthracene	ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Benzo[a]anthracene	ND	mg/kg	0.0034	0.0015	EPA-8270C-SIM	ND		1
Benzo[b]fluoranthene	0.0042	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Benzo[k]fluoranthene	0.0015	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND	J	1
Benzo[a]pyrene	ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Benzo[g,h,i]perylene	ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Chrysene	ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Dibenzo[a,h]anthracene	ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Fluoranthene	0.0027	mg/kg	0.0034	0.0012	EPA-8270C-SIM	ND	J	1
Fluorene	ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Indeno[1,2,3-cd]pyrene	ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Naphthalene	ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Phenanthrene	ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Pyrene	0.0031	mg/kg	0.0034	0.0018	EPA-8270C-SIM	ND	J	1
Benzo[e]pyrene	ND	mg/kg	0.0056	0.0023	EPA-8270C-SIM	ND		1
1,1-Biphenyl	ND	mg/kg	0.0056	0.0023	EPA-8270C-SIM	ND		1
2,6-Dimethylnaphthalene	ND	mg/kg	0.0056	0.0023	EPA-8270C-SIM	ND		1
1-Methylnaphthalene	ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
2-Methylnaphthalene	ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
2-Methylphenanthrene	ND	mg/kg	0.0056	0.0023	EPA-8270C-SIM	ND		1
3-Methylphenanthrene	ND	mg/kg	0.0056	0.0023	EPA-8270C-SIM	ND		1
Perylene	ND	mg/kg	0.0056	0.0023	EPA-8270C-SIM	ND		1
2,3,5-Trimethylnaphthalene	ND	mg/kg	0.0056	0.0023	EPA-8270C-SIM	ND		1
Total Low (MW) PAHs	ND	mg/kg	0.0056	0.0023	EPA-8270C-SIM	ND		1
Total High (MW) PAHs	0.011	mg/kg	0.0056	0.0023	EPA-8270C-SIM	ND		1
Total PAHs	0.011	mg/kg	0.0056	0.0023	EPA-8270C-SIM	ND		1
Nitrobenzene-d5 (Surrogate)	73.0	%	30 - 110 (LC	L - UCL)	EPA-8270C-SIM			1
2-Fluorobiphenyl (Surrogate)	70.0	%	40 - 120 (LC	L - UCL)	EPA-8270C-SIM			1
p-Terphenyl-d14 (Surrogate)	67.0	%	30 - 120 (LC	L - UCL)	EPA-8270C-SIM			1



H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284
Project Manager: Matt Pollock

BCL Sample ID): 1708436-11	Client Sai	mple Name:	Composite 6-0	O-A,6-O-B, 3/30	/2017 12:00:	:00AM	
Run#	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-8270C-SIM	04/05/17	04/11/17 19:44	EO1	MS-B7	1.017	B[D0904	

H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284 Project Manager: Matt Pollock

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-11	Client Sample	Name:	Composite 6-O-A,6-O-B, 3/30/2017 12:00:00AM						
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #	
Gasoline Range Organ	nics (C4 - C12)	ND	mg/kg	1.1	0.32	EPA-8015B	ND	·	1	
a,a,a-Trifluorotoluene	(FID Surrogate)	112	%	70 - 130 (LC	L - UCL)	EPA-8015B			1	

			Run					
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	04/05/17	04/05/17 12:48	AKM	GC-V8	1	B[D0037	

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H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-11	Client Sample	Name:	Composit	Composite 6-O-A,6-O-B, 3/30/2017 12:00:00AM						
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #		
TPH - Light Naptha		ND	mg/kg	56	23	EPA-8015B/FFP	ND		1		
TPH - Aviation Gas		ND	mg/kg	56	23	EPA-8015B/FFP	ND		1		
TPH - Stoddard Solvent		ND	mg/kg	23	5.6	EPA-8015B/FFP	ND		1		
TPH - Heavy Naptha		ND	mg/kg	11	5.6	EPA-8015B/FFP	ND		1		
TPH - Gasoline		ND	mg/kg	23	5.6	EPA-8015B/FFP	ND		1		
TPH - Jet Fuel (JP4)		ND	mg/kg	11	5.6	EPA-8015B/FFP	ND		1		
TPH - Jet Fuel (JP5)		ND	mg/kg	11	5.2	EPA-8015B/FFP	ND		1		
TPH - Jet Fuel (JP8)		ND	mg/kg	11	5.6	EPA-8015B/FFP	ND		1		
TPH - Kerosene		ND	mg/kg	11	1.6	EPA-8015B/FFP	ND		1		
TPH - Diesel (FFP)		ND	mg/kg	11	1.4	EPA-8015B/FFP	ND		1		
TPH - Fuel Oil #6		ND	mg/kg	11	5.6	EPA-8015B/FFP	ND		1		
TPH - Crude Oil		ND	mg/kg	23	3.2	EPA-8015B/FFP	ND		1		
TPH - Hydraulic Oil / Moto	or Oil	ND	mg/kg	23	7.3	EPA-8015B/FFP	ND		1		
TPH - WD-40		ND	mg/kg	11	5.6	EPA-8015B/FFP	ND		1		
Tetracosane (Surrogate)		93.5	%	30 - 130 (LC	L - UCL)	EPA-8015B/FFP			1		

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B/FFP	04/05/17	04/06/17 18:21	AS1	GC-2	1.007	B[D0817	

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Chemical Analysis

BCL Sample ID:	1708436-11	Client Sample	Name:	Composite	e 6-O-A,6-0	O-B, 3/30/2017			
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Solids		100	%	0.06	0.06	SM-2540G			1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	SM-2540G	04/06/17	04/06/17 08:30	DRC	MANUAL	1	B[D0990	

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H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Project: Alameda Point
Project Number: 15284
Project Manager: Matt Pollock

04/14/2017 10:38

Reported:

Total Concentrations (TTLC)

BCL Sample ID:	1708436-11	Client Sample	Name:	Composit	e 6-O-A,6-0	O-B, 3/30/2017 1	2:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Arsenic		1.6	mg/kg	0.56	0.19	EPA-6020	ND		1
Cadmium		0.12	mg/kg	0.28	0.054	EPA-6020	ND	J	2
Chromium		27	mg/kg	0.85	0.28	EPA-6020	ND		2
Copper		4.8	mg/kg	0.56	0.11	EPA-6020	ND		1
Lead		2.2	mg/kg	0.28	0.14	EPA-6020	ND		1
Mercury		ND	mg/kg	0.18	0.021	EPA-7471A	ND		3
Nickel		24	mg/kg	0.56	0.12	EPA-6020	0.33		1
Selenium		ND	mg/kg	0.56	0.12	EPA-6020	ND		2
Silver		ND	mg/kg	0.28	0.058	EPA-6020	ND		1
Zinc		15	mg/kg	1.5	0.56	EPA-6020	0.53		1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6020	04/05/17	04/08/17 05:14	ARD	PE-EL2	0.971	B[D0341	
2	EPA-6020	04/05/17	04/10/17 17:45	GPD	PE-EL2	0.971	B[D0341	
3	EPA-7471A	04/04/17	04/04/17 12:47	MEV	CETAC2	1.025	B[D0146	

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID:	1708436-12	Client Sample	Name:	Composite 6-W-A,6-W-B, 3/30/2017 12:00:00AM					
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Aldrin		ND	mg/kg	0.00066	0.000073	EPA-8081A	ND		1
alpha-BHC		ND	mg/kg	0.00066	0.000084	EPA-8081A	ND		1
beta-BHC		ND	mg/kg	0.00066	0.000094	EPA-8081A	ND		1
delta-BHC		ND	mg/kg	0.00066	0.000078	EPA-8081A	ND		1
gamma-BHC (Lindane)		ND	mg/kg	0.00066	0.000045	EPA-8081A	ND		1
Chlordane (Technical)		ND	mg/kg	0.066	0.0020	EPA-8081A	ND		1
4,4'-DDD		ND	mg/kg	0.00066	0.00011	EPA-8081A	ND		1
4,4'-DDE		ND	mg/kg	0.00066	0.00011	EPA-8081A	ND		1
4,4'-DDT		ND	mg/kg	0.00066	0.00010	EPA-8081A	ND		1
Dieldrin		ND	mg/kg	0.00066	0.000092	EPA-8081A	ND		1
Endosulfan I		ND	mg/kg	0.00066	0.00011	EPA-8081A	ND		1
Endosulfan II		ND	mg/kg	0.00066	0.00015	EPA-8081A	ND		1
Endosulfan sulfate		ND	mg/kg	0.00066	0.00013	EPA-8081A	ND		1
Endrin		ND	mg/kg	0.00066	0.00011	EPA-8081A	ND		1
Endrin aldehyde		ND	mg/kg	0.00066	0.00013	EPA-8081A	ND		1
Heptachlor		ND	mg/kg	0.00066	0.000075	EPA-8081A	ND		1
Heptachlor epoxide		ND	mg/kg	0.00066	0.00010	EPA-8081A	ND		1
Methoxychlor		ND	mg/kg	0.00066	0.00015	EPA-8081A	ND		1
Toxaphene		ND	mg/kg	0.066	0.0017	EPA-8081A	ND		1
TCMX (Surrogate)		29.1	%	20 - 130 (LCI	L - UCL)	EPA-8081A			1
Decachlorobiphenyl (Sur	rogate)	48.9	%	40 - 130 (LCI	L - UCL)	EPA-8081A			1

		Run			QC			
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8081A	04/05/17	04/06/17 20:19	HKS	GC-17	1.017	B[D0815	

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H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

PCB Analysis (EPA Method 8082)

BCL Sample ID:	1708436-12	Client Sample	Name:	Composite 6-W-A,6-W-B, 3/30/2017 12:00:00AM							
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #		
PCB-1016		ND	mg/kg	0.013	0.0051	EPA-8082	ND		1		
PCB-1221		ND	mg/kg	0.013	0.0095	EPA-8082	ND		1		
PCB-1232		ND	mg/kg	0.013	0.0098	EPA-8082	ND		1		
PCB-1242		ND	mg/kg	0.013	0.0055	EPA-8082	ND		1		
PCB-1248		ND	mg/kg	0.013	0.0092	EPA-8082	ND		1		
PCB-1254		ND	mg/kg	0.013	0.0042	EPA-8082	ND		1		
PCB-1260		ND	mg/kg	0.013	0.0038	EPA-8082	ND		1		
Total PCB's (Summatio	n)	ND	mg/kg	0.013	0.0066	EPA-8082	ND		1		
Decachlorobiphenyl (Su	ırrogate)	33.3	%	40 - 120 (LC	L - UCL)	EPA-8082		S09	1		

			Run	•		•		
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8082	04/05/17	04/06/17 11:20	HKS	GC-15	1.003	B[D0798	

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H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

BCL Sample ID:	1708436-12	Client Sample	Name:	Composite	Composite 6-W-A,6-W-B, 3/30/2017 12:00:00AM					
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #	
Acenaphthene		ND	mg/kg	0.0040	0.0013	EPA-8270C-SIM	ND	Quais	1	
Acenaphthylene		ND	mg/kg	0.0040	0.0013	EPA-8270C-SIM	ND		1	
Anthracene		0.0035	mg/kg	0.0040	0.0013	EPA-8270C-SIM	ND	J	1	
Benzo[a]anthracene		0.0074	mg/kg	0.0040	0.0017	EPA-8270C-SIM	ND		1	
Benzo[b]fluoranthene		0.013	mg/kg	0.0040	0.0013	EPA-8270C-SIM	ND		1	
Benzo[k]fluoranthene		0.0044	mg/kg	0.0040	0.0013	EPA-8270C-SIM	ND		1	
Benzo[a]pyrene		0.010	mg/kg	0.0040	0.0013	EPA-8270C-SIM	ND		1	
Benzo[g,h,i]perylene		0.0092	mg/kg	0.0040	0.0013	EPA-8270C-SIM	ND		1	
Chrysene		0.0061	mg/kg	0.0040	0.0013	EPA-8270C-SIM	ND		1	
Dibenzo[a,h]anthracene		ND	mg/kg	0.0040	0.0013	EPA-8270C-SIM	ND		1	
Fluoranthene		0.016	mg/kg	0.0040	0.0015	EPA-8270C-SIM	ND		1	
Fluorene		ND	mg/kg	0.0040	0.0013	EPA-8270C-SIM	ND		1	
Indeno[1,2,3-cd]pyrene		0.0074	mg/kg	0.0040	0.0013	EPA-8270C-SIM	ND		1	
Naphthalene		ND	mg/kg	0.0040	0.0013	EPA-8270C-SIM	ND		1	
Phenanthrene		0.0052	mg/kg	0.0040	0.0013	EPA-8270C-SIM	ND		1	
Pyrene		0.024	mg/kg	0.0040	0.0021	EPA-8270C-SIM	ND		1	
Benzo[e]pyrene		ND	mg/kg	0.0066	0.0026	EPA-8270C-SIM	ND		1	
1,1-Biphenyl		ND	mg/kg	0.0066	0.0026	EPA-8270C-SIM	ND		1	
2,6-Dimethylnaphthalene		ND	mg/kg	0.0066	0.0026	EPA-8270C-SIM	ND		1	
1-Methylnaphthalene		ND	mg/kg	0.0040	0.0013	EPA-8270C-SIM	ND		1	
2-Methylnaphthalene		ND	mg/kg	0.0040	0.0013	EPA-8270C-SIM	ND		1	
2-Methylphenanthrene		ND	mg/kg	0.0066	0.0026	EPA-8270C-SIM	ND		1	
3-Methylphenanthrene		ND	mg/kg	0.0066	0.0026	EPA-8270C-SIM	ND		1	
Perylene		0.0026	mg/kg	0.0066	0.0026	EPA-8270C-SIM	ND	J	1	
2,3,5-Trimethylnaphthaler	ne	ND	mg/kg	0.0066	0.0026	EPA-8270C-SIM	ND		1	
Total Low (MW) PAHs		0.0087	mg/kg	0.0066	0.0026	EPA-8270C-SIM	ND		1	
Total High (MW) PAHs		0.11	mg/kg	0.0066	0.0026	EPA-8270C-SIM	ND		1	
Total PAHs		0.11	mg/kg	0.0066	0.0026	EPA-8270C-SIM	ND		1	
Nitrobenzene-d5 (Surroga	ite)	51.9	%	30 - 110 (LC	L - UCL)	EPA-8270C-SIM			1	
2-Fluorobiphenyl (Surroga	ate)	46.8	%	40 - 120 (LC	L - UCL)	EPA-8270C-SIM			1	
p-Terphenyl-d14 (Surroga	ite)	46.8	%	30 - 120 (LC	L - UCL)	EPA-8270C-SIM			1	



Reported: 04/14/2017 10:38

Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

BCL Sample II) : 1708436-12	Client Sar	mple Name:	Composite 6-\	N-A,6-W-B, 3/30	:00AM		
Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-8270C-SIM	04/05/17	04/11/17 20:09) EO1	MS-B7	0.993	B[D0904	

H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284 Project Manager: Matt Pollock

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-12	Client Sample	Sample Name: Composite 6-W-A,6-W-B, 3/30/2017 12:00:00AM						
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB	Lab	Dun #
Gasoline Range Organ	nics (C4 - C12)	ND	mg/kg	1.3	0.37	EPA-8015B	Bias ND	Quals	Run # 1
a,a,a-Trifluorotoluene	(FID Surrogate)	125	%	70 - 130 (LC	L - UCL)	EPA-8015B			1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	04/05/17	04/05/17 18:06	AKM	GC-V8	1	B[D0037	

Reported: 04/14/2017 10:38

Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-12	Client Sample	Name:	Composite	Composite 6-W-A,6-W-B, 3/30/2017 12:00:00AM						
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #		
TPH - Light Naptha		ND	mg/kg	66	26	EPA-8015B/FFP	ND		1		
TPH - Aviation Gas		ND	mg/kg	66	26	EPA-8015B/FFP	ND		1		
TPH - Stoddard Solvent		ND	mg/kg	26	6.6	EPA-8015B/FFP	ND		1		
TPH - Heavy Naptha		ND	mg/kg	13	6.6	EPA-8015B/FFP	ND		1		
TPH - Gasoline		ND	mg/kg	26	6.6	EPA-8015B/FFP	ND		1		
TPH - Jet Fuel (JP4)		ND	mg/kg	13	6.6	EPA-8015B/FFP	ND		1		
TPH - Jet Fuel (JP5)		ND	mg/kg	13	6.1	EPA-8015B/FFP	ND		1		
TPH - Jet Fuel (JP8)		ND	mg/kg	13	6.6	EPA-8015B/FFP	ND		1		
TPH - Kerosene		ND	mg/kg	13	1.8	EPA-8015B/FFP	ND		1		
TPH - Diesel (FFP)		ND	mg/kg	13	1.6	EPA-8015B/FFP	ND		1		
TPH - Fuel Oil #6		ND	mg/kg	13	6.6	EPA-8015B/FFP	ND		1		
TPH - Crude Oil		ND	mg/kg	26	3.7	EPA-8015B/FFP	ND		1		
TPH - Hydraulic Oil / Moto	r Oil	ND	mg/kg	26	8.6	EPA-8015B/FFP	ND		1		
TPH - WD-40		ND	mg/kg	13	6.6	EPA-8015B/FFP	ND		1		
Tetracosane (Surrogate)		90.1	%	30 - 130 (LC	L - UCL)	EPA-8015B/FFP			1		

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B/FFP	04/05/17	04/06/17 18:44	AS1	GC-2	1.014	B[D0817	

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H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Chemical Analysis

BCL Sample ID:	1708436-12	Client Sample	Name:	Composite	e 6-W-A,6-	W-B, 3/30/2017			
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Solids		100	%	0.07	0.07	SM-2540G			1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	SM-2540G	04/13/17	04/13/17 07:30	DRC	MANUAL	1	B[D1238	

Reported: 04/14/2017 10:38

Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Total Concentrations (TTLC)

BCL Sample ID:	1708436-12	Client Sample	Name:	Composite	Composite 6-W-A,6-W-B, 3/30/2017 12:00:00AM						
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #		
Arsenic		2.4	mg/kg	0.66	0.22	EPA-6020	ND		1		
Cadmium		0.18	mg/kg	0.33	0.063	EPA-6020	ND	J	2		
Chromium		36	mg/kg	0.99	0.33	EPA-6020	ND		2		
Copper		8.2	mg/kg	0.66	0.13	EPA-6020	ND		1		
Lead		5.6	mg/kg	0.33	0.16	EPA-6020	ND		1		
Mercury		0.035	mg/kg	0.21	0.025	EPA-7471A	ND	J	3		
Nickel		32	mg/kg	0.66	0.15	EPA-6020	0.32		1		
Selenium		ND	mg/kg	0.66	0.15	EPA-6020	ND		2		
Silver		ND	mg/kg	0.33	0.067	EPA-6020	ND		1		
Zinc		26	mg/kg	1.7	0.66	EPA-6020	0.52		1		

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6020	04/05/17	04/08/17 05:17	ARD	PE-EL2	0.952	B[D0341	
2	EPA-6020	04/05/17	04/10/17 17:48	GPD	PE-EL2	0.952	B[D0341	
3	EPA-7471A	04/04/17	04/04/17 12:50	MEV	CETAC2	1.025	B[D0146	

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Organochlorine Pesticides (EPA Method 8081A)

Constituent Aldrin		Dry Basis Result							
Aldrin			Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
		ND	mg/kg	0.00057	0.000062	EPA-8081A	ND		1
alpha-BHC		ND	mg/kg	0.00057	0.000072	EPA-8081A	ND		1
beta-BHC		ND	mg/kg	0.00057	0.000080	EPA-8081A	ND		1
delta-BHC		ND	mg/kg	0.00057	0.000067	EPA-8081A	ND		1
gamma-BHC (Lindane)		ND	mg/kg	0.00057	0.000038	EPA-8081A	ND		1
Chlordane (Technical)		ND	mg/kg	0.057	0.0017	EPA-8081A	ND		1
4,4'-DDD		ND	mg/kg	0.00057	0.000096	EPA-8081A	ND		1
4,4'-DDE		ND	mg/kg	0.00057	0.000094	EPA-8081A	ND		1
4,4'-DDT		ND	mg/kg	0.00057	0.000088	EPA-8081A	ND		1
Dieldrin		ND	mg/kg	0.00057	0.000079	EPA-8081A	ND		1
Endosulfan I		ND	mg/kg	0.00057	0.000098	EPA-8081A	ND		1
Endosulfan II		ND	mg/kg	0.00057	0.00012	EPA-8081A	ND		1
Endosulfan sulfate		ND	mg/kg	0.00057	0.00011	EPA-8081A	ND		1
Endrin		ND	mg/kg	0.00057	0.000098	EPA-8081A	ND		1
Endrin aldehyde		ND	mg/kg	0.00057	0.00011	EPA-8081A	ND		1
Heptachlor		ND	mg/kg	0.00057	0.000064	EPA-8081A	ND		1
Heptachlor epoxide		ND	mg/kg	0.00057	0.000088	EPA-8081A	ND		1
Methoxychlor		ND	mg/kg	0.00057	0.00012	EPA-8081A	ND		1
Toxaphene		ND	mg/kg	0.057	0.0015	EPA-8081A	ND		1
TCMX (Surrogate)		46.9	%	20 - 130 (LC	L - UCL)	EPA-8081A			1
Decachlorobiphenyl (Surroga	ate)	48.8	%	40 - 130 (LC	L - UCL)	EPA-8081A			1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8081A	04/05/17	04/06/17 20:34	HKS	GC-17	0.993	B[D0815	

MU

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

PCB Analysis (EPA Method 8082)

BCL Sample ID:	1708436-13	Client Sample	Name:	Composite	Composite 7-O-A,7-O-B, 3/30/2017 12:00:00AM						
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #		
PCB-1016		ND	mg/kg	0.011	0.0044	EPA-8082	ND		1		
PCB-1221		ND	mg/kg	0.011	0.0081	EPA-8082	ND		1		
PCB-1232		ND	mg/kg	0.011	0.0084	EPA-8082	ND		1		
PCB-1242		ND	mg/kg	0.011	0.0047	EPA-8082	ND		1		
PCB-1248		ND	mg/kg	0.011	0.0079	EPA-8082	ND		1		
PCB-1254		ND	mg/kg	0.011	0.0036	EPA-8082	ND		1		
PCB-1260		ND	mg/kg	0.011	0.0033	EPA-8082	ND		1		
Total PCB's (Summation	۱)	ND	mg/kg	0.011	0.0057	EPA-8082	ND		1		
Decachlorobiphenyl (Su	rrogate)	31.7	%	40 - 120 (LC	L - UCL)	EPA-8082		S09	1		

			Run					
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8082	04/05/17	04/06/17 11:31	HKS	GC-15	1.010	B[D0798	



Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

BCL Sample ID:	1708436-13	Client Sample	Name:	Composite					
•		Dry Basis					MB	Lab	
Constituent Acenaphthene		Result ND	Units mg/kg	PQL 0.0034	MDL 0.0011	Method EPA-8270C-SIM	Bias ND	Quals	Run #
Acenaphthylene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		<u></u> 1
Anthracene		0.0027	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND	J	
Benzo[a]anthracene		0.0027	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Benzo[b]fluoranthene		0.010		0.0034	0.0013	EPA-8270C-SIM	ND		1
			mg/kg			EPA-8270C-SIM			1
Benzo[k]fluoranthene		0.0042	mg/kg	0.0034	0.0011		ND		1
Benzo[a]pyrene		0.010	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Benzo[g,h,i]perylene		0.0076	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Chrysene		0.0061	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Dibenzo[a,h]anthracene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Fluoranthene		0.014	mg/kg	0.0034	0.0012	EPA-8270C-SIM	ND		1
Fluorene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Indeno[1,2,3-cd]pyrene		0.0061	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Naphthalene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Phenanthrene		0.0049	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Pyrene		0.021	mg/kg	0.0034	0.0018	EPA-8270C-SIM	ND		1
Benzo[e]pyrene		ND	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
1,1-Biphenyl		ND	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
2,6-Dimethylnaphthalene		ND	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
1-Methylnaphthalene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
2-Methylnaphthalene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
2-Methylphenanthrene		ND	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
3-Methylphenanthrene		ND	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
Perylene		0.0027	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND	J	1
2,3,5-Trimethylnaphthalen	e	ND	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
Total Low (MW) PAHs		0.0076	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
Total High (MW) PAHs		0.091	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
Total PAHs		0.099	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
Nitrobenzene-d5 (Surroga	te)	63.5	%	30 - 110 (LC	L - UCL)	EPA-8270C-SIM			1
2-Fluorobiphenyl (Surroga	te)	52.8	%	40 - 120 (LC	L - UCL)	EPA-8270C-SIM			1
p-Terphenyl-d14 (Surroga	te)	58.5	%	30 - 120 (LC	L - UCL)	EPA-8270C-SIM			1



Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

BCL Sample ID): 1708436-13	Client Sar	mple Name:	Composite 7-0				
Run#	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-8270C-SIM	04/05/17	04/11/17 20:33	B E01	MS-B7	1.010	B[D0904	

H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284 Project Manager: Matt Pollock

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID: 1708436-13 Client Sample Name:				Composite	e 7-O-A,7-					
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #	
Gasoline Range Organ	nics (C4 - C12)	ND	mg/kg	1.1	0.32	EPA-8015B	ND		1	
a,a,a-Trifluorotoluene	(FID Surrogate)	87.5	%	70 - 130 (LC	L - UCL)	EPA-8015B			1	

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	04/04/17	04/04/17 16:15	AKM	GC-V8	1	B[D0037	

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-13	Client Sample	Name:	Composit	e 7-O-A,7-	O-B, 3/30/2017 12	2:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Light Naptha		ND	mg/kg	57	23	EPA-8015B/FFP	ND		1
TPH - Aviation Gas		ND	mg/kg	57	23	EPA-8015B/FFP	ND		1
TPH - Stoddard Solvent		ND	mg/kg	23	5.7	EPA-8015B/FFP	ND		1
TPH - Heavy Naptha		ND	mg/kg	11	5.7	EPA-8015B/FFP	ND		1
TPH - Gasoline		ND	mg/kg	23	5.7	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP4)		ND	mg/kg	11	5.7	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP5)		ND	mg/kg	11	5.2	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP8)		ND	mg/kg	11	5.7	EPA-8015B/FFP	ND		1
TPH - Kerosene		ND	mg/kg	11	1.6	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)		ND	mg/kg	11	1.4	EPA-8015B/FFP	ND		1
TPH - Fuel Oil #6		ND	mg/kg	11	5.7	EPA-8015B/FFP	ND		1
TPH - Crude Oil		ND	mg/kg	23	3.2	EPA-8015B/FFP	ND		1
TPH - Hydraulic Oil / Moto	or Oil	ND	mg/kg	23	7.4	EPA-8015B/FFP	ND		1
TPH - WD-40		ND	mg/kg	11	5.7	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)		81.7	%	30 - 130 (LC	L - UCL)	EPA-8015B/FFP			1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B/FFP	04/05/17	04/06/17 19:07	AS1	GC-2	1.014	B[D0817	

H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284
Project Manager: Matt Pollock

Chemical Analysis

BCL Sample ID:	1708436-13	Client Sample	ample Name: Composite 7-O-A,7-O-B, 3/30/2017 12:00:00AM						
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Solids	_	100	%	0.06	0.06	SM-2540G	_	_	1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	SM-2540G	04/06/17	04/06/17 08:30	DRC	MANUAL	1	B[D0990	

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Total Concentrations (TTLC)

BCL Sample ID:	1708436-13	Client Sample	Name:	Composite	e 7-O-A,7-0	O-B, 3/30/2017 1	2:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Arsenic		1.8	mg/kg	0.57	0.19	EPA-6020	ND		1
Cadmium		0.18	mg/kg	0.28	0.054	EPA-6020	ND	J	2
Chromium		35	mg/kg	0.85	0.28	EPA-6020	ND		2
Copper		8.0	mg/kg	0.57	0.11	EPA-6020	ND		1
Lead		3.8	mg/kg	0.28	0.14	EPA-6020	ND		1
Mercury		ND	mg/kg	0.18	0.021	EPA-7471A	ND		3
Nickel		31	mg/kg	0.57	0.12	EPA-6020	0.32		1
Selenium		0.12	mg/kg	0.57	0.12	EPA-6020	ND	J	2
Silver		ND	mg/kg	0.28	0.058	EPA-6020	ND		1
Zinc		23	mg/kg	1.5	0.57	EPA-6020	0.52		1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6020	04/05/17	04/08/17 05:34	ARD	PE-EL2	0.943	B[D0341	
2	EPA-6020	04/05/17	04/10/17 17:52	GPD	PE-EL2	0.943	B[D0341	
3	EPA-7471A	04/04/17	04/04/17 12:52	MEV	CETAC2	1.008	B[D0146	

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID:	1708436-14	Client Sample	Name:	Composite	e 7-W-A,7-V	V-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Aldrin		ND	mg/kg	0.00056	0.000062	EPA-8081A	ND		1
alpha-BHC		ND	mg/kg	0.00056	0.000072	EPA-8081A	ND		1
beta-BHC		ND	mg/kg	0.00056	0.000080	EPA-8081A	ND		1
delta-BHC		ND	mg/kg	0.00056	0.000066	EPA-8081A	ND		1
gamma-BHC (Lindane)		ND	mg/kg	0.00056	0.000038	EPA-8081A	ND		1
Chlordane (Technical)		ND	mg/kg	0.056	0.0017	EPA-8081A	ND		1
4,4'-DDD		ND	mg/kg	0.00056	0.000096	EPA-8081A	ND		1
4,4'-DDE		ND	mg/kg	0.00056	0.000093	EPA-8081A	ND		1
4,4'-DDT		ND	mg/kg	0.00056	0.000088	EPA-8081A	ND		1
Dieldrin		ND	mg/kg	0.00056	0.000079	EPA-8081A	ND		1
Endosulfan I		ND	mg/kg	0.00056	0.000098	EPA-8081A	ND		1
Endosulfan II		ND	mg/kg	0.00056	0.00012	EPA-8081A	ND		1
Endosulfan sulfate		ND	mg/kg	0.00056	0.00011	EPA-8081A	ND		1
Endrin		ND	mg/kg	0.00056	0.000098	EPA-8081A	ND		1
Endrin aldehyde		ND	mg/kg	0.00056	0.00011	EPA-8081A	ND		1
Heptachlor		ND	mg/kg	0.00056	0.000064	EPA-8081A	ND		1
Heptachlor epoxide		ND	mg/kg	0.00056	0.000088	EPA-8081A	ND		1
Methoxychlor		ND	mg/kg	0.00056	0.00012	EPA-8081A	ND		1
Toxaphene		ND	mg/kg	0.056	0.0015	EPA-8081A	ND		1
TCMX (Surrogate)		51.8	%	20 - 130 (LCI	UCL)	EPA-8081A			1
Decachlorobiphenyl (Sur	rogate)	45.9	%	40 - 130 (LCI	UCL)	EPA-8081A			1

			Run					
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8081A	04/05/17	04/06/17 20:49	HKS	GC-17	1.007	B[D0815	

Reported: 04/14/2017 10:38

Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

PCB Analysis (EPA Method 8082)

BCL Sample ID:	1708436-14	Client Sample	Name:	Composite	e 7-W-A,7-	W-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
PCB-1016		ND	mg/kg	0.011	0.0044	EPA-8082	ND		1
PCB-1221		ND	mg/kg	0.011	0.0081	EPA-8082	ND		1
PCB-1232		ND	mg/kg	0.011	0.0083	EPA-8082	ND		1
PCB-1242		ND	mg/kg	0.011	0.0047	EPA-8082	ND		1
PCB-1248		ND	mg/kg	0.011	0.0079	EPA-8082	ND		1
PCB-1254		ND	mg/kg	0.011	0.0036	EPA-8082	ND		1
PCB-1260		ND	mg/kg	0.011	0.0033	EPA-8082	ND		1
Total PCB's (Summatio	n)	ND	mg/kg	0.011	0.0056	EPA-8082	ND		1
Decachlorobiphenyl (Su	ırrogate)	50.0	%	40 - 120 (LC	L - UCL)	EPA-8082			1

			Run	•		•	QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8082	04/05/17	04/06/17 11:41	HKS	GC-15	1.017	B[D0798	



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H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

BCL Sample ID:	1708436-14	Client Sample	Name:	Composite	e 7-W-A,7-	W-B, 3/30/2017 1	2:00:00AM		
Constituent		Dry Basis	Heite	PQL	MDL	Method	MB	Lab	Dun #
Constituent Acenaphthene		Result ND	Units mg/kg	0.0034	0.0011	EPA-8270C-SIM	Bias ND	Quals	Run #
Acenaphthylene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Anthracene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Benzo[a]anthracene		ND	mg/kg	0.0034	0.0015	EPA-8270C-SIM	ND		1
Benzo[b]fluoranthene		0.0039	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Benzo[k]fluoranthene		0.0018	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND	J	1
Benzo[a]pyrene		0.0028	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND	J	1
Benzo[g,h,i]perylene		0.0036	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Chrysene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Dibenzo[a,h]anthracene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Fluoranthene		0.0032	mg/kg	0.0034	0.0012	EPA-8270C-SIM	ND	J	1
Fluorene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Indeno[1,2,3-cd]pyrene		0.0036	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Naphthalene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Phenanthrene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Pyrene		0.0043	mg/kg	0.0034	0.0018	EPA-8270C-SIM	ND		1
Benzo[e]pyrene		ND	mg/kg	0.0056	0.0022	EPA-8270C-SIM	ND		1
1,1-Biphenyl		ND	mg/kg	0.0056	0.0022	EPA-8270C-SIM	ND		1
2,6-Dimethylnaphthalene	•	ND	mg/kg	0.0056	0.0022	EPA-8270C-SIM	ND		1
1-Methylnaphthalene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
2-Methylnaphthalene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
2-Methylphenanthrene		ND	mg/kg	0.0056	0.0022	EPA-8270C-SIM	ND		1
3-Methylphenanthrene		ND	mg/kg	0.0056	0.0022	EPA-8270C-SIM	ND		1
Perylene		ND	mg/kg	0.0056	0.0022	EPA-8270C-SIM	ND		1
2,3,5-Trimethylnaphthale	ene	ND	mg/kg	0.0056	0.0022	EPA-8270C-SIM	ND		1
Total Low (MW) PAHs		ND	mg/kg	0.0056	0.0022	EPA-8270C-SIM	ND		1
Total High (MW) PAHs		0.023	mg/kg	0.0056	0.0022	EPA-8270C-SIM	ND		1
Total PAHs		0.023	mg/kg	0.0056	0.0022	EPA-8270C-SIM	ND		1
Nitrobenzene-d5 (Surrog	ate)	62.2	%	30 - 110 (LC	L - UCL)	EPA-8270C-SIM			1
2-Fluorobiphenyl (Surrog	gate)	51.4	%	40 - 120 (LC	L - UCL)	EPA-8270C-SIM			1
p-Terphenyl-d14 (Surrog	ate)	54.2	%	30 - 120 (LC	L - UCL)	EPA-8270C-SIM			1



Reported: 04/14/2017 10:38

Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

BCL Sample ID	1708436-14	Client Sar	nple Name:	Composite 7-W-A,7-W-B, 3/30/2017 12:00:00AM						
Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID			
1	EPA-8270C-SIM	04/05/17	04/11/17 20:57	7 EO1	MS-B7	0.950	B[D0904			

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-14	Client Sample	Name:	Composite	Composite 7-W-A,7-W-B, 3/30/2017 12:00:00AM					
		Dry Basis					МВ	Lab		
Constituent		Result	Units	PQL	MDL	Method	Bias	Quals	Run#	
Gasoline Range Organ	ics (C4 - C12)	ND	mg/kg	1.1	0.31	EPA-8015B	ND		1	
a,a,a-Trifluorotoluene (FID Surrogate)	128	%	70 - 130 (LCI	L - UCL)	EPA-8015B			1	

			Run			QC				
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID			
1	EPA-8015B	04/04/17	04/04/17 16:36	AKM	GC-V8	1	B[D0037			

MU

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-14	Client Sample	Name:	Composit	e 7-W-A,7-	W-B, 3/30/2017 1	2:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Light Naptha		ND	mg/kg	56	22	EPA-8015B/FFP	ND	·	1
TPH - Aviation Gas		ND	mg/kg	56	22	EPA-8015B/FFP	ND		1
TPH - Stoddard Solvent		ND	mg/kg	22	5.6	EPA-8015B/FFP	ND		1
TPH - Heavy Naptha		ND	mg/kg	11	5.6	EPA-8015B/FFP	ND		1
TPH - Gasoline		ND	mg/kg	22	5.6	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP4)		ND	mg/kg	11	5.6	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP5)		ND	mg/kg	11	5.2	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP8)		ND	mg/kg	11	5.6	EPA-8015B/FFP	ND		1
TPH - Kerosene		ND	mg/kg	11	1.6	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)		ND	mg/kg	11	1.3	EPA-8015B/FFP	ND		1
TPH - Fuel Oil #6		ND	mg/kg	11	5.6	EPA-8015B/FFP	ND		1
TPH - Crude Oil		ND	mg/kg	22	3.1	EPA-8015B/FFP	ND		1
TPH - Hydraulic Oil / Moto	or Oil	ND	mg/kg	22	7.3	EPA-8015B/FFP	ND		1
TPH - WD-40		ND	mg/kg	11	5.6	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)		99.4	%	30 - 130 (LC	L - UCL)	EPA-8015B/FFP			1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B/FFP	04/05/17	04/06/17 20:16	AS1	GC-2	0.984	B[D0817	

MU

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38
Project: Alameda Point
Project Number: 15284

Project Number: 15284 Project Manager: Matt Pollock

Chemical Analysis

BCL Sample ID:	1708436-14	Client Sample	ent Sample Name: Composite 7-W-A,7-W-B, 3/30/2017 12:00:00AM						
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Solids		100	%	0.06	0.06	SM-2540G			1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	SM-2540G	04/06/17	04/06/17 08:30	DRC	MANUAL	1	B[D0990	

H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284
Project Manager: Matt Pollock

Total Concentrations (TTLC)

BCL Sample ID:	1708436-14	Client Sample	Name:	Composit	e 7-W-A,7-	W-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Arsenic		1.6	mg/kg	0.56	0.19	EPA-6020	ND		1
Cadmium		0.097	mg/kg	0.28	0.054	EPA-6020	ND	J	2
Chromium		26	mg/kg	0.84	0.28	EPA-6020	ND		2
Copper		5.0	mg/kg	0.56	0.11	EPA-6020	ND		1
Lead		2.0	mg/kg	0.28	0.13	EPA-6020	ND		1
Mercury		ND	mg/kg	0.18	0.021	EPA-7471A	ND		3
Nickel		23	mg/kg	0.56	0.12	EPA-6020	0.31		1
Selenium		0.12	mg/kg	0.56	0.12	EPA-6020	ND	J	2
Silver		ND	mg/kg	0.28	0.057	EPA-6020	ND		1
Zinc		15	mg/kg	1.5	0.56	EPA-6020	0.51		1

			Run		_		QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6020	04/05/17	04/08/17 05:38	ARD	PE-EL2	0.917	B[D0341	
2	EPA-6020	04/05/17	04/10/17 17:55	GPD	PE-EL2	0.917	B[D0341	
3	EPA-7471A	04/04/17	04/04/17 12:54	MEV	CETAC2	0.992	B[D0146	

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID:	1708436-15	Client Sample	Name:	Composite	Composite 8-O-A,8-O-B, 3/30/2017 12:00:00A				
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Aldrin		ND	mg/kg	0.0011	0.00012	EPA-8081A	ND	A10	1
alpha-BHC		ND	mg/kg	0.0011	0.00014	EPA-8081A	ND	A10	1
beta-BHC		ND	mg/kg	0.0011	0.00016	EPA-8081A	ND	A10	1
delta-BHC		ND	mg/kg	0.0011	0.00013	EPA-8081A	ND	A10	1
gamma-BHC (Lindane)		ND	mg/kg	0.0011	0.000077	EPA-8081A	ND	A10	1
Chlordane (Technical)		ND	mg/kg	0.11	0.0034	EPA-8081A	ND	A10	1
4,4'-DDD		ND	mg/kg	0.0011	0.00019	EPA-8081A	ND	A10	1
4,4'-DDE		ND	mg/kg	0.0011	0.00019	EPA-8081A	ND	A10	1
4,4'-DDT		ND	mg/kg	0.0011	0.00018	EPA-8081A	ND	A10	1
Dieldrin		ND	mg/kg	0.0011	0.00016	EPA-8081A	ND	A10	1
Endosulfan I		ND	mg/kg	0.0011	0.00020	EPA-8081A	ND	A10	1
Endosulfan II		ND	mg/kg	0.0011	0.00025	EPA-8081A	ND	A10	1
Endosulfan sulfate		ND	mg/kg	0.0011	0.00022	EPA-8081A	ND	A10	1
Endrin		ND	mg/kg	0.0011	0.00020	EPA-8081A	ND	A10	1
Endrin aldehyde		ND	mg/kg	0.0011	0.00022	EPA-8081A	ND	A10	1
Heptachlor		ND	mg/kg	0.0011	0.00013	EPA-8081A	ND	A10	1
Heptachlor epoxide		ND	mg/kg	0.0011	0.00018	EPA-8081A	ND	A10	1
Methoxychlor		ND	mg/kg	0.0011	0.00025	EPA-8081A	ND	A10	1
Toxaphene		ND	mg/kg	0.11	0.0029	EPA-8081A	ND	A10	1
TCMX (Surrogate)		58.5	%	20 - 130 (LC	L - UCL)	EPA-8081A		A10	1
Decachlorobiphenyl (Sur	rogate)	51.1	%	40 - 130 (LC	L - UCL)	EPA-8081A		A10	1

				QC				
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8081A	04/05/17	04/06/17 21:03	HKS	GC-17	2.034	B[D0815	

Reported: 04/14/2017 10:38

Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

PCB Analysis (EPA Method 8082)

BCL Sample ID:	1708436-15	Client Sample	Name:	Composite	Composite 8-O-A,8-O-B, 3/30/2017 12:00:00AM					
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #	
PCB-1016		ND	mg/kg	0.011	0.0044	EPA-8082	ND		1	
PCB-1221		ND	mg/kg	0.011	0.0081	EPA-8082	ND		1	
PCB-1232		ND	mg/kg	0.011	0.0083	EPA-8082	ND		1	
PCB-1242		ND	mg/kg	0.011	0.0047	EPA-8082	ND		1	
PCB-1248		ND	mg/kg	0.011	0.0079	EPA-8082	ND		1	
PCB-1254		ND	mg/kg	0.011	0.0036	EPA-8082	ND		1	
PCB-1260		ND	mg/kg	0.011	0.0033	EPA-8082	ND		1	
Total PCB's (Summation	on)	ND	mg/kg	0.011	0.0056	EPA-8082	ND		1	
Decachlorobiphenyl (S	urrogate)	53.3	%	40 - 120 (LC	L - UCL)	EPA-8082			1	

			Run	•		•	QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8082	04/05/17	04/06/17 11:52	HKS	GC-15	1.014	B[D0798	



H.T. Harvey & Associates

983 University Avenue, Building D

Reported: 04/14/2017 10:38
Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284
Project Manager: Matt Pollock

		Name:	e: Composite 8-O-A,8-O-B, 3/30/2017 12:00:00AM					
	Dry Basis	I Inc!4-	DO!	MDI	Mathad	MB	Lab	D #
							Quais	Run # 1
								1 1
							1	
							.	1
								1
								1
								1
								1
								1
	0.017	mg/kg	0.0034	0.0011				1
	0.0044	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
	0.025	mg/kg	0.0034	0.0012	EPA-8270C-SIM	ND		1
	ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
	0.013	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
	ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
	0.0054	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
	0.030	mg/kg	0.0034	0.0018	EPA-8270C-SIM	ND		1
	ND	mg/kg	0.0056	0.0023	EPA-8270C-SIM	ND		1
	ND	mg/kg	0.0056	0.0023	EPA-8270C-SIM	ND		1
	ND	mg/kg	0.0056	0.0023	EPA-8270C-SIM	ND		1
	ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
	ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
	ND	mg/kg	0.0056	0.0023	EPA-8270C-SIM	ND		1
	ND	mg/kg	0.0056	0.0023	EPA-8270C-SIM	ND		1
	0.0058	mg/kg	0.0056	0.0023	EPA-8270C-SIM	ND		1
ie	ND	mg/kg	0.0056	0.0023	EPA-8270C-SIM	ND		1
	0.0087	mg/kg	0.0056	0.0023	EPA-8270C-SIM	ND		1
	0.21	mg/kg	0.0056	0.0023	EPA-8270C-SIM	ND		1
	0.22	mg/kg	0.0056	0.0023	EPA-8270C-SIM	ND		1
te)	64.8	%	30 - 110 (LC	L - UCL)	EPA-8270C-SIM			1
ite)	58.7	%	40 - 120 (LC	L - UCL)	EPA-8270C-SIM			1
te)	60.8	%	30 - 120 (LC	L - UCL)	EPA-8270C-SIM			1
1	te)	Result ND 0.0029 0.017 0.032 0.010 0.023 0.019 0.017 0.0044 0.025 ND 0.013 ND ND <t< td=""><td>Result Units ND mg/kg 0.0029 mg/kg 0.017 mg/kg 0.017 mg/kg 0.010 mg/kg 0.011 mg/kg 0.019 mg/kg 0.0044 mg/kg 0.0055 mg/kg ND mg/kg 0.013 mg/kg ND mg/kg ND</td></t<> <td>Result Units PQL ND mg/kg 0.0034 ND mg/kg 0.0034 0.0029 mg/kg 0.0034 0.017 mg/kg 0.0034 0.032 mg/kg 0.0034 0.010 mg/kg 0.0034 0.019 mg/kg 0.0034 0.017 mg/kg 0.0034 0.017 mg/kg 0.0034 0.025 mg/kg 0.0034 ND mg/kg 0.0056 ND mg/kg 0.0056 ND mg/kg 0.0056 ND mg/kg 0.0056 ND <td< td=""><td>Result Units PQL MDL ND mg/kg 0.0034 0.0011 ND mg/kg 0.0034 0.0011 0.0029 mg/kg 0.0034 0.0015 0.017 mg/kg 0.0034 0.0015 0.032 mg/kg 0.0034 0.0011 0.010 mg/kg 0.0034 0.0011 0.019 mg/kg 0.0034 0.0011 0.017 mg/kg 0.0034 0.0011 0.017 mg/kg 0.0034 0.0011 0.0044 mg/kg 0.0034 0.0011 0.025 mg/kg 0.0034 0.0011 0.013 mg/kg 0.0034 0.0011 0.013 mg/kg 0.0034 0.0011 0.013 mg/kg 0.0034 0.0011 0.0054 mg/kg 0.0034 0.0011 0.0054 mg/kg 0.0034 0.0011 0.030 mg/kg 0.0034 0.0011</td><td> Result Units PQL MDL Method </td><td> Result</td><td> Result</td></td<></td>	Result Units ND mg/kg 0.0029 mg/kg 0.017 mg/kg 0.017 mg/kg 0.010 mg/kg 0.011 mg/kg 0.019 mg/kg 0.0044 mg/kg 0.0055 mg/kg ND mg/kg 0.013 mg/kg ND mg/kg ND	Result Units PQL ND mg/kg 0.0034 ND mg/kg 0.0034 0.0029 mg/kg 0.0034 0.017 mg/kg 0.0034 0.032 mg/kg 0.0034 0.010 mg/kg 0.0034 0.019 mg/kg 0.0034 0.017 mg/kg 0.0034 0.017 mg/kg 0.0034 0.025 mg/kg 0.0034 ND mg/kg 0.0056 ND mg/kg 0.0056 ND mg/kg 0.0056 ND mg/kg 0.0056 ND <td< td=""><td>Result Units PQL MDL ND mg/kg 0.0034 0.0011 ND mg/kg 0.0034 0.0011 0.0029 mg/kg 0.0034 0.0015 0.017 mg/kg 0.0034 0.0015 0.032 mg/kg 0.0034 0.0011 0.010 mg/kg 0.0034 0.0011 0.019 mg/kg 0.0034 0.0011 0.017 mg/kg 0.0034 0.0011 0.017 mg/kg 0.0034 0.0011 0.0044 mg/kg 0.0034 0.0011 0.025 mg/kg 0.0034 0.0011 0.013 mg/kg 0.0034 0.0011 0.013 mg/kg 0.0034 0.0011 0.013 mg/kg 0.0034 0.0011 0.0054 mg/kg 0.0034 0.0011 0.0054 mg/kg 0.0034 0.0011 0.030 mg/kg 0.0034 0.0011</td><td> Result Units PQL MDL Method </td><td> Result</td><td> Result</td></td<>	Result Units PQL MDL ND mg/kg 0.0034 0.0011 ND mg/kg 0.0034 0.0011 0.0029 mg/kg 0.0034 0.0015 0.017 mg/kg 0.0034 0.0015 0.032 mg/kg 0.0034 0.0011 0.010 mg/kg 0.0034 0.0011 0.019 mg/kg 0.0034 0.0011 0.017 mg/kg 0.0034 0.0011 0.017 mg/kg 0.0034 0.0011 0.0044 mg/kg 0.0034 0.0011 0.025 mg/kg 0.0034 0.0011 0.013 mg/kg 0.0034 0.0011 0.013 mg/kg 0.0034 0.0011 0.013 mg/kg 0.0034 0.0011 0.0054 mg/kg 0.0034 0.0011 0.0054 mg/kg 0.0034 0.0011 0.030 mg/kg 0.0034 0.0011	Result Units PQL MDL Method	Result	Result



MU

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

BCL Sample ID: 1708436-15 Client Sample Name: Composite 8-O-A,8-O-B, 3/30/2017 12:00						/2017 12:00:	00AM	
Run QC Run # Method Prep Date Date/Time Analyst Instrument Dilution Batch ID								
1	EPA-8270C-SIM	04/05/17	04/11/17 21:22	. EO1	MS-B7	0.966	B[D0904	

H.T. Harvey & Associates 983 University Avenue, Building D

Project: Alameda Point Los Gatos, CA 95032 Project Number: 15284 Project Manager: Matt Pollock

Purgeable Aromatics and Total Petroleum Hydrocarbons

Reported:

04/14/2017 10:38

BCL Sample ID:	1708436-15	Client Sample	Name:	Composite						
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#	
Gasoline Range Orga	nics (C4 - C12)	ND	mg/kg	1.1	0.32	EPA-8015B	ND		1	
a,a,a-Trifluorotoluene	(FID Surrogate)	128	%	70 - 130 (LC	L - UCL)	EPA-8015B			1	

			Run			QC				
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID			
1	EPA-8015B	04/04/17	04/04/17 16:57	AKM	GC-V8	1	B[D0037			

[M][u]_____

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-15	Client Sample	Name:	Composit	e 8-O-A,8-	O-B, 3/30/2017 12	2:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Light Naptha		ND	mg/kg	56	23	EPA-8015B/FFP	ND		1
TPH - Aviation Gas		ND	mg/kg	56	23	EPA-8015B/FFP	ND		1
TPH - Stoddard Solvent		ND	mg/kg	23	5.6	EPA-8015B/FFP	ND		1
TPH - Heavy Naptha		ND	mg/kg	11	5.6	EPA-8015B/FFP	ND		1
TPH - Gasoline		ND	mg/kg	23	5.6	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP4)		ND	mg/kg	11	5.6	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP5)		ND	mg/kg	11	5.2	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP8)		ND	mg/kg	11	5.6	EPA-8015B/FFP	ND		1
TPH - Kerosene		ND	mg/kg	11	1.6	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)		ND	mg/kg	11	1.4	EPA-8015B/FFP	ND		1
TPH - Fuel Oil #6		ND	mg/kg	11	5.6	EPA-8015B/FFP	ND		1
TPH - Crude Oil		ND	mg/kg	23	3.2	EPA-8015B/FFP	ND		1
TPH - Hydraulic Oil / Moto	or Oil	ND	mg/kg	23	7.3	EPA-8015B/FFP	ND		1
TPH - WD-40		ND	mg/kg	11	5.6	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)		100	%	30 - 130 (LC	L - UCL)	EPA-8015B/FFP			1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B/FFP	04/05/17	04/06/17 10:12	AS1	GC-2	1	B[D0817	

H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284
Project Manager: Matt Pollock

Chemical Analysis

BCL Sample ID:	1708436-15	Client Sample	Name:	Composite	e 8-O-A,8-0	O-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Solids		100	%	0.06	0.06	SM-2540G			1

			Run			QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	SM-2540G	04/06/17	04/06/17 08:30	DRC	MANUAL	1	B[D0990		

H.T. Harvey & Associates

983 University Avenue, Building D

Reported: 04/14/2017 10:38
Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284
Project Manager: Matt Pollock

Total Concentrations (TTLC)

BCL Sample ID:	1708436-15	Client Sample	Name:	Composit	e 8-O-A,8-0	O-B, 3/30/2017 1	2:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Arsenic		1.8	mg/kg	0.56	0.19	EPA-6020	ND		1
Cadmium		0.20	mg/kg	0.28	0.054	EPA-6020	ND	J	2
Chromium		33	mg/kg	0.85	0.28	EPA-6020	ND		2
Copper		6.8	mg/kg	0.56	0.11	EPA-6020	ND		1
Lead		3.1	mg/kg	0.28	0.14	EPA-6020	ND		1
Mercury		ND	mg/kg	0.18	0.021	EPA-7471A	ND		3
Nickel		30	mg/kg	0.56	0.12	EPA-6020	0.34		1
Selenium		ND	mg/kg	0.56	0.12	EPA-6020	ND		2
Silver		ND	mg/kg	0.28	0.057	EPA-6020	ND		1
Zinc		19	mg/kg	1.5	0.56	EPA-6020	0.55		1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6020	04/05/17	04/08/17 05:41	ARD	PE-EL2	0.990	B[D0341	
2	EPA-6020	04/05/17	04/10/17 17:59	GPD	PE-EL2	0.990	B[D0341	
3	EPA-7471A	04/04/17	04/05/17 09:11	MEV	CETAC2	1.025	B[D0216	

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID:	1708436-16	Client Sample	Name:	Composite	Composite 8-W-A,8-W-B, 3/30/2017 12:00:00AM						
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#		
Aldrin		ND	mg/kg	0.0012	0.00013	EPA-8081A	ND	A10	1		
alpha-BHC		ND	mg/kg	0.0012	0.00015	EPA-8081A	ND	A10	1		
beta-BHC		ND	mg/kg	0.0012	0.00017	EPA-8081A	ND	A10	1		
delta-BHC		ND	mg/kg	0.0012	0.00014	EPA-8081A	ND	A10	1		
gamma-BHC (Lindane)		ND	mg/kg	0.0012	0.000081	EPA-8081A	ND	A10	1		
Chlordane (Technical)		ND	mg/kg	0.12	0.0036	EPA-8081A	ND	A10	1		
4,4'-DDD		ND	mg/kg	0.0012	0.00020	EPA-8081A	ND	A10	1		
4,4'-DDE		ND	mg/kg	0.0012	0.00020	EPA-8081A	ND	A10	1		
4,4'-DDT		ND	mg/kg	0.0012	0.00018	EPA-8081A	ND	A10	1		
Dieldrin		ND	mg/kg	0.0012	0.00017	EPA-8081A	ND	A10	1		
Endosulfan I		ND	mg/kg	0.0012	0.00021	EPA-8081A	ND	A10	1		
Endosulfan II		ND	mg/kg	0.0012	0.00026	EPA-8081A	ND	A10	1		
Endosulfan sulfate		ND	mg/kg	0.0012	0.00023	EPA-8081A	ND	A10	1		
Endrin		ND	mg/kg	0.0012	0.00021	EPA-8081A	ND	A10	1		
Endrin aldehyde		ND	mg/kg	0.0012	0.00023	EPA-8081A	ND	A10	1		
Heptachlor		ND	mg/kg	0.0012	0.00014	EPA-8081A	ND	A10	1		
Heptachlor epoxide		ND	mg/kg	0.0012	0.00018	EPA-8081A	ND	A10	1		
Methoxychlor		ND	mg/kg	0.0012	0.00026	EPA-8081A	ND	A10	1		
Toxaphene		ND	mg/kg	0.12	0.0031	EPA-8081A	ND	A10	1		
TCMX (Surrogate)		47.0	%	20 - 130 (LC	L - UCL)	EPA-8081A		A10	1		
Decachlorobiphenyl (Sui	rrogate)	43.8	%	40 - 130 (LC	L - UCL)	EPA-8081A		A10	1		

					QC			
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8081A	04/05/17	04/06/17 22:16	HKS	GC-17	2	B[D0815	

H.T. Harvey & Associates

983 University Avenue, Building D

Reported: 04/14/2017 10:38
Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284
Project Manager: Matt Pollock

PCB Analysis (EPA Method 8082)

BCL Sample ID:	1708436-16	Client Sample	Name:	Composite	e 8-W-A,8-	W-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
PCB-1016		ND	mg/kg	0.012	0.0046	EPA-8082	ND		1
PCB-1221		ND	mg/kg	0.012	0.0085	EPA-8082	ND		1
PCB-1232		ND	mg/kg	0.012	0.0088	EPA-8082	ND		1
PCB-1242		ND	mg/kg	0.012	0.0050	EPA-8082	ND		1
PCB-1248		ND	mg/kg	0.012	0.0083	EPA-8082	ND		1
PCB-1254		ND	mg/kg	0.012	0.0038	EPA-8082	ND		1
PCB-1260		ND	mg/kg	0.012	0.0034	EPA-8082	ND		1
Total PCB's (Summation	on)	ND	mg/kg	0.012	0.0059	EPA-8082	ND		1
Decachlorobiphenyl (Si	urrogate)	50.0	%	40 - 120 (LC	L - UCL)	EPA-8082			1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8082	04/05/17	04/06/17 12:03	HKS	GC-15	1.017	B[D0798	



H.T. Harvey & Associates

983 University Avenue, Building D

Reported: 04/14/2017 10:38
Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284
Project Manager: Matt Pollock

BCL Sample ID:	1708436-16	Client Sample	Name:	Composite	e 8-W-A,8-	W-B, 3/30/2017 1	2:00:00AM		
Comptitue		Dry Basis	11!4.	DC!	MDI	Matha	MB	Lab	D "
Constituent Acenaphthene		Result ND	Units mg/kg	PQL 0.0036	MDL 0.0012	Method EPA-8270C-SIM	Bias ND	Quals	Run # 1
Acenaphthylene		ND ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		
Anthracene		0.0039		0.0036	0.0012	EPA-8270C-SIM	ND		1
			mg/kg						1
Benzo[a]anthracene		0.030	mg/kg	0.0036	0.0015	EPA-8270C-SIM	ND		1
Benzo[b]fluoranthene		0.051	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Benzo[k]fluoranthene		0.015	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Benzo[a]pyrene		0.035	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Benzo[g,h,i]perylene		0.022	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Chrysene		0.028	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Dibenzo[a,h]anthracene	•	0.0055	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Fluoranthene		0.043	mg/kg	0.0036	0.0013	EPA-8270C-SIM	ND		1
Fluorene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Indeno[1,2,3-cd]pyrene		0.018	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Naphthalene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Phenanthrene		0.0086	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Pyrene		0.049	mg/kg	0.0036	0.0019	EPA-8270C-SIM	ND		1
Benzo[e]pyrene		ND	mg/kg	0.0059	0.0024	EPA-8270C-SIM	ND		1
1,1-Biphenyl		ND	mg/kg	0.0059	0.0024	EPA-8270C-SIM	ND		1
2,6-Dimethylnaphthalene	•	ND	mg/kg	0.0059	0.0024	EPA-8270C-SIM	ND		1
1-Methylnaphthalene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
2-Methylnaphthalene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
2-Methylphenanthrene		ND	mg/kg	0.0059	0.0024	EPA-8270C-SIM	ND		1
3-Methylphenanthrene		ND	mg/kg	0.0059	0.0024	EPA-8270C-SIM	ND		1
Perylene		0.0082	mg/kg	0.0059	0.0024	EPA-8270C-SIM	ND		1
2,3,5-Trimethylnaphthale	ene	ND	mg/kg	0.0059	0.0024	EPA-8270C-SIM	ND		1
Total Low (MW) PAHs		0.013	mg/kg	0.0059	0.0024	EPA-8270C-SIM	ND		1
Total High (MW) PAHs		0.32	mg/kg	0.0059	0.0024	EPA-8270C-SIM	ND		1
Total PAHs		0.34	mg/kg	0.0059	0.0024	EPA-8270C-SIM	ND		1
Nitrobenzene-d5 (Surrog	gate)	66.8	%	30 - 110 (LC	L - UCL)	EPA-8270C-SIM			1
2-Fluorobiphenyl (Surrog	gate)	49.3	%	40 - 120 (LC	L - UCL)	EPA-8270C-SIM			1
p-Terphenyl-d14 (Surrog	jate)	58.2	%	30 - 120 (LC	L - UCL)	EPA-8270C-SIM			1
·									



Reported: 04/14/2017 10:38

Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

BCL Sample ID): 1708436-16	Client Sar	mple Name:	Composite 8-W-A,8-W-B, 3/30/2017 12:00:00AM				
Run#	Method	Prep Date	Run Date/Time	QC Analyst Instrument Dilution Batch ID				
1	EPA-8270C-SIM	04/05/17	04/11/17 21:46	6 EO1	MS-B7	0.990	B[D0904	

H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284 Project Manager: Matt Pollock

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-16	Client Sample	Name:	Composite	e 8-W-A,8-	W-B, 3/30/2017				
Compatitudent		Dry Basis	11	DOL	MDI	Madhad	MB	Lab	D #	
Constituent		Result	Units	PQL	MDL	Method	Bias	Quals	Run #	
Gasoline Range Organ	ics (C4 - C12)	ND	mg/kg	1.2	0.33	EPA-8015B	ND		1	
a,a,a-Trifluorotoluene (FID Surrogate)	118	%	70 - 130 (LC	L - UCL)	EPA-8015B			1	

			Run			QC				
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID			
1	EPA-8015B	04/04/17	04/04/17 17:18	AKM	GC-V8	1	B[D0037			

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-16	Client Sample Name:		Composite 8-W-A,8-W-B, 3/30/2017 12:00:00AM						
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #	
TPH - Light Naptha		ND	mg/kg	59	24	EPA-8015B/FFP	ND		1	
TPH - Aviation Gas		ND	mg/kg	59	24	EPA-8015B/FFP	ND		1	
TPH - Stoddard Solvent		ND	mg/kg	24	5.9	EPA-8015B/FFP	ND		1	
TPH - Heavy Naptha		ND	mg/kg	12	5.9	EPA-8015B/FFP	ND		1	
TPH - Gasoline		ND	mg/kg	24	5.9	EPA-8015B/FFP	ND		1	
TPH - Jet Fuel (JP4)		ND	mg/kg	12	5.9	EPA-8015B/FFP	ND		1	
TPH - Jet Fuel (JP5)		ND	mg/kg	12	5.5	EPA-8015B/FFP	ND		1	
TPH - Jet Fuel (JP8)		ND	mg/kg	12	5.9	EPA-8015B/FFP	ND		1	
TPH - Kerosene		ND	mg/kg	12	1.7	EPA-8015B/FFP	ND		1	
TPH - Diesel (FFP)		ND	mg/kg	12	1.4	EPA-8015B/FFP	ND		1	
TPH - Fuel Oil #6		ND	mg/kg	12	5.9	EPA-8015B/FFP	ND		1	
TPH - Crude Oil		ND	mg/kg	24	3.3	EPA-8015B/FFP	ND		1	
TPH - Hydraulic Oil / Moto	r Oil	ND	mg/kg	24	7.7	EPA-8015B/FFP	ND		1	
TPH - WD-40		ND	mg/kg	12	5.9	EPA-8015B/FFP	ND		1	
Tetracosane (Surrogate)		96.1	%	30 - 130 (LC	L - UCL)	EPA-8015B/FFP			1	

		Run					QC		
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	EPA-8015B/FFP	04/05/17	04/06/17 09:50	AS1	GC-2	1.017	B[D0817		

Reported: 04/14/2017 10:38

Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Chemical Analysis

BCL Sample ID:	1708436-16	Client Sample	Name:	Composite	e 8-W-A,8-	W-B, 3/30/2017	7 12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Solids		100	%	0.06	0.06	SM-2540G			1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	SM-2540G	04/06/17	04/06/17 08:30	DRC	MANUAL	1	B[D0990	

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Total Concentrations (TTLC)

BCL Sample ID:	1708436-16	Client Sample	Name:	Composit	e 8-W-A,8-	W-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Arsenic		1.4	mg/kg	0.59	0.20	EPA-6020	ND		1
Cadmium		0.14	mg/kg	0.30	0.057	EPA-6020	ND	J	2
Chromium		28	mg/kg	0.89	0.30	EPA-6020	ND		2
Copper		5.8	mg/kg	0.59	0.12	EPA-6020	ND		1
Lead		3.2	mg/kg	0.30	0.14	EPA-6020	ND		1
Mercury		ND	mg/kg	0.19	0.023	EPA-7471A	ND		3
Nickel		26	mg/kg	0.59	0.13	EPA-6020	0.33		1
Selenium		ND	mg/kg	0.59	0.13	EPA-6020	ND		2
Silver		ND	mg/kg	0.30	0.060	EPA-6020	ND		1
Zinc		18	mg/kg	1.5	0.59	EPA-6020	0.54		1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6020	04/05/17	04/08/17 05:45	ARD	PE-EL2	0.980	B[D0341	
2	EPA-6020	04/05/17	04/10/17 18:02	GPD	PE-EL2	0.980	B[D0341	
3	EPA-7471A	04/04/17	04/05/17 09:22	MEV	CETAC2	0.977	B[D0216	

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID:	1708436-17	Client Sample	Name:	Composite	e 9-O-A,9-C	D-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Aldrin		ND	mg/kg	0.00059	0.000064	EPA-8081A	ND		1
alpha-BHC		ND	mg/kg	0.00059	0.000075	EPA-8081A	ND		1
beta-BHC		ND	mg/kg	0.00059	0.000083	EPA-8081A	ND		1
delta-BHC		ND	mg/kg	0.00059	0.000069	EPA-8081A	ND		1
gamma-BHC (Lindane)		ND	mg/kg	0.00059	0.000040	EPA-8081A	ND		1
Chlordane (Technical)		ND	mg/kg	0.059	0.0018	EPA-8081A	ND		1
4,4'-DDD		ND	mg/kg	0.00059	0.000099	EPA-8081A	ND		1
4,4'-DDE		ND	mg/kg	0.00059	0.000097	EPA-8081A	ND		1
4,4'-DDT		ND	mg/kg	0.00059	0.000091	EPA-8081A	ND		1
Dieldrin		ND	mg/kg	0.00059	0.000082	EPA-8081A	ND		1
Endosulfan I		ND	mg/kg	0.00059	0.00010	EPA-8081A	ND		1
Endosulfan II		ND	mg/kg	0.00059	0.00013	EPA-8081A	ND		1
Endosulfan sulfate		ND	mg/kg	0.00059	0.00012	EPA-8081A	ND		1
Endrin		ND	mg/kg	0.00059	0.00010	EPA-8081A	ND		1
Endrin aldehyde		ND	mg/kg	0.00059	0.00011	EPA-8081A	ND		1
Heptachlor		ND	mg/kg	0.00059	0.000067	EPA-8081A	ND		1
Heptachlor epoxide		ND	mg/kg	0.00059	0.000091	EPA-8081A	ND		1
Methoxychlor		ND	mg/kg	0.00059	0.00013	EPA-8081A	ND		1
Toxaphene		ND	mg/kg	0.059	0.0015	EPA-8081A	ND		1
TCMX (Surrogate)		35.2	%	20 - 130 (LC	L - UCL)	EPA-8081A			1
Decachlorobiphenyl (Sur	rogate)	44.3	%	40 - 130 (LC	L - UCL)	EPA-8081A			1

					QC			
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8081A	04/05/17	04/06/17 22:31	HKS	GC-17	1.010	B[D0815	

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H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

PCB Analysis (EPA Method 8082)

BCL Sample ID:	1708436-17	Client Sample	Name:	Composite	Composite 9-O-A,9-O-B, 3/30/2017 12:00:00AM						
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#		
PCB-1016		ND	mg/kg	0.012	0.0046	EPA-8082	ND		1		
PCB-1221		ND	mg/kg	0.012	0.0084	EPA-8082	ND		1		
PCB-1232		ND	mg/kg	0.012	0.0087	EPA-8082	ND		1		
PCB-1242		ND	mg/kg	0.012	0.0049	EPA-8082	ND		1		
PCB-1248		ND	mg/kg	0.012	0.0082	EPA-8082	ND		1		
PCB-1254		ND	mg/kg	0.012	0.0037	EPA-8082	ND		1		
PCB-1260		ND	mg/kg	0.012	0.0034	EPA-8082	ND		1		
Total PCB's (Summation)	ND	mg/kg	0.012	0.0059	EPA-8082	ND		1		
Decachlorobiphenyl (Sur	rogate)	36.7	%	40 - 120 (LC	L - UCL)	EPA-8082		S09	1		

			Run					
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8082	04/05/17	04/06/17 12:45	HKS	GC-15	1.010	B[D0798	



Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

BCL Sample ID:	1708436-17	Client Sample	Name:	Composite	Composite 9-O-A,9-O-B, 3/30/2017 12:00:00AM						
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #		
Acenaphthene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND ND	Quais	1		
Acenaphthylene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1		
Anthracene		0.0030	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND	J	1		
Benzo[a]anthracene		0.0052	mg/kg	0.0035	0.0015	EPA-8270C-SIM	ND		1		
Benzo[b]fluoranthene		0.011	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1		
Benzo[k]fluoranthene		0.0041	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1		
Benzo[a]pyrene		0.0090	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1		
Benzo[g,h,i]perylene		0.0097	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1		
Chrysene		0.0052	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1		
Dibenzo[a,h]anthracene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1		
Fluoranthene		0.011	mg/kg	0.0035	0.0013	EPA-8270C-SIM	ND		1		
Fluorene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1		
Indeno[1,2,3-cd]pyrene		0.0075	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1		
Naphthalene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1		
Phenanthrene		0.0034	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND	J	1		
Pyrene		0.016	mg/kg	0.0035	0.0019	EPA-8270C-SIM	ND		1		
Benzo[e]pyrene		ND	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1		
1,1-Biphenyl		ND	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1		
2,6-Dimethylnaphthalene		ND	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1		
1-Methylnaphthalene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1		
2-Methylnaphthalene		ND	mg/kg	0.0035	0.0012	EPA-8270C-SIM	ND		1		
2-Methylphenanthrene		ND	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1		
3-Methylphenanthrene		ND	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1		
Perylene		ND	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1		
2,3,5-Trimethylnaphthaler	ne	ND	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1		
Total Low (MW) PAHs		0.0063	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1		
Total High (MW) PAHs		0.086	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1		
Total PAHs		0.092	mg/kg	0.0059	0.0023	EPA-8270C-SIM	ND		1		
Nitrobenzene-d5 (Surroga	ite)	65.0	%	30 - 110 (LC	L - UCL)	EPA-8270C-SIM			1		
2-Fluorobiphenyl (Surroga	ite)	33.5	%	40 - 120 (LC	L - UCL)	EPA-8270C-SIM		S09	1		
p-Terphenyl-d14 (Surroga	te)	51.4	%	30 - 120 (LC	L - UCL)	EPA-8270C-SIM			1		



H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284
Project Manager: Matt Pollock

BCL Sample ID): 1708436-17	Client Sar	mple Name:	Composite 9-O-A,9-O-B, 3/30/2017 12:00:00AM						
Run#	Method	Prep Date	Run Date/Time	QC Analyst Instrument Dilution Batch ID						
1	EPA-8270C-SIM	04/05/17	04/11/17 22:10	E01	MS-B7	0.957	B[D0904			

H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284 Project Manager: Matt Pollock

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-17	Client Sample	Name:	Composite	9-O-A,9-0	O-B, 3/30/2017	12:00:00AM			
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #	
Gasoline Range Organ	nics (C4 - C12)	ND	mg/kg	1.2	0.33	EPA-8015B	ND		1	
a,a,a-Trifluorotoluene (FID Surrogate)	122	%	70 - 130 (LC	L - UCL)	EPA-8015B			1	

			Run			QC				
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID			
1	EPA-8015B	04/04/17	04/04/17 17:39	AKM	GC-V8	1	B[D0037			

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-17	Client Sample	Name:	Composit	e 9-O-A,9-0	O-B, 3/30/2017 12	2:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Light Naptha		ND	mg/kg	59	23	EPA-8015B/FFP	ND		1
TPH - Aviation Gas		ND	mg/kg	59	23	EPA-8015B/FFP	ND		1
TPH - Stoddard Solvent		ND	mg/kg	23	5.9	EPA-8015B/FFP	ND		1
TPH - Heavy Naptha		ND	mg/kg	12	5.9	EPA-8015B/FFP	ND		1
TPH - Gasoline		ND	mg/kg	23	5.9	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP4)		ND	mg/kg	12	5.9	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP5)		ND	mg/kg	12	5.4	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP8)		ND	mg/kg	12	5.9	EPA-8015B/FFP	ND		1
TPH - Kerosene		ND	mg/kg	12	1.6	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)		ND	mg/kg	12	1.4	EPA-8015B/FFP	ND		1
TPH - Fuel Oil #6		ND	mg/kg	12	5.9	EPA-8015B/FFP	ND		1
TPH - Crude Oil		ND	mg/kg	23	3.3	EPA-8015B/FFP	ND		1
TPH - Hydraulic Oil / Moto	or Oil	ND	mg/kg	23	7.6	EPA-8015B/FFP	ND		1
TPH - WD-40		ND	mg/kg	12	5.9	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)		97.6	%	30 - 130 (LC	L - UCL)	EPA-8015B/FFP			1

			Run		QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B/FFP	04/05/17	04/06/17 20:39	AS1	GC-2	1.017	B[D0817	

H.T. Harvey & Associates

Los Gatos, CA 95032

983 University Avenue, Building D

Reported: 04/14/2017 10:38

Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Chemical Analysis

BCL Sample ID:	1708436-17	Client Sample	Name:	Composite 9-O-A,9-O-B, 3/30/2017 12:00:00AM					
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Solids		100	%	0.06	0.06	SM-2540G			1

			Run			QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	SM-2540G	04/06/17	04/06/17 08:30	DRC	MANUAL	1	B[D0990		

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Total Concentrations (TTLC)

BCL Sample ID:	1708436-17	Client Sample	Name:	Composite	e 9-O-A,9-0	O-B, 3/30/2017 1	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Arsenic		2.8	mg/kg	0.59	0.20	EPA-6020	ND		1
Cadmium		0.38	mg/kg	0.29	0.056	EPA-6020	ND		2
Chromium		36	mg/kg	0.88	0.29	EPA-6020	ND		2
Copper		14	mg/kg	0.59	0.12	EPA-6020	ND		1
Lead		9.0	mg/kg	0.29	0.14	EPA-6020	ND		1
Mercury		0.085	mg/kg	0.19	0.022	EPA-7471A	ND	J	3
Nickel		35	mg/kg	0.59	0.13	EPA-6020	0.34		1
Selenium		0.12	mg/kg	0.59	0.13	EPA-6020	ND	J	2
Silver		0.11	mg/kg	0.29	0.060	EPA-6020	ND	J	1
Zinc		41	mg/kg	1.5	0.59	EPA-6020	0.55		1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6020	04/05/17	04/08/17 05:48	ARD	PE-EL2	0.990	B[D0341	
2	EPA-6020	04/05/17	04/10/17 18:06	GPD	PE-EL2	0.990	B[D0341	
3	EPA-7471A	04/04/17	04/05/17 09:24	MEV	CETAC2	1.025	B[D0216	

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID:	1708436-18	Client Sample	Name:	Composit	e 9-W-A,9-\	N-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Aldrin		ND	mg/kg	0.00060	0.000066	EPA-8081A	ND		1
alpha-BHC		ND	mg/kg	0.00060	0.000077	EPA-8081A	ND		1
beta-BHC		ND	mg/kg	0.00060	0.000085	EPA-8081A	ND		1
delta-BHC		ND	mg/kg	0.00060	0.000071	EPA-8081A	ND		1
gamma-BHC (Lindane)		ND	mg/kg	0.00060	0.000041	EPA-8081A	ND		1
Chlordane (Technical)		ND	mg/kg	0.060	0.0018	EPA-8081A	ND		1
4,4'-DDD		ND	mg/kg	0.00060	0.00010	EPA-8081A	ND		1
4,4'-DDE		ND	mg/kg	0.00060	0.000099	EPA-8081A	ND		1
4,4'-DDT		ND	mg/kg	0.00060	0.000093	EPA-8081A	ND		1
Dieldrin		ND	mg/kg	0.00060	0.000084	EPA-8081A	ND		1
Endosulfan I		ND	mg/kg	0.00060	0.00010	EPA-8081A	ND		1
Endosulfan II		ND	mg/kg	0.00060	0.00013	EPA-8081A	ND		1
Endosulfan sulfate		ND	mg/kg	0.00060	0.00012	EPA-8081A	ND		1
Endrin		ND	mg/kg	0.00060	0.00010	EPA-8081A	ND		1
Endrin aldehyde		ND	mg/kg	0.00060	0.00012	EPA-8081A	ND		1
Heptachlor		ND	mg/kg	0.00060	0.000068	EPA-8081A	ND		1
Heptachlor epoxide		ND	mg/kg	0.00060	0.000093	EPA-8081A	ND		1
Methoxychlor		ND	mg/kg	0.00060	0.00013	EPA-8081A	ND		1
Toxaphene		ND	mg/kg	0.060	0.0016	EPA-8081A	ND		1
TCMX (Surrogate)		37.9	%	20 - 130 (LC	L - UCL)	EPA-8081A			1
Decachlorobiphenyl (Su	rrogate)	39.0	%	40 - 130 (LC	L - UCL)	EPA-8081A		S09	1

				QC				
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8081A	04/05/17	04/06/17 22:45	HKS	GC-17	1.003	B[D0815	

Reported: 04/14/2017 10:38

Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

PCB Analysis (EPA Method 8082)

BCL Sample ID:	1708436-18	Client Sample	Name:	Composite	Composite 9-W-A,9-W-B, 3/30/2017 12:00:00AM						
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#		
PCB-1016		ND	mg/kg	0.012	0.0047	EPA-8082	ND		1		
PCB-1221		ND	mg/kg	0.012	0.0086	EPA-8082	ND		1		
PCB-1232		ND	mg/kg	0.012	0.0088	EPA-8082	ND		1		
PCB-1242		ND	mg/kg	0.012	0.0050	EPA-8082	ND		1		
PCB-1248		ND	mg/kg	0.012	0.0084	EPA-8082	ND		1		
PCB-1254		ND	mg/kg	0.012	0.0038	EPA-8082	ND		1		
PCB-1260		ND	mg/kg	0.012	0.0035	EPA-8082	ND		1		
Total PCB's (Summation	n)	ND	mg/kg	0.012	0.0060	EPA-8082	ND		1		
Decachlorobiphenyl (Su	rrogate)	50.0	%	40 - 120 (LC	L - UCL)	EPA-8082			1		

			Run					
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8082	04/05/17	04/06/17 12:56	HKS	GC-15	1.010	B[D0798	



H.T. Harvey & Associates

Los Gatos, CA 95032

983 University Avenue, Building D

Reported: 04/14/2017 10:38

Project Number: 15284 Project Manager: Matt Pollock

Project: Alameda Point

BCL Sample ID:	1708436-18	Client Sample	Name:	e: Composite 9-W-A,9-W-B, 3/30/2017 12:00:00AM					
0		Dry Basis	11. "	DO:		Na-41 1	MB	Lab	
Constituent Acenaphthene		Result ND	Units mg/kg	PQL 0.0036	MDL 0.0012	Method EPA-8270C-SIM	Bias ND	Quals	Run #
Acenaphthylene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		<u></u> 1
Anthracene		0.0028	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND	J	
		0.0028		0.0036	0.0012	EPA-8270C-SIM	ND ND	J	1
Benzo[a]anthracene			mg/kg			EPA-8270C-SIM		J	1
Benzo[b]fluoranthene		0.0076	mg/kg	0.0036	0.0012		ND		1
Benzo[k]fluoranthene		0.0032	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND	J	1
Benzo[a]pyrene		0.0068	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Benzo[g,h,i]perylene		0.0064	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Chrysene		0.0020	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND	J	1
Dibenzo[a,h]anthracene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Fluoranthene		0.0052	mg/kg	0.0036	0.0013	EPA-8270C-SIM	ND		1
Fluorene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Indeno[1,2,3-cd]pyrene		0.0056	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Naphthalene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Phenanthrene		0.0016	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND	J	1
Pyrene		0.0068	mg/kg	0.0036	0.0019	EPA-8270C-SIM	ND		1
Benzo[e]pyrene		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1
1,1-Biphenyl		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1
2,6-Dimethylnaphthalene		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1
1-Methylnaphthalene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
2-Methylnaphthalene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
2-Methylphenanthrene		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1
3-Methylphenanthrene		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1
Perylene		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1
2,3,5-Trimethylnaphthalen	e	ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1
Total Low (MW) PAHs		0.0044	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND	J	1
Total High (MW) PAHs		0.051	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1
Total PAHs		0.056	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1
Nitrobenzene-d5 (Surroga	te)	56.3	%	30 - 110 (LC	L - UCL)	EPA-8270C-SIM			1
2-Fluorobiphenyl (Surroga	te)	44.5	%	40 - 120 (LC	L - UCL)	EPA-8270C-SIM			1
p-Terphenyl-d14 (Surroga	·	43.5	%	30 - 120 (LC	<u> </u>	EPA-8270C-SIM			 1



H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284 Project Manager: Matt Pollock

BCL Sample II	BCL Sample ID: 1708436-18 Client Sample Name: Composite 9-W-A,9-W-B, 3/30/2017 12:00:00AM):00AM	
Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-8270C-SIM	04/05/17	04/12/17 14:25	E01	MS-B7	1.010	B[D0904	

H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284 Project Manager: Matt Pollock

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-18	Client Sample	Sample Name: Composite 9-W-A,9-W-B, 3/30/2017 12:00:00AM						
Constituent		Dry Basis Result	Unito	DOI.	MDL	Method	MB	Lab	Dun #
Constituent Gasoline Range Organ	nics (C4 - C12)	ND	Units mg/kg	PQL 1.2	0.33	EPA-8015B	Bias ND	Quals	Run # 1
a,a,a-Trifluorotoluene ((FID Surrogate)	120	%	70 - 130 (LC	L - UCL)	EPA-8015B			1

			Run				QC
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-8015B	04/06/17	04/07/17 01:41	AKM	GC-V8	1	B[D0399

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-18	Client Sample	Name:	Composite	e 9-W-A,9-	W-B, 3/30/2017 1	2:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Light Naptha		ND	mg/kg	60	24	EPA-8015B/FFP	ND		1
TPH - Aviation Gas		ND	mg/kg	60	24	EPA-8015B/FFP	ND		1
TPH - Stoddard Solvent		ND	mg/kg	24	6.0	EPA-8015B/FFP	ND		1
TPH - Heavy Naptha		ND	mg/kg	12	6.0	EPA-8015B/FFP	ND		1
TPH - Gasoline		ND	mg/kg	24	6.0	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP4)		ND	mg/kg	12	6.0	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP5)		ND	mg/kg	12	5.5	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP8)		ND	mg/kg	12	6.0	EPA-8015B/FFP	ND		1
TPH - Kerosene		ND	mg/kg	12	1.7	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)		ND	mg/kg	12	1.4	EPA-8015B/FFP	ND		1
TPH - Fuel Oil #6		ND	mg/kg	12	6.0	EPA-8015B/FFP	ND		1
TPH - Crude Oil		ND	mg/kg	24	3.3	EPA-8015B/FFP	ND		1
TPH - Hydraulic Oil / Moto	or Oil	ND	mg/kg	24	7.8	EPA-8015B/FFP	ND		1
TPH - WD-40		ND	mg/kg	12	6.0	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)		197	%	30 - 130 (LC	L - UCL)	EPA-8015B/FFP		S09	1

			Run					
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B/FFP	04/05/17	04/06/17 21:01	AS1	GC-2	1.014	B[D0817	

H.T. Harvey & Associates

983 University Avenue, Building D

Project:

Los Gatos, CA 95032 Project Number: 15284
Project Manager: Matt Pollock

Chemical Analysis

04/14/2017 10:38

Project: Alameda Point

BCL Sample ID:	1708436-18	Client Sample	e Name: Composite 9-W-A,9-W-B, 3/30/2017 12:00:00AM						
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Solids		100	%	0.06	0.06	SM-2540G	_	_	1

			Run			QC			
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID		
1	SM-2540G	04/13/17	04/13/17 07:30	DRC	MANUAL	1	B[D1238		

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Total Concentrations (TTLC)

BCL Sample ID:	1708436-18	Client Sample	Name:	Composito	e 9-W-A,9-	W-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Arsenic		1.2	mg/kg	0.60	0.20	EPA-6020	ND		1
Cadmium		0.13	mg/kg	0.30	0.057	EPA-6020	ND	J	2
Chromium		27	mg/kg	0.90	0.30	EPA-6020	ND		2
Copper		5.5	mg/kg	0.60	0.12	EPA-6020	ND		1
Lead		2.5	mg/kg	0.30	0.14	EPA-6020	ND		1
Mercury		ND	mg/kg	0.19	0.023	EPA-7471A	ND		3
Nickel		27	mg/kg	0.60	0.13	EPA-6020	0.33		1
Selenium		0.17	mg/kg	0.60	0.13	EPA-6020	ND	J	2
Silver		ND	mg/kg	0.30	0.061	EPA-6020	ND		1
Zinc		18	mg/kg	1.6	0.60	EPA-6020	0.54		1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6020	04/05/17	04/08/17 05:52	ARD	PE-EL2	0.980	B[D0341	
2	EPA-6020	04/05/17	04/10/17 18:09	GPD	PE-EL2	0.980	B[D0341	
3	EPA-7471A	04/04/17	04/05/17 09:26	MEV	CETAC2	1.008	B[D0216	

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID:	1708436-19	Client Sample	Name:	Composit	Composite 10-O-A,10-O-B, 3/30/2017 12:00:00AM					
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#	
Aldrin		ND	mg/kg	0.00057	0.000063	EPA-8081A	ND		1	
alpha-BHC		ND	mg/kg	0.00057	0.000073	EPA-8081A	ND		1	
beta-BHC		ND	mg/kg	0.00057	0.000081	EPA-8081A	ND		1	
delta-BHC		ND	mg/kg	0.00057	0.000067	EPA-8081A	ND		1	
gamma-BHC (Lindane)		ND	mg/kg	0.00057	0.000039	EPA-8081A	ND		1	
Chlordane (Technical)		ND	mg/kg	0.057	0.0017	EPA-8081A	ND		1	
4,4'-DDD		ND	mg/kg	0.00057	0.000097	EPA-8081A	ND		1	
4,4'-DDE		ND	mg/kg	0.00057	0.000095	EPA-8081A	ND		1	
4,4'-DDT		ND	mg/kg	0.00057	0.000089	EPA-8081A	ND		1	
Dieldrin		ND	mg/kg	0.00057	0.000080	EPA-8081A	ND		1	
Endosulfan I		ND	mg/kg	0.00057	0.000099	EPA-8081A	ND		1	
Endosulfan II		ND	mg/kg	0.00057	0.00013	EPA-8081A	ND		1	
Endosulfan sulfate		ND	mg/kg	0.00057	0.00011	EPA-8081A	ND		1	
Endrin		ND	mg/kg	0.00057	0.000099	EPA-8081A	ND		1	
Endrin aldehyde		ND	mg/kg	0.00057	0.00011	EPA-8081A	ND		1	
Heptachlor		ND	mg/kg	0.00057	0.000065	EPA-8081A	ND		1	
Heptachlor epoxide		ND	mg/kg	0.00057	0.000089	EPA-8081A	ND		1	
Methoxychlor		ND	mg/kg	0.00057	0.00013	EPA-8081A	ND		1	
Toxaphene		ND	mg/kg	0.057	0.0015	EPA-8081A	ND		1	
TCMX (Surrogate)		58.9	%	20 - 130 (LC	CL - UCL)	EPA-8081A			1	
Decachlorobiphenyl (Sur	rogate)	64.6	%	40 - 130 (LC	CL - UCL)	EPA-8081A			1	

Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8081A	04/05/17	04/06/17 23:00	HKS	GC-17	1.007	B[D0815	

Project Number: 15284 Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

PCB Analysis (EPA Method 8082)

BCL Sample ID:	1708436-19	Client Sample	Name:	Composite	e 10-O-A,1	0-O-B, 3/30/201	7 12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
PCB-1016		ND	mg/kg	0.011	0.0044	EPA-8082	ND		1
PCB-1221		ND	mg/kg	0.011	0.0082	EPA-8082	ND		1
PCB-1232		ND	mg/kg	0.011	0.0084	EPA-8082	ND		1
PCB-1242		ND	mg/kg	0.011	0.0048	EPA-8082	ND		1
PCB-1248		ND	mg/kg	0.011	0.0080	EPA-8082	ND		1
PCB-1254		ND	mg/kg	0.011	0.0036	EPA-8082	ND		1
PCB-1260		ND	mg/kg	0.011	0.0033	EPA-8082	ND		1
Total PCB's (Summation	۱)	ND	mg/kg	0.011	0.0057	EPA-8082	ND		1
Decachlorobiphenyl (Su	rrogate)	66.7	%	40 - 120 (LC	L - UCL)	EPA-8082			1

			Run					
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8082	04/05/17	04/06/17 13:06	HKS	GC-15	0.997	B[D0798	



Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

BCL Sample ID:	1708436-19	Client Sample	Name:	Composite	e 10-O-A,1	0-O-B, 3/30/2017			
0		Dry Basis	1114-	DOL	MDI	No allo a al	MB	Lab	- "
Constituent Acenaphthene		Result ND	Units mg/kg	PQL 0.0034	MDL 0.0011	Method EPA-8270C-SIM	Bias ND	Quals	Run #
Acenaphthylene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Anthracene		0.0023	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND	J	1
Benzo[a]anthracene		0.0023	mg/kg	0.0034	0.0015	EPA-8270C-SIM	ND		1
Benzo[b]fluoranthene		0.0060	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		<u>'</u> 1
Benzo[k]fluoranthene		0.0026	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND	J	1
Benzo[a]pyrene		0.0057	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		<u>·</u> 1
Benzo[g,h,i]perylene		0.0053	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		<u>·</u> 1
Chrysene		0.0015	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND	J	<u>·</u> 1
Dibenzo[a,h]anthracene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		<u>'</u> 1
Fluoranthene		0.0034	mg/kg	0.0034	0.0013	EPA-8270C-SIM	ND		<u>·</u> 1
Fluorene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Indeno[1,2,3-cd]pyrene		0.0049	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Naphthalene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Phenanthrene		0.0015	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND	J	1
Pyrene		0.0045	mg/kg	0.0034	0.0018	EPA-8270C-SIM	ND		1
Benzo[e]pyrene		ND	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
1,1-Biphenyl		ND	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
2,6-Dimethylnaphthalene		ND	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
1-Methylnaphthalene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
2-Methylnaphthalene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
2-Methylphenanthrene		ND	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
3-Methylphenanthrene		ND	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
Perylene		ND	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
2,3,5-Trimethylnaphthalen	e	ND	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
Total Low (MW) PAHs		0.0038	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND	J	1
Total High (MW) PAHs		0.039	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
Total PAHs		0.043	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
Nitrobenzene-d5 (Surroga	te)	65.9	%	30 - 110 (LC	L - UCL)	EPA-8270C-SIM			1
2-Fluorobiphenyl (Surroga	te)	52.2	%	40 - 120 (LC	L - UCL)	EPA-8270C-SIM			1
p-Terphenyl-d14 (Surroga	te)	51.9	%	30 - 120 (LC	L - UCL)	EPA-8270C-SIM			1



Reported: 04/14/2017 10:38

Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

BCL Sample ID): 1708436-19	Client Sar	mple Name:	: Composite 10-O-A,10-O-B, 3/30/2017 12:00:00AM					
Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID		
1	EPA-8270C-SIM	04/05/17	04/12/17 14:50) EO1	MS-B7	0.993	B[D0904		

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-19	Client Sample	nt Sample Name: Composite 10-O-A,10-O-B, 3/30/2017 12:00:00AM							
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #	
Gasoline Range Organ	ics (C4 - C12)	ND	mg/kg	1.1	0.32	EPA-8015B	ND	Quaio	1	
a,a,a-Trifluorotoluene (FID Surrogate)	128	%	70 - 130 (LC	L - UCL)	EPA-8015B			1	

	Run						QC
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID
1	EPA-8015B	04/04/17	04/04/17 18:21	AKM	GC-V8	1	B[D0061

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-19	Client Sample	Name:	Composit	e 10-O-A,1	0-O-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Light Naptha		ND	mg/kg	57	23	EPA-8015B/FFP	ND		1
TPH - Aviation Gas		ND	mg/kg	57	23	EPA-8015B/FFP	ND		1
TPH - Stoddard Solvent		ND	mg/kg	23	5.7	EPA-8015B/FFP	ND		1
TPH - Heavy Naptha		ND	mg/kg	11	5.7	EPA-8015B/FFP	ND		1
TPH - Gasoline		ND	mg/kg	23	5.7	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP4)		ND	mg/kg	11	5.7	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP5)		ND	mg/kg	11	5.2	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP8)		ND	mg/kg	11	5.7	EPA-8015B/FFP	ND		1
TPH - Kerosene		ND	mg/kg	11	1.6	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)		ND	mg/kg	11	1.4	EPA-8015B/FFP	ND		1
TPH - Fuel Oil #6		ND	mg/kg	11	5.7	EPA-8015B/FFP	ND		1
TPH - Crude Oil		ND	mg/kg	23	3.2	EPA-8015B/FFP	ND		1
TPH - Hydraulic Oil / Moto	or Oil	ND	mg/kg	23	7.4	EPA-8015B/FFP	ND		1
TPH - WD-40		ND	mg/kg	11	5.7	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)		95.6	%	30 - 130 (LC	L - UCL)	EPA-8015B/FFP			1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B/FFP	04/05/17	04/06/17 21:24	AS1	GC-2	1.017	B[D0817	

H.T. Harvey & Associates 983 University Avenue, Building D

Project: Alameda Point Los Gatos, CA 95032 Project Number: 15284 Project Manager: Matt Pollock

Chemical Analysis

Reported:

04/14/2017 10:38

BCL Sample ID:	1708436-19	Client Sample	ent Sample Name: Composite 10-O-A,10-O-B, 3/30/2017 12:00:00AM						
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Solids		100	%	0.06	0.06	SM-2540G			1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	SM-2540G	04/06/17	04/06/17 08:30	DRC	MANUAL	1	B[D0990	

H.T. Harvey & Associates

983 University Avenue, Building D Los Gatos, CA 95032 Project: Alameda Point Project Number: 15284 Project Manager: Matt Pollock

04/14/2017 10:38

Reported:

Project Manager: Matt Pollo

Total Concentrations (TTLC)

BCL Sample ID:	1708436-19	Client Sample	Name:	Composite	e 10-O-A,1	0-O-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Arsenic		2.0	mg/kg	0.57	0.19	EPA-6020	ND		1
Cadmium		0.14	mg/kg	0.29	0.055	EPA-6020	ND	J	2
Chromium		33	mg/kg	0.86	0.29	EPA-6020	ND		2
Copper		6.2	mg/kg	0.57	0.11	EPA-6020	ND		1
Lead		4.4	mg/kg	0.29	0.14	EPA-6020	ND		1
Mercury		ND	mg/kg	0.18	0.022	EPA-7471A	ND		3
Nickel		26	mg/kg	0.57	0.13	EPA-6020	0.32		1
Selenium	·	ND	mg/kg	0.57	0.13	EPA-6020	ND	_	2
Silver		ND	mg/kg	0.29	0.058	EPA-6020	ND		1
Zinc		20	mg/kg	1.5	0.57	EPA-6020	0.52		1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6020	04/05/17	04/08/17 05:55	ARD	PE-EL2	0.952	B[D0341	
2	EPA-6020	04/05/17	04/10/17 18:12	GPD	PE-EL2	0.952	B[D0341	
3	EPA-7471A	04/04/17	04/05/17 09:33	MEV	CETAC2	0.977	B[D0216	

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID:	1708436-20	Client Sample	Name:	Composite	e 10-W-A,1	0-W-B, 3/30/20	017 12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Aldrin		ND	mg/kg	0.00062	0.000068	EPA-8081A	ND		1
alpha-BHC		ND	mg/kg	0.00062	0.000079	EPA-8081A	ND		1
beta-BHC		ND	mg/kg	0.00062	0.000088	EPA-8081A	ND		1
delta-BHC		ND	mg/kg	0.00062	0.000073	EPA-8081A	ND		1
gamma-BHC (Lindane)		ND	mg/kg	0.00062	0.000042	EPA-8081A	ND		1
Chlordane (Technical)		ND	mg/kg	0.062	0.0019	EPA-8081A	ND		1
4,4'-DDD		ND	mg/kg	0.00062	0.00011	EPA-8081A	ND		1
4,4'-DDE		ND	mg/kg	0.00062	0.00010	EPA-8081A	ND		1
4,4'-DDT		ND	mg/kg	0.00062	0.000097	EPA-8081A	ND		1
Dieldrin		ND	mg/kg	0.00062	0.000087	EPA-8081A	ND		1
Endosulfan I		ND	mg/kg	0.00062	0.00011	EPA-8081A	ND		1
Endosulfan II		ND	mg/kg	0.00062	0.00014	EPA-8081A	ND		1
Endosulfan sulfate		ND	mg/kg	0.00062	0.00012	EPA-8081A	ND		1
Endrin		ND	mg/kg	0.00062	0.00011	EPA-8081A	ND		1
Endrin aldehyde		ND	mg/kg	0.00062	0.00012	EPA-8081A	ND		1
Heptachlor		ND	mg/kg	0.00062	0.000071	EPA-8081A	ND		1
Heptachlor epoxide		ND	mg/kg	0.00062	0.000097	EPA-8081A	ND		1
Methoxychlor		ND	mg/kg	0.00062	0.00014	EPA-8081A	ND		1
Toxaphene		ND	mg/kg	0.062	0.0016	EPA-8081A	ND		1
TCMX (Surrogate)		36.4	%	20 - 130 (LC	L - UCL)	EPA-8081A			1
Decachlorobiphenyl (Sur	rogate)	48.8	%	40 - 130 (LC	L - UCL)	EPA-8081A			1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8081A	04/05/17	04/06/17 23:14	HKS	GC-17	1.010	B[D0815	

Project Number: 15284

Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

PCB Analysis (EPA Method 8082)

BCL Sample ID:	1708436-20	Client Sample	Name:	Composite	Composite 10-W-A,10-W-B, 3/30/2017 12:00:00AM							
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #			
PCB-1016		ND	mg/kg	0.012	0.0048	EPA-8082	ND		1			
PCB-1221		ND	mg/kg	0.012	0.0089	EPA-8082	ND		1			
PCB-1232		ND	mg/kg	0.012	0.0092	EPA-8082	ND		1			
PCB-1242		ND	mg/kg	0.012	0.0052	EPA-8082	ND		1			
PCB-1248		ND	mg/kg	0.012	0.0087	EPA-8082	ND		1			
PCB-1254		ND	mg/kg	0.012	0.0040	EPA-8082	ND		1			
PCB-1260		ND	mg/kg	0.012	0.0036	EPA-8082	ND		1			
Total PCB's (Summation	on)	ND	mg/kg	0.012	0.0062	EPA-8082	ND		1			
Decachlorobiphenyl (Si	urrogate)	45.0	%	40 - 120 (LC	L - UCL)	EPA-8082			1			

			Run					
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8082	04/05/17	04/06/17 13:17	HKS	GC-15	1.003	B[D0798	



MIN

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

BCL Sample ID:	1708436-20	Client Sample	Name:	Composite	e 10-W-A,1	Л			
Constituent		Dry Basis	Unito	PQL	MDL	Method	MB	Lab	Dun #
Acenaphthene		Result ND	Units mg/kg	0.0037	0.0012	EPA-8270C-SIM	Bias ND	Quals	Run # 1
Acenaphthylene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Anthracene		0.0029	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND	J	1
Benzo[a]anthracene		0.0046	mg/kg	0.0037	0.0016	EPA-8270C-SIM	ND		1
Benzo[b]fluoranthene		0.0096	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Benzo[k]fluoranthene		0.0033	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND	J	1
Benzo[a]pyrene		0.0083	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Benzo[g,h,i]perylene		0.0071	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Chrysene		0.0033	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND	J	1
Dibenzo[a,h]anthracene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Fluoranthene		0.0071	mg/kg	0.0037	0.0014	EPA-8270C-SIM	ND		1
Fluorene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Indeno[1,2,3-cd]pyrene		0.0062	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Naphthalene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
Phenanthrene		0.0021	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND	J	1
Pyrene		0.011	mg/kg	0.0037	0.0020	EPA-8270C-SIM	ND		1
Benzo[e]pyrene		ND	mg/kg	0.0062	0.0025	EPA-8270C-SIM	ND		1
1,1-Biphenyl		ND	mg/kg	0.0062	0.0025	EPA-8270C-SIM	ND		1
2,6-Dimethylnaphthalene		ND	mg/kg	0.0062	0.0025	EPA-8270C-SIM	ND		1
1-Methylnaphthalene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
2-Methylnaphthalene		ND	mg/kg	0.0037	0.0012	EPA-8270C-SIM	ND		1
2-Methylphenanthrene		ND	mg/kg	0.0062	0.0025	EPA-8270C-SIM	ND		1
3-Methylphenanthrene		ND	mg/kg	0.0062	0.0025	EPA-8270C-SIM	ND		1
Perylene		ND	mg/kg	0.0062	0.0025	EPA-8270C-SIM	ND		1
2,3,5-Trimethylnaphthaler	ne	ND	mg/kg	0.0062	0.0025	EPA-8270C-SIM	ND		1
Total Low (MW) PAHs		0.0050	mg/kg	0.0062	0.0025	EPA-8270C-SIM	ND	J	1
Total High (MW) PAHs		0.065	mg/kg	0.0062	0.0025	EPA-8270C-SIM	ND		1
Total PAHs		0.070	mg/kg	0.0062	0.0025	EPA-8270C-SIM	ND		1
Nitrobenzene-d5 (Surroga	ate)	42.5	%	30 - 110 (LC	L - UCL)	EPA-8270C-SIM			1
2-Fluorobiphenyl (Surroga	ate)	15.5	%	40 - 120 (LC	L - UCL)	EPA-8270C-SIM		S09	1
p-Terphenyl-d14 (Surroga	ate)	38.0	%	30 - 120 (LC	L - UCL)	EPA-8270C-SIM			1



Reported: 04/14/2017 10:38

Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

BCL Sample ID) : 1708436-20	Client Sa	mple Name:	Composite 10	-W-A,10-W-B, 3	:00:00AM		
Run #	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-8270C-SIM	04/05/17	04/12/17 15:14	E01	MS-B7	1.007	B[D0904	

H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284 Project Manager: Matt Pollock

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-20	Client Sample	Name:	Composite	e 10-W-A,1	0-W-B, 3/30/201	Л			
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#	
Gasoline Range Organ	nics (C4 - C12)	ND	mg/kg	1.2	0.35	EPA-8015B	ND	·	1	
a,a,a-Trifluorotoluene	(FID Surrogate)	122	%	70 - 130 (LC	L - UCL)	EPA-8015B			1	

			Run					
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	04/04/17	04/04/17 18:43	AKM	GC-V8	1	B[D0061	

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-20	Client Sample	e Name:	Composite	Composite 10-W-A,10-W-B, 3/30/2017 12:00:00AM							
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #			
TPH - Light Naptha		ND	mg/kg	62	25	EPA-8015B/FFP	ND		1			
TPH - Aviation Gas		ND	mg/kg	62	25	EPA-8015B/FFP	ND		1			
TPH - Stoddard Solvent		ND	mg/kg	25	6.2	EPA-8015B/FFP	ND		1			
TPH - Heavy Naptha		ND	mg/kg	12	6.2	EPA-8015B/FFP	ND		1			
TPH - Gasoline		ND	mg/kg	25	6.2	EPA-8015B/FFP	ND		1			
TPH - Jet Fuel (JP4)		ND	mg/kg	12	6.2	EPA-8015B/FFP	ND		1			
TPH - Jet Fuel (JP5)		ND	mg/kg	12	5.7	EPA-8015B/FFP	ND		1			
TPH - Jet Fuel (JP8)		ND	mg/kg	12	6.2	EPA-8015B/FFP	ND		1			
TPH - Kerosene		ND	mg/kg	12	1.7	EPA-8015B/FFP	ND		1			
TPH - Diesel (FFP)		ND	mg/kg	12	1.5	EPA-8015B/FFP	ND		1			
TPH - Fuel Oil #6		ND	mg/kg	12	6.2	EPA-8015B/FFP	ND		1			
TPH - Crude Oil		ND	mg/kg	25	3.5	EPA-8015B/FFP	ND		1			
TPH - Hydraulic Oil / Moto	or Oil	ND	mg/kg	25	8.1	EPA-8015B/FFP	ND		1			
TPH - WD-40		ND	mg/kg	12	6.2	EPA-8015B/FFP	ND		1			
Tetracosane (Surrogate)		106	%	30 - 130 (LC	L - UCL)	EPA-8015B/FFP			1			

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B/FFP	04/05/17	04/06/17 21:47	AS1	GC-2	1.003	B[D0817	

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Chemical Analysis

BCL Sample ID:	1708436-20	Client Sample	ent Sample Name: Composite 10-W-A,10-W-B, 3/30/2017 12:00:00AM							
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#	
Solids		100	%	0.06	0.06	SM-2540G			1	

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	SM-2540G	04/06/17	04/06/17 08:30	DRC	MANUAL	1	B[D0990	

H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284
Project Manager: Matt Pollock

Total Concentrations (TTLC)

BCL Sample ID:	1708436-20	Client Sample	Name:	Composit	e 10-W-A,1	0-W-B, 3/30/201	7 12:00:00AN	1	
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Arsenic		3.0	mg/kg	0.62	0.21	EPA-6020	ND		1
Cadmium		0.45	mg/kg	0.31	0.060	EPA-6020	ND		2
Chromium		41	mg/kg	0.93	0.31	EPA-6020	ND		2
Copper		13	mg/kg	0.62	0.12	EPA-6020	ND		2
Lead		8.0	mg/kg	0.31	0.15	EPA-6020	ND		2
Mercury		0.081	mg/kg	0.20	0.024	EPA-7471A	ND	J	3
Nickel		36	mg/kg	0.62	0.14	EPA-6020	0.14		2
Selenium		ND	mg/kg	0.62	0.14	EPA-6020	ND		2
Silver		0.15	mg/kg	0.31	0.063	EPA-6020	ND	J	1
Zinc		37	mg/kg	1.6	0.62	EPA-6020	0.91		1

	_		Run		_		QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6020	04/06/17	04/12/17 01:17	MH1	PE-EL2	0.990	B[D0469	
2	EPA-6020	04/06/17	04/11/17 01:09	MH1	PE-EL2	0.990	B[D0469	
3	EPA-7471A	04/04/17	04/05/17 09:35	MEV	CETAC2	0.962	B[D0216	

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID:	1708436-21	Client Sample	Name:	Composite 11-O-A,11-O-B, 3/30/2017 12:00:00			17 12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Aldrin		ND	mg/kg	0.00059	0.000065	EPA-8081A	ND		1
alpha-BHC		ND	mg/kg	0.00059	0.000076	EPA-8081A	ND		1
beta-BHC		ND	mg/kg	0.00059	0.000084	EPA-8081A	ND		1
delta-BHC		ND	mg/kg	0.00059	0.000070	EPA-8081A	ND		1
gamma-BHC (Lindane)		ND	mg/kg	0.00059	0.000040	EPA-8081A	ND		1
Chlordane (Technical)		ND	mg/kg	0.059	0.0018	EPA-8081A	ND		1
4,4'-DDD		ND	mg/kg	0.00059	0.00010	EPA-8081A	ND		1
4,4'-DDE		ND	mg/kg	0.00059	0.000098	EPA-8081A	ND		1
4,4'-DDT		ND	mg/kg	0.00059	0.000092	EPA-8081A	ND		1
Dieldrin		ND	mg/kg	0.00059	0.000083	EPA-8081A	ND		1
Endosulfan I		ND	mg/kg	0.00059	0.00010	EPA-8081A	ND		1
Endosulfan II		ND	mg/kg	0.00059	0.00013	EPA-8081A	ND		1
Endosulfan sulfate		ND	mg/kg	0.00059	0.00012	EPA-8081A	ND		1
Endrin		ND	mg/kg	0.00059	0.00010	EPA-8081A	ND		1
Endrin aldehyde		ND	mg/kg	0.00059	0.00011	EPA-8081A	ND		1
Heptachlor		ND	mg/kg	0.00059	0.000068	EPA-8081A	ND		1
Heptachlor epoxide		ND	mg/kg	0.00059	0.000092	EPA-8081A	ND		1
Methoxychlor		ND	mg/kg	0.00059	0.00013	EPA-8081A	ND		1
Toxaphene		ND	mg/kg	0.059	0.0015	EPA-8081A	ND		1
TCMX (Surrogate)		23.2	%	20 - 130 (LCI	- UCL)	EPA-8081A			1
Decachlorobiphenyl (Sur	rogate)	33.8	%	40 - 130 (LCI	- UCL)	EPA-8081A		S09	1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8081A	04/05/17	04/06/17 10:07	HKS	GC-17	1.010	B[D0494	

H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284
Project Manager: Matt Pollock

PCB Analysis (EPA Method 8082)

BCL Sample ID:	1708436-21	Client Sample Name:		Composite 11-O-A,11-O-B, 3/30/2017 12:00:00AM							
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #		
PCB-1016		ND	mg/kg	0.012	0.0046	EPA-8082	ND		1		
PCB-1221		ND	mg/kg	0.012	0.0085	EPA-8082	ND		1		
PCB-1232		ND	mg/kg	0.012	0.0088	EPA-8082	ND		1		
PCB-1242		ND	mg/kg	0.012	0.0050	EPA-8082	ND		1		
PCB-1248		ND	mg/kg	0.012	0.0083	EPA-8082	ND		1		
PCB-1254		ND	mg/kg	0.012	0.0038	EPA-8082	ND		1		
PCB-1260		ND	mg/kg	0.012	0.0034	EPA-8082	ND		1		
Total PCB's (Summation	on)	ND	mg/kg	0.012	0.0059	EPA-8082	ND		1		
Decachlorobiphenyl (S	urrogate)	38.3	%	40 - 120 (LC	L - UCL)	EPA-8082		S09	1		

			Run	QC				
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8082	04/05/17	04/05/17 16:01	HKS	GC-15	1.017	B[D0361	



Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

BCL Sample ID:	1708436-21	Client Sample	Name:	Composite	e 11-O-A,1	1-O-B, 3/30/2017			
Competitive		Dry Basis	110.14	DO!	MDI	Mathad	MB	Lab	
Constituent Acenaphthene		Result ND	Units mg/kg	PQL 0.0036	MDL 0.0012	Method EPA-8270C-SIM	Bias ND	Quals	Run # 1
Acenaphthylene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Anthracene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		
Benzo[a]anthracene		0.0034	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND	J	1 1
Benzo[b]fluoranthene		0.0088	mg/kg	0.0036	0.0013	EPA-8270C-SIM	ND	.	
Benzo[k]fluoranthene		0.0030	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND	J	1
Benzo[a]pyrene		0.0030	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND	<u> </u>	1
Benzo[g,h,i]perylene		0.0072		0.0036	0.0012	EPA-8270C-SIM	ND ND		1
		0.0030	mg/kg	0.0036		EPA-8270C-SIM	ND ND	J	1
Chrysene			mg/kg		0.0012			J	1
Dibenzo[a,h]anthracene		ND 0.0057	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Fluoranthene		0.0057	mg/kg	0.0036	0.0013	EPA-8270C-SIM	ND		1
Fluorene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Indeno[1,2,3-cd]pyrene		0.0061	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Naphthalene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Phenanthrene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Pyrene		0.0069	mg/kg	0.0036	0.0019	EPA-8270C-SIM	ND		1
Benzo[e]pyrene		ND	mg/kg	0.0059	0.0024	EPA-8270C-SIM	ND		1
1,1-Biphenyl		ND	mg/kg	0.0059	0.0024	EPA-8270C-SIM	ND		1
2,6-Dimethylnaphthalene		ND	mg/kg	0.0059	0.0024	EPA-8270C-SIM	ND		1
1-Methylnaphthalene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
2-Methylnaphthalene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
2-Methylphenanthrene		ND	mg/kg	0.0059	0.0024	EPA-8270C-SIM	ND		1
3-Methylphenanthrene		ND	mg/kg	0.0059	0.0024	EPA-8270C-SIM	ND		1
Perylene		ND	mg/kg	0.0059	0.0024	EPA-8270C-SIM	ND		1
2,3,5-Trimethylnaphthalen	e	ND	mg/kg	0.0059	0.0024	EPA-8270C-SIM	ND		1
Total Low (MW) PAHs		ND	mg/kg	0.0059	0.0024	EPA-8270C-SIM	ND		1
Total High (MW) PAHs		0.055	mg/kg	0.0059	0.0024	EPA-8270C-SIM	ND		1
Total PAHs		0.055	mg/kg	0.0059	0.0024	EPA-8270C-SIM	ND		1
Nitrobenzene-d5 (Surroga	te)	75.4	%	30 - 110 (LC	L - UCL)	EPA-8270C-SIM			1
2-Fluorobiphenyl (Surroga	te)	55.2	%	40 - 120 (LC	L - UCL)	EPA-8270C-SIM			1
p-Terphenyl-d14 (Surrogat	e)	51.8	%	30 - 120 (LC	L - UCL)	EPA-8270C-SIM			1



Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates
983 University Avenue, Building D
Los Gatos, CA 95032

Project

BCL Sample ID): 1708436-21	Client Sa	nple Name: Composite 11-O-A,11-O-B, 3/30/2017 12:00:00AM						
Run#	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID		
1	EPA-8270C-SIM	04/05/17	04/12/17 17:17	' EO1	MS-B7	0.963	B[D0908		

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-21	Client Sample	ent Sample Name: Composite 11-O-A,11-O-B, 3/30/2017 12:00:00							
Constituent		Dry Basis Result	Unito	DOI.	MDL	Method	MB	Lab	D #	
Gasoline Range Organ	nics (C4 - C12)	ND	Units mg/kg	1.2	0.33	EPA-8015B	Bias ND	Quals	Run # 1	
a,a,a-Trifluorotoluene (FID Surrogate)	120	%	70 - 130 (LC	L - UCL)	EPA-8015B			1	

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	04/04/17	04/04/17 20:31	AKM	GC-V8	1	B[D0061	

H.T. Harvey & Associates 983 University Avenue, Building D

Los Gatos, CA 95032

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-21	Client Sample	Name:	Composit	e 11-O-A,1	1-O-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Light Naptha		ND	mg/kg	59	24	EPA-8015B/FFP	ND		1
TPH - Aviation Gas		ND	mg/kg	59	24	EPA-8015B/FFP	ND		1
TPH - Stoddard Solvent		ND	mg/kg	24	5.9	EPA-8015B/FFP	ND		1
TPH - Heavy Naptha		ND	mg/kg	12	5.9	EPA-8015B/FFP	ND		1
TPH - Gasoline		ND	mg/kg	24	5.9	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP4)		ND	mg/kg	12	5.9	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP5)		ND	mg/kg	12	5.5	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP8)		ND	mg/kg	12	5.9	EPA-8015B/FFP	ND		1
TPH - Kerosene		ND	mg/kg	12	1.7	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)		ND	mg/kg	12	1.4	EPA-8015B/FFP	ND		1
TPH - Fuel Oil #6		ND	mg/kg	12	5.9	EPA-8015B/FFP	ND		1
TPH - Crude Oil		ND	mg/kg	24	3.3	EPA-8015B/FFP	ND		1
TPH - Hydraulic Oil / Moto	or Oil	ND	mg/kg	24	7.7	EPA-8015B/FFP	ND		1
TPH - WD-40		ND	mg/kg	12	5.9	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)		92.8	%	30 - 130 (LC	L - UCL)	EPA-8015B/FFP			1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B/FFP	04/05/17	04/05/17 22:37	AS1	GC-2	1.003	B[D0338	

Reported: 04/14/2017 10:38

Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Chemical Analysis

BCL Sample ID:	1708436-21	Client Sample	t Sample Name: Composite 11-O-A,11-O-B, 3/30/2017 12:00:00AM							
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#	
Solids		100	%	0.06	0.06	SM-2540G			1	

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	SM-2540G	04/06/17	04/06/17 08:30	DRC	MANUAL	1	B[D0990	

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Total Concentrations (TTLC)

BCL Sample ID:	1708436-21	Client Sample	Name:	Composit	e 11-O-A,1	1-O-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Arsenic		1.5	mg/kg	0.59	0.20	EPA-6020	ND		1
Cadmium		0.22	mg/kg	0.30	0.057	EPA-6020	ND	J	1
Chromium		24	mg/kg	0.89	0.30	EPA-6020	0.51		1
Copper		5.5	mg/kg	0.59	0.12	EPA-6020	ND		1
Lead		4.4	mg/kg	0.30	0.14	EPA-6020	ND		1
Mercury		ND	mg/kg	0.19	0.023	EPA-7471A	ND		2
Nickel		20	mg/kg	0.59	0.13	EPA-6020	0.11		1
Selenium		ND	mg/kg	0.59	0.13	EPA-6020	ND		1
Silver		0.12	mg/kg	0.30	0.060	EPA-6020	ND	J	1
Zinc		19	mg/kg	1.5	0.59	EPA-6020	0.57		1

	_		Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6020	04/12/17	04/12/17 23:41	ARD	PE-EL2	0.990	BZJ1708	
2	EPA-7471A	04/04/17	04/05/17 09:37	MEV	CETAC2	1.008	B[D0216	

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID:	1708436-22	Client Sample	Name:	Composite	e 11-W-A,1	1-W-B, 3/30/20	17 12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Aldrin		ND	mg/kg	0.00060	0.000067	EPA-8081A	ND		1
alpha-BHC		ND	mg/kg	0.00060	0.000077	EPA-8081A	ND		1
beta-BHC		ND	mg/kg	0.00060	0.000086	EPA-8081A	ND		1
delta-BHC		ND	mg/kg	0.00060	0.000071	EPA-8081A	ND		1
gamma-BHC (Lindane)		ND	mg/kg	0.00060	0.000041	EPA-8081A	ND		1
Chlordane (Technical)		ND	mg/kg	0.060	0.0018	EPA-8081A	ND		1
4,4'-DDD		ND	mg/kg	0.00060	0.00010	EPA-8081A	ND		1
4,4'-DDE		ND	mg/kg	0.00060	0.00010	EPA-8081A	ND		1
4,4'-DDT		ND	mg/kg	0.00060	0.000094	EPA-8081A	ND		1
Dieldrin		ND	mg/kg	0.00060	0.000085	EPA-8081A	ND		1
Endosulfan I		ND	mg/kg	0.00060	0.00011	EPA-8081A	ND		1
Endosulfan II		ND	mg/kg	0.00060	0.00013	EPA-8081A	ND		1
Endosulfan sulfate		ND	mg/kg	0.00060	0.00012	EPA-8081A	ND		1
Endrin		ND	mg/kg	0.00060	0.00011	EPA-8081A	ND		1
Endrin aldehyde		ND	mg/kg	0.00060	0.00012	EPA-8081A	ND		1
Heptachlor		ND	mg/kg	0.00060	0.000069	EPA-8081A	ND		1
Heptachlor epoxide		ND	mg/kg	0.00060	0.000094	EPA-8081A	ND		1
Methoxychlor		ND	mg/kg	0.00060	0.00013	EPA-8081A	ND		1
Toxaphene		ND	mg/kg	0.060	0.0016	EPA-8081A	ND		1
TCMX (Surrogate)		23.0	%	20 - 130 (LC	L - UCL)	EPA-8081A			1
Decachlorobiphenyl (Sur	rogate)	41.4	%	40 - 130 (LC	L - UCL)	EPA-8081A			1

			Run					
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8081A	04/05/17	04/06/17 10:22	HKS	GC-17	0.987	B[D0494	

Reported: 04/14/2017 10:38

Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

PCB Analysis (EPA Method 8082)

BCL Sample ID:	1708436-22	Client Sample	Name:	Composite	e 11-W-A,1	1-W-B, 3/30/20	17 12:00:00AN	Л	
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
PCB-1016		ND	mg/kg	0.012	0.0047	EPA-8082	ND		1
PCB-1221		ND	mg/kg	0.012	0.0087	EPA-8082	ND		1
PCB-1232		ND	mg/kg	0.012	0.0089	EPA-8082	ND		1
PCB-1242		ND	mg/kg	0.012	0.0051	EPA-8082	ND		1
PCB-1248		ND	mg/kg	0.012	0.0085	EPA-8082	ND		1
PCB-1254		ND	mg/kg	0.012	0.0039	EPA-8082	ND		1
PCB-1260		ND	mg/kg	0.012	0.0035	EPA-8082	ND		1
Total PCB's (Summation)		ND	mg/kg	0.012	0.0060	EPA-8082	ND		1
Decachlorobiphenyl (Surro	ogate)	33.3	%	40 - 120 (LC	L - UCL)	EPA-8082		S09	1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8082	04/05/17	04/05/17 16:12	HKS	GC-15	1.014	B[D0361	



Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

BCL Sample ID:	1708436-22	Client Sample	Name:	Composite	e: Composite 11-W-A,11-W-B, 3/30/2017 12:00:00AM					
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab	Pun#	
Acenaphthene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND ND	Quals	Run # 1	
Acenaphthylene		0.0024	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND	J	1	
Anthracene		0.0060	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1	
Benzo[a]anthracene		0.016	mg/kg	0.0036	0.0016	EPA-8270C-SIM	ND		1	
Benzo[b]fluoranthene		0.025	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1	
Benzo[k]fluoranthene		0.0080	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1	
Benzo[a]pyrene		0.022	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1	
Benzo[g,h,i]perylene		0.020	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1	
Chrysene		0.015	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1	
Dibenzo[a,h]anthracene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1	
Fluoranthene		0.027	mg/kg	0.0036	0.0013	EPA-8270C-SIM	ND		1	
Fluorene		0.0032	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND	J	1	
Indeno[1,2,3-cd]pyrene		0.015	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1	
Naphthalene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1	
Phenanthrene		0.012	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1	
Pyrene		0.030	mg/kg	0.0036	0.0019	EPA-8270C-SIM	ND		1	
Benzo[e]pyrene		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1	
1,1-Biphenyl		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1	
2,6-Dimethylnaphthalene		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1	
1-Methylnaphthalene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1	
2-Methylnaphthalene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1	
2-Methylphenanthrene		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1	
3-Methylphenanthrene		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1	
Perylene		0.0052	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND	J	1	
2,3,5-Trimethylnaphthalen	е	ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1	
Total Low (MW) PAHs		0.023	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1	
Total High (MW) PAHs		0.20	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1	
Total PAHs		0.22	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1	
Nitrobenzene-d5 (Surroga	te)	65.4	%	30 - 110 (LC	L - UCL)	EPA-8270C-SIM			1	
2-Fluorobiphenyl (Surroga	te)	48.8	%	40 - 120 (LC	L - UCL)	EPA-8270C-SIM			1	
p-Terphenyl-d14 (Surroga	te)	44.3	%	30 - 120 (LC	L - UCL)	EPA-8270C-SIM			1	



Reported: 04/14/2017 10:38

Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

BCL Sample ID): 1708436-22	Client Sar	Client Sample Name: Composite 11-W-A,11-W-B, 3/30/2017 12:00:00					
Run#	Method	Prep Date	Run Date/Time	Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-8270C-SIM	04/05/17	04/12/17 17:41	EO1	MS-B7	0.987	B[D0908	

H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284 Project Manager: Matt Pollock

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-22	Client Sample	Name:	Composite	e 11-W-A,1	1-W-B, 3/30/201	1			
Comptituent		Dry Basis	11	DOL	MDI	Mathad	MB	Lab	D #	
Constituent		Result	Units	PQL	MDL	Method	Bias	Quals	Run #	
Gasoline Range Organ	nics (C4 - C12)	ND	mg/kg	1.2	0.34	EPA-8015B	ND		1	
a,a,a-Trifluorotoluene (FID Surrogate)	112	%	70 - 130 (LC	L - UCL)	EPA-8015B			1	

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	04/04/17	04/04/17 20:52	AKM	GC-V8	1	B[D0061	

H.T. Harvey & Associates

983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-22	Client Sample	Name:	Composite	e 11-W-A,1	1-W-B, 3/30/2017	12:00:00AN	Л	
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Light Naptha		ND	mg/kg	60	24	EPA-8015B/FFP	ND		1
TPH - Aviation Gas		ND	mg/kg	60	24	EPA-8015B/FFP	ND		1
TPH - Stoddard Solvent		ND	mg/kg	24	6.0	EPA-8015B/FFP	ND		1
TPH - Heavy Naptha		ND	mg/kg	12	6.0	EPA-8015B/FFP	ND		1
TPH - Gasoline		ND	mg/kg	24	6.0	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP4)		ND	mg/kg	12	6.0	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP5)		ND	mg/kg	12	5.6	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP8)		ND	mg/kg	12	6.0	EPA-8015B/FFP	ND		1
TPH - Kerosene		ND	mg/kg	12	1.7	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)		ND	mg/kg	12	1.5	EPA-8015B/FFP	ND		1
TPH - Fuel Oil #6		ND	mg/kg	12	6.0	EPA-8015B/FFP	ND		1
TPH - Crude Oil		ND	mg/kg	24	3.4	EPA-8015B/FFP	ND		1
TPH - Hydraulic Oil / Moto	or Oil	ND	mg/kg	24	7.9	EPA-8015B/FFP	ND		1
TPH - WD-40		ND	mg/kg	12	6.0	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)		101	%	30 - 130 (LC	L - UCL)	EPA-8015B/FFP			1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B/FFP	04/05/17	04/05/17 23:00	AS1	GC-2	1.003	B[D0338	

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284

Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Chemical Analysis

BCL Sample ID:	1708436-22	Client Sample	Name:	Composite	e 11-W-A,1	1-W-B, 3/30/20	17 12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Solids		100	%	0.06	0.06	SM-2540G			1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	SM-2540G	04/06/17	04/06/17 08:30	DRC	MANUAL	1	B[D0990	

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Total Concentrations (TTLC)

BCL Sample ID:	1708436-22	Client Sample	Name:	Composit	e 11-W-A,1	1-W-B, 3/30/201	7 12:00:00AN	1	
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Arsenic		3.1	mg/kg	0.60	0.21	EPA-6020	ND		1
Cadmium		0.41	mg/kg	0.30	0.058	EPA-6020	ND		2
Chromium		39	mg/kg	0.91	0.30	EPA-6020	ND		2
Copper		12	mg/kg	0.60	0.12	EPA-6020	ND		2
Lead		7.6	mg/kg	0.30	0.15	EPA-6020	ND		2
Mercury		0.14	mg/kg	0.19	0.023	EPA-7471A	ND	J	3
Nickel		39	mg/kg	0.60	0.13	EPA-6020	0.13		2
Selenium		ND	mg/kg	0.60	0.13	EPA-6020	ND		2
Silver		0.13	mg/kg	0.30	0.062	EPA-6020	ND	J	1
Zinc		37	mg/kg	1.6	0.60	EPA-6020	0.86		1

	_		Run		_		QC	_
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6020	04/06/17	04/12/17 01:21	MH1	PE-EL2	0.935	B[D0469	
2	EPA-6020	04/06/17	04/11/17 01:12	MH1	PE-EL2	0.935	B[D0469	
3	EPA-7471A	04/04/17	04/05/17 09:39	MEV	CETAC2	0.962	B[D0216	

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Organochlorine Pesticides (EPA Method 8081A)

Constituent PQL MDL Metho Aldrin ND mg/kg 0.00057 0.000062 EPA-808 alpha-BHC ND mg/kg 0.00057 0.000073 EPA-808 beta-BHC ND mg/kg 0.00057 0.000081 EPA-808 delta-BHC ND mg/kg 0.00057 0.000067 EPA-808 gamma-BHC (Lindane) ND mg/kg 0.00057 0.000039 EPA-808 Chlordane (Technical) ND mg/kg 0.057 0.0017 EPA-808 4,4'-DDD ND mg/kg 0.00057 0.000096 EPA-808 4,4'-DDE ND mg/kg 0.00057 0.000096 EPA-808 4,4'-DDT ND mg/kg 0.00057 0.000098 EPA-808 Dieldrin ND mg/kg 0.00057 0.000088 EPA-808	MB Lab
alpha-BHC ND mg/kg 0.00057 0.000073 EPA-808 beta-BHC ND mg/kg 0.00057 0.000081 EPA-808 delta-BHC ND mg/kg 0.00057 0.000067 EPA-808 gamma-BHC (Lindane) ND mg/kg 0.0057 0.000039 EPA-808 Chlordane (Technical) ND mg/kg 0.0057 0.0017 EPA-808 4,4'-DDD ND mg/kg 0.00057 0.000096 EPA-808 4,4'-DDE ND mg/kg 0.00057 0.000094 EPA-808 4,4'-DDT ND mg/kg 0.00057 0.000088 EPA-808 Dieldrin ND mg/kg 0.00057 0.000079 EPA-808	od Bias Quals Run#
beta-BHC ND mg/kg 0.00057 0.000081 EPA-808 delta-BHC ND mg/kg 0.00057 0.000067 EPA-808 gamma-BHC (Lindane) ND mg/kg 0.00057 0.000039 EPA-808 Chlordane (Technical) ND mg/kg 0.057 0.0017 EPA-808 4,4'-DDD ND mg/kg 0.00057 0.000096 EPA-808 4,4'-DDE ND mg/kg 0.00057 0.000094 EPA-808 4,4'-DDT ND mg/kg 0.00057 0.000088 EPA-808 Dieldrin ND mg/kg 0.00057 0.000079 EPA-808	081A ND 1
delta-BHC ND mg/kg 0.00057 0.000067 EPA-808 gamma-BHC (Lindane) ND mg/kg 0.00057 0.000039 EPA-808 Chlordane (Technical) ND mg/kg 0.057 0.0017 EPA-808 4,4'-DDD ND mg/kg 0.00057 0.000096 EPA-808 4,4'-DDE ND mg/kg 0.00057 0.000094 EPA-808 4,4'-DDT ND mg/kg 0.00057 0.000088 EPA-808 Dieldrin ND mg/kg 0.00057 0.000079 EPA-808	081A ND 1
gamma-BHC (Lindane) ND mg/kg 0.00057 0.000039 EPA-808 Chlordane (Technical) ND mg/kg 0.057 0.0017 EPA-808 4,4'-DDD ND mg/kg 0.00057 0.000096 EPA-808 4,4'-DDE ND mg/kg 0.00057 0.000094 EPA-808 4,4'-DDT ND mg/kg 0.00057 0.000088 EPA-808 Dieldrin ND mg/kg 0.00057 0.000079 EPA-808	081A ND 1
Chlordane (Technical) ND mg/kg 0.057 0.0017 EPA-808 4,4'-DDD ND mg/kg 0.00057 0.000096 EPA-808 4,4'-DDE ND mg/kg 0.00057 0.000094 EPA-808 4,4'-DDT ND mg/kg 0.00057 0.000088 EPA-808 Dieldrin ND mg/kg 0.00057 0.000079 EPA-808	081A ND 1
4,4'-DDD ND mg/kg 0.00057 0.000096 EPA-808 4,4'-DDE ND mg/kg 0.00057 0.000094 EPA-808 4,4'-DDT ND mg/kg 0.00057 0.000088 EPA-808 Dieldrin ND mg/kg 0.00057 0.000079 EPA-808	081A ND 1
4,4'-DDE ND mg/kg 0.00057 0.000094 EPA-808 4,4'-DDT ND mg/kg 0.00057 0.000088 EPA-808 Dieldrin ND mg/kg 0.00057 0.000079 EPA-808	081A ND 1
4,4'-DDT ND mg/kg 0.00057 0.000088 EPA-808 Dieldrin ND mg/kg 0.00057 0.000079 EPA-808	081A ND 1
Dieldrin ND mg/kg 0.00057 0.000079 EPA-808	081A ND 1
	081A ND 1
	081A ND 1
Endosulfan I ND mg/kg 0.00057 0.000099 EPA-808	081A ND 1
Endosulfan II ND mg/kg 0.00057 0.00012 EPA-808	081A ND 1
Endosulfan sulfate ND mg/kg 0.00057 0.00011 EPA-808	081A ND 1
Endrin ND mg/kg 0.00057 0.000099 EPA-808	081A ND 1
Endrin aldehyde ND mg/kg 0.00057 0.00011 EPA-808	081A ND 1
Heptachlor ND mg/kg 0.00057 0.000065 EPA-808	081A ND 1
Heptachlor epoxide ND mg/kg 0.00057 0.000088 EPA-808	081A ND 1
Methoxychlor ND mg/kg 0.00057 0.00012 EPA-808	081A ND 1
Toxaphene ND mg/kg 0.057 0.0015 EPA-808	081A ND 1
TCMX (Surrogate) 32.5 % 20 - 130 (LCL - UCL) EPA-808	081A 1
Decachlorobiphenyl (Surrogate) 32.1 % 40 - 130 (LCL - UCL) EPA-808	081A S09 1

	Run						QC			
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID			
1	EPA-8081A	04/05/17	04/06/17 10:36	HKS	GC-17	1.010	B[D0494			

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

PCB Analysis (EPA Method 8082)

BCL Sample ID:	1708436-23	Client Sample	Name:	Composite	e 12-O-A,1	2-O-B, 3/30/201	7 12:00:00AM	ļ	
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
PCB-1016		ND	mg/kg	0.011	0.0044	EPA-8082	ND		1
PCB-1221		ND	mg/kg	0.011	0.0082	EPA-8082	ND		1
PCB-1232		ND	mg/kg	0.011	0.0084	EPA-8082	ND		1
PCB-1242		ND	mg/kg	0.011	0.0048	EPA-8082	ND		1
PCB-1248		ND	mg/kg	0.011	0.0079	EPA-8082	ND		1
PCB-1254		ND	mg/kg	0.011	0.0036	EPA-8082	ND		1
PCB-1260		ND	mg/kg	0.011	0.0033	EPA-8082	ND		1
Total PCB's (Summatio	n)	ND	mg/kg	0.011	0.0057	EPA-8082	ND		1
Decachlorobiphenyl (Su	urrogate)	26.7	%	40 - 120 (LC	L - UCL)	EPA-8082		S09	1

			Run					
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8082	04/05/17	04/05/17 16:22	HKS	GC-15	1.003	B[D0361	



Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

BCL Sample ID:	1708436-23	Client Sample	Name:	Composite	e 12-O-A,1	2-O-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab	Dun#
Acenaphthene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND	Quals	Run # 1
Acenaphthylene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Anthracene		0.0025	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND	J	1
Benzo[a]anthracene		0.0029	mg/kg	0.0034	0.0015	EPA-8270C-SIM	ND	J	1
Benzo[b]fluoranthene		0.0065	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Benzo[k]fluoranthene		0.0029	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND	J	1
Benzo[a]pyrene		0.0058	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Benzo[g,h,i]perylene		0.0051	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Chrysene		0.0022	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND	J	1
Dibenzo[a,h]anthracene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Fluoranthene		0.0051	mg/kg	0.0034	0.0012	EPA-8270C-SIM	ND		1
Fluorene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
ndeno[1,2,3-cd]pyrene		0.0047	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Naphthalene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
Phenanthrene		0.0022	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND	J	1
Pyrene		0.0054	mg/kg	0.0034	0.0018	EPA-8270C-SIM	ND		1
Benzo[e]pyrene		ND	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
1,1-Biphenyl		ND	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
2,6-Dimethylnaphthalene		ND	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
1-Methylnaphthalene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
2-Methylnaphthalene		ND	mg/kg	0.0034	0.0011	EPA-8270C-SIM	ND		1
2-Methylphenanthrene		ND	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
3-Methylphenanthrene		ND	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
Perylene		ND	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
2,3,5-Trimethylnaphthalen	е	ND	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
Total Low (MW) PAHs		0.0047	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND	J	1
Total High (MW) PAHs		0.043	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
Total PAHs		0.048	mg/kg	0.0057	0.0023	EPA-8270C-SIM	ND		1
Nitrobenzene-d5 (Surroga	te)	76.1	%	30 - 110 (LC	L - UCL)	EPA-8270C-SIM			1
2-Fluorobiphenyl (Surroga	te)	54.3	%	40 - 120 (LC	L - UCL)	EPA-8270C-SIM			1
p-Terphenyl-d14 (Surroga	te)	53.3	%	30 - 120 (LC	L - UCL)	EPA-8270C-SIM			1



H.T. Harvey & Associates

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284

Project Manager: Matt Pollock

983 University Avenue, Building D Los Gatos, CA 95032 Project Nun Project Many

BCL Sample ID): 1708436-23	Client Sar	mple Name:	Composite 12	-O-A,12-O-B, 3/	00:00AM		
Run#	Method	Prep Date	Run Date/Time	QC Analyst Instrument Dilution Batch ID				
1	EPA-8270C-SIM	04/05/17	04/12/17 18:06	EO1	MS-B7	0.954	B[D0908	

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-23	Client Sample	Name:	Composite	Composite 12-O-A,12-O-B, 3/30/2017 12:00:00AM					
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#	
Gasoline Range Organ	nics (C4 - C12)	ND	mg/kg	1.1	0.32	EPA-8015B	ND		1	
a,a,a-Trifluorotoluene	(FID Surrogate)	115	%	70 - 130 (LC	L - UCL)	EPA-8015B			1	

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	04/04/17	04/04/17 21:14	AKM	GC-V8	1	B[D0061	

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H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-23	Client Sample	Name:	Composit	e 12-O-A,1	2-O-B, 3/30/2017	12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
TPH - Light Naptha		ND	mg/kg	57	23	EPA-8015B/FFP	ND		1
TPH - Aviation Gas		ND	mg/kg	57	23	EPA-8015B/FFP	ND		1
TPH - Stoddard Solvent		ND	mg/kg	23	5.7	EPA-8015B/FFP	ND		1
TPH - Heavy Naptha		ND	mg/kg	11	5.7	EPA-8015B/FFP	ND		1
TPH - Gasoline		ND	mg/kg	23	5.7	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP4)		ND	mg/kg	11	5.7	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP5)		ND	mg/kg	11	5.2	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP8)		ND	mg/kg	11	5.7	EPA-8015B/FFP	ND		1
TPH - Kerosene		ND	mg/kg	11	1.6	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)		ND	mg/kg	11	1.4	EPA-8015B/FFP	ND		1
TPH - Fuel Oil #6		ND	mg/kg	11	5.7	EPA-8015B/FFP	ND		1
TPH - Crude Oil		ND	mg/kg	23	3.2	EPA-8015B/FFP	ND		1
TPH - Hydraulic Oil / Moto	or Oil	ND	mg/kg	23	7.4	EPA-8015B/FFP	ND		1
TPH - WD-40		ND	mg/kg	11	5.7	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)		84.9	%	30 - 130 (LC	L - UCL)	EPA-8015B/FFP			1

			Run					
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B/FFP	04/05/17	04/05/17 23:46	AS1	GC-2	0.987	B[D0338	

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Chemical Analysis

BCL Sample ID:	1708436-23	Client Sample	Name:	ame: Composite 12-O-A,12-O-B, 3/30/2017 12:00:00AM					
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Solids		100	%	0.06	0.06	SM-2540G			1

			Run					
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	SM-2540G	04/06/17	04/06/17 08:30	DRC	MANUAL	1	B[D0990	

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032

Total Concentrations (TTLC)

BCL Sample ID:	1708436-23	Client Sample	Name:	Composite	Composite 12-O-A,12-O-B, 3/30/2017 12:00:00AM							
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #			
Arsenic		1.3	mg/kg	0.57	0.19	EPA-6020	ND		1			
Cadmium		0.15	mg/kg	0.28	0.054	EPA-6020	ND	J	2			
Chromium		30	mg/kg	0.85	0.28	EPA-6020	ND		2			
Copper		6.2	mg/kg	0.57	0.11	EPA-6020	ND		2			
Lead		2.6	mg/kg	0.28	0.14	EPA-6020	ND		2			
Mercury		ND	mg/kg	0.18	0.022	EPA-7471A	ND		3			
Nickel		27	mg/kg	0.57	0.12	EPA-6020	0.13		2			
Selenium		ND	mg/kg	0.57	0.12	EPA-6020	ND		2			
Silver		ND	mg/kg	0.28	0.058	EPA-6020	ND		1			
Zinc		19	mg/kg	1.5	0.57	EPA-6020	0.87		1			

	_		Run		_		QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6020	04/06/17	04/12/17 01:24	MH1	PE-EL2	0.943	B[D0469	
2	EPA-6020	04/06/17	04/11/17 01:16	MH1	PE-EL2	0.943	B[D0469	
3	EPA-7471A	04/04/17	04/05/17 09:41	MEV	CETAC2	0.992	B[D0216	

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Organochlorine Pesticides (EPA Method 8081A)

BCL Sample ID:	1708436-24	Client Sample	Name:	Composit	e 12-W-A,1	2-W-B, 3/30/20	17 12:00:00AM		
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Aldrin		ND	mg/kg	0.00060	0.000066	EPA-8081A	ND		1
alpha-BHC		ND	mg/kg	0.00060	0.000077	EPA-8081A	ND		1
beta-BHC		ND	mg/kg	0.00060	0.000085	EPA-8081A	ND		1
delta-BHC		ND	mg/kg	0.00060	0.000071	EPA-8081A	ND		1
gamma-BHC (Lindane)		ND	mg/kg	0.00060	0.000041	EPA-8081A	ND		1
Chlordane (Technical)		ND	mg/kg	0.060	0.0018	EPA-8081A	ND		1
4,4'-DDD		ND	mg/kg	0.00060	0.00010	EPA-8081A	ND		1
4,4'-DDE		ND	mg/kg	0.00060	0.000099	EPA-8081A	ND		1
4,4'-DDT		ND	mg/kg	0.00060	0.000093	EPA-8081A	ND		1
Dieldrin		ND	mg/kg	0.00060	0.000084	EPA-8081A	ND		1
Endosulfan I		ND	mg/kg	0.00060	0.00010	EPA-8081A	ND		1
Endosulfan II		ND	mg/kg	0.00060	0.00013	EPA-8081A	ND		1
Endosulfan sulfate		ND	mg/kg	0.00060	0.00012	EPA-8081A	ND		1
Endrin		ND	mg/kg	0.00060	0.00010	EPA-8081A	ND		1
Endrin aldehyde		ND	mg/kg	0.00060	0.00012	EPA-8081A	ND		1
Heptachlor		ND	mg/kg	0.00060	0.000068	EPA-8081A	ND		1
Heptachlor epoxide		ND	mg/kg	0.00060	0.000093	EPA-8081A	ND		1
Methoxychlor		ND	mg/kg	0.00060	0.00013	EPA-8081A	ND		1
Toxaphene		ND	mg/kg	0.060	0.0016	EPA-8081A	ND		1
TCMX (Surrogate)		31.5	%	20 - 130 (LC	L - UCL)	EPA-8081A			1
Decachlorobiphenyl (Sur	rogate)	41.0	%	40 - 130 (LC	L - UCL)	EPA-8081A			1

					QC			
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8081A	04/05/17	04/06/17 10:51	HKS	GC-17	1.010	B[D0494	

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H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

PCB Analysis (EPA Method 8082)

BCL Sample ID:	1708436-24	Client Sample	Name:	Composite	Composite 12-W-A,12-W-B, 3/30/2017 12:00:00AM							
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #			
PCB-1016		ND	mg/kg	0.012	0.0047	EPA-8082	ND		1			
PCB-1221		ND	mg/kg	0.012	0.0086	EPA-8082	ND		1			
PCB-1232		ND	mg/kg	0.012	0.0088	EPA-8082	ND		1			
PCB-1242		ND	mg/kg	0.012	0.0050	EPA-8082	ND		1			
PCB-1248		ND	mg/kg	0.012	0.0084	EPA-8082	ND		1			
PCB-1254		ND	mg/kg	0.012	0.0038	EPA-8082	ND		1			
PCB-1260		ND	mg/kg	0.012	0.0035	EPA-8082	ND		1			
Total PCB's (Summatio	n)	ND	mg/kg	0.012	0.0060	EPA-8082	ND		1			
Decachlorobiphenyl (Su	ırrogate)	21.7	%	40 - 120 (LC	L - UCL)	EPA-8082		S09	1			

			Run					
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8082	04/05/17	04/05/17 16:33	HKS	GC-15	0.984	B[D0361	



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H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

BCL Sample ID:	1708436-24	Client Sample	Name:	Composite	e 12-W-A,1	2-W-B, 3/30/2017	12:00:00AN	Л	
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB	Lab	Pun#
Acenaphthene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	Bias ND	Quals	Run # 1
Acenaphthylene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Anthracene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Benzo[a]anthracene		ND	mg/kg	0.0036	0.0016	EPA-8270C-SIM	ND		1
Benzo[b]fluoranthene		0.0044	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Benzo[k]fluoranthene		0.0024	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND	J	1
Benzo[a]pyrene		0.0040	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Benzo[g,h,i]perylene		0.0036	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Chrysene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Dibenzo[a,h]anthracene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Fluoranthene		ND	mg/kg	0.0036	0.0013	EPA-8270C-SIM	ND		1
Fluorene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Indeno[1,2,3-cd]pyrene		0.0044	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Naphthalene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Phenanthrene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
Pyrene		ND	mg/kg	0.0036	0.0019	EPA-8270C-SIM	ND		1
Benzo[e]pyrene		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1
1,1-Biphenyl		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1
2,6-Dimethylnaphthalene		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1
1-Methylnaphthalene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
2-Methylnaphthalene		ND	mg/kg	0.0036	0.0012	EPA-8270C-SIM	ND		1
2-Methylphenanthrene		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1
3-Methylphenanthrene		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1
Perylene		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1
2,3,5-Trimethylnaphthalei	ne	ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1
Total Low (MW) PAHs		ND	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1
Total High (MW) PAHs		0.019	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1
Total PAHs		0.019	mg/kg	0.0060	0.0024	EPA-8270C-SIM	ND		1
Nitrobenzene-d5 (Surroga	ate)	63.2	%	30 - 110 (LC	L - UCL)	EPA-8270C-SIM			1
2-Fluorobiphenyl (Surroga	ate)	49.2	%	40 - 120 (LC	L - UCL)	EPA-8270C-SIM			1
p-Terphenyl-d14 (Surroga	ate)	45.1	%	30 - 120 (LC	L - UCL)	EPA-8270C-SIM			1



H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284 Project Manager: Matt Pollock

BCL Sample ID): 1708436-24	mple Name:	Composite 12	-W-A,12-W-B, 3	/30/2017 12	:00:00AM		
Run # Method Prep Date Date/T				Analyst	Instrument	Dilution	QC Batch ID	
1	EPA-8270C-SIM	04/05/17	04/12/17 18:31	EO1	MS-B7	0.993	B[D0908	



Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Purgeable Aromatics and Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-24	Client Sample	ient Sample Name: Composite 12-W-A,12-W-B, 3/30/2017 12:00:00AM							
		Dry Basis					MB	Lab		
Constituent		Result	Units	PQL	MDL	Method	Bias	Quals	Run #	
Gasoline Range Organ	ics (C4 - C12)	ND	mg/kg	1.2	0.33	EPA-8015B	ND		1	
a,a,a-Trifluorotoluene (FID Surrogate)	110	%	70 - 130 (LC	L - UCL)	EPA-8015B			1	

Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-8015B	04/04/17	04/04/17 21:36	AKM	GC-V8	1	B[D0061	

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H.T. Harvey & Associates 983 University Avenue, Building D Los Gatos, CA 95032 Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Total Petroleum Hydrocarbons

BCL Sample ID:	1708436-24	Client Sample	Name:	Composite	e 12-W-A,1	2-W-B, 3/30/2017	12:00:00AN	1	
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
TPH - Light Naptha		ND	mg/kg	60	24	EPA-8015B/FFP	ND		1
TPH - Aviation Gas		ND	mg/kg	60	24	EPA-8015B/FFP	ND		1
TPH - Stoddard Solvent		ND	mg/kg	24	6.0	EPA-8015B/FFP	ND		1
TPH - Heavy Naptha		ND	mg/kg	12	6.0	EPA-8015B/FFP	ND		1
TPH - Gasoline		ND	mg/kg	24	6.0	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP4)		ND	mg/kg	12	6.0	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP5)		ND	mg/kg	12	5.5	EPA-8015B/FFP	ND		1
TPH - Jet Fuel (JP8)		ND	mg/kg	12	6.0	EPA-8015B/FFP	ND		1
TPH - Kerosene		ND	mg/kg	12	1.7	EPA-8015B/FFP	ND		1
TPH - Diesel (FFP)		ND	mg/kg	12	1.4	EPA-8015B/FFP	ND		1
TPH - Fuel Oil #6		ND	mg/kg	12	6.0	EPA-8015B/FFP	ND		1
TPH - Crude Oil		ND	mg/kg	24	3.3	EPA-8015B/FFP	ND		1
TPH - Hydraulic Oil / Mot	or Oil	ND	mg/kg	24	7.8	EPA-8015B/FFP	ND		1
TPH - WD-40		ND	mg/kg	12	6.0	EPA-8015B/FFP	ND		1
Tetracosane (Surrogate)		77.7	%	30 - 130 (LC	L - UCL)	EPA-8015B/FFP			1

	Run						QC			
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID			
1	EPA-8015B/FFP	04/05/17	04/05/17 23:23	AS1	GC-2	0.990	B[D0338			

H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284
Project Manager: Matt Pollock

Chemical Analysis

BCL Sample ID:	1708436-24 Client Sample Name: Dry Basis Result Units 100 %			Composite	e 12-W-A,1	2-W-B, 3/30/20	1		
Constituent		•	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run#
Solids		100	%	0.06	0.06	SM-2540G			1

			Run				QC	
Run#	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	SM-2540G	04/11/17	04/11/17 14:00	DRC	MANUAL	1	B[D1084	

H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284
Project Manager: Matt Pollock

Total Concentrations (TTLC)

BCL Sample ID:	1708436-24	Client Sample	· ·					Л	
Constituent		Dry Basis Result	Units	PQL	MDL	Method	MB Bias	Lab Quals	Run #
Arsenic		1.8	mg/kg	0.60	0.20	EPA-6020	ND		1
Cadmium		0.14	mg/kg	0.30	0.057	EPA-6020	ND	J	2
Chromium		42	mg/kg	0.90	0.30	EPA-6020	ND		2
Copper		6.2	mg/kg	0.60	0.12	EPA-6020	ND		2
Lead		2.4	mg/kg	0.30	0.14	EPA-6020	ND		2
Mercury		ND	mg/kg	0.19	0.023	EPA-7471A	ND		3
Nickel		30	mg/kg	0.60	0.13	EPA-6020	0.13		2
Selenium		ND	mg/kg	0.60	0.13	EPA-6020	ND		2
Silver		ND	mg/kg	0.30	0.061	EPA-6020	ND		1
Zinc		20	mg/kg	1.6	0.60	EPA-6020	0.88		1

			Run				QC	
Run #	Method	Prep Date	Date/Time	Analyst	Instrument	Dilution	Batch ID	
1	EPA-6020	04/06/17	04/12/17 01:27	MH1	PE-EL2	0.952	B[D0469	
2	EPA-6020	04/06/17	04/11/17 01:19	MH1	PE-EL2	0.952	B[D0469	
3	EPA-7471A	04/04/17	04/05/17 09:43	MEV	CETAC2	0.977	B[D0216	



Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Organochlorine Pesticides (EPA Method 8081A)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B[D0494						
Aldrin	B[D0494-BLK1	ND	mg/kg	0.00050	0.000055	
alpha-BHC	B[D0494-BLK1	ND	mg/kg	0.00050	0.000064	
beta-BHC	B[D0494-BLK1	ND	mg/kg	0.00050	0.000071	
delta-BHC	B[D0494-BLK1	ND	mg/kg	0.00050	0.000059	
gamma-BHC (Lindane)	B[D0494-BLK1	ND	mg/kg	0.00050	0.000034	
Chlordane (Technical)	B[D0494-BLK1	ND	mg/kg	0.050	0.0015	
4,4'-DDD	B[D0494-BLK1	ND	mg/kg	0.00050	0.000085	
1,4'-DDE	B[D0494-BLK1	ND	mg/kg	0.00050	0.000083	
1,4'-DDT	B[D0494-BLK1	ND	mg/kg	0.00050	0.000078	
Dieldrin	B[D0494-BLK1	ND	mg/kg	0.00050	0.000070	
Endosulfan I	B[D0494-BLK1	ND	mg/kg	0.00050	0.000087	
Endosulfan II	B[D0494-BLK1	ND	mg/kg	0.00050	0.00011	
Endosulfan sulfate	B[D0494-BLK1	ND	mg/kg	0.00050	0.000099	
Endrin	B[D0494-BLK1	ND	mg/kg	0.00050	0.000087	
Endrin aldehyde	B[D0494-BLK1	ND	mg/kg	0.00050	0.000097	
Heptachlor	B[D0494-BLK1	ND	mg/kg	0.00050	0.000057	
Heptachlor epoxide	B[D0494-BLK1	ND	mg/kg	0.00050	0.000078	
Methoxychlor	B[D0494-BLK1	ND	mg/kg	0.00050	0.00011	
Гохарhene	B[D0494-BLK1	ND	mg/kg	0.050	0.0013	
CCMX (Surrogate)	B[D0494-BLK1	78.4	%	20 - 13	0 (LCL - UCL)	
Decachlorobiphenyl (Surrogate)	B[D0494-BLK1	72.3	%	40 - 13	0 (LCL - UCL)	
QC Batch ID: B[D0815						
Aldrin	B[D0815-BLK1	ND	mg/kg	0.00050	0.000055	
alpha-BHC	B[D0815-BLK1	ND	mg/kg	0.00050	0.000064	
peta-BHC	B[D0815-BLK1	ND	mg/kg	0.00050	0.000071	
delta-BHC	B[D0815-BLK1	ND	mg/kg	0.00050	0.000059	
gamma-BHC (Lindane)	B[D0815-BLK1	ND	mg/kg	0.00050	0.000034	
Chlordane (Technical)	B[D0815-BLK1	ND	mg/kg	0.050	0.0015	
1,4'-DDD	B[D0815-BLK1	ND	mg/kg	0.00050	0.000085	
4,4'-DDE	B[D0815-BLK1	ND	mg/kg	0.00050	0.000083	
4,4'-DDT	B[D0815-BLK1	ND	mg/kg	0.00050	0.000078	
Dieldrin	B[D0815-BLK1	ND	mg/kg	0.00050	0.000070	
Endosulfan I	B[D0815-BLK1	ND	mg/kg	0.00050	0.000087	

H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284
Project Manager: Matt Pollock

Organochlorine Pesticides (EPA Method 8081A)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B[D0815						
Endosulfan II	B[D0815-BLK1	ND	mg/kg	0.00050	0.00011	
Endosulfan sulfate	B[D0815-BLK1	ND	mg/kg	0.00050	0.000099	
Endrin	B[D0815-BLK1	ND	mg/kg	0.00050	0.000087	
Endrin aldehyde	B[D0815-BLK1	ND	mg/kg	0.00050	0.000097	
Heptachlor	B[D0815-BLK1	ND	mg/kg	0.00050	0.000057	
Heptachlor epoxide	B[D0815-BLK1	ND	mg/kg	0.00050	0.000078	
Methoxychlor	B[D0815-BLK1	ND	mg/kg	0.00050	0.00011	
Toxaphene	B[D0815-BLK1	ND	mg/kg	0.050	0.0013	
TCMX (Surrogate)	B[D0815-BLK1	78.5	%	20 - 13	0 (LCL - UCL)	
Decachlorobiphenyl (Surrogate)	B[D0815-BLK1	81.3	%	40 - 13	0 (LCL - UCL)	

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Organochlorine Pesticides (EPA Method 8081A)

Quality Control Report - Laboratory Control Sample

								Control I	_imits	
		_	-	Spike		Percent		Percent		Lab
Constituent	QC Sample ID	Туре	Result	Level	Units	Recovery	RPD	Recovery	RPD	Quals
QC Batch ID: B[D0494										
Aldrin	B[D0494-BS1	LCS	0.0044856	0.0050167	mg/kg	89.4		70 - 130		
gamma-BHC (Lindane)	B[D0494-BS1	LCS	0.0045157	0.0050167	mg/kg	90.0		60 - 140		
4,4'-DDT	B[D0494-BS1	LCS	0.0054405	0.0050167	mg/kg	108		60 - 140		
Dieldrin	B[D0494-BS1	LCS	0.0045291	0.0050167	mg/kg	90.3		70 - 130		
Endrin	B[D0494-BS1	LCS	0.0049940	0.0050167	mg/kg	99.5		60 - 140		
Heptachlor	B[D0494-BS1	LCS	0.0048194	0.0050167	mg/kg	96.1		60 - 140		
TCMX (Surrogate)	B[D0494-BS1	LCS	0.0073615	0.010033	mg/kg	73.4		20 - 130		
Decachlorobiphenyl (Surrogate)	B[D0494-BS1	LCS	0.014398	0.020067	mg/kg	71.7		40 - 130		
QC Batch ID: B[D0815										
Aldrin	B[D0815-BS1	LCS	0.0045098	0.0050676	mg/kg	89.0		70 - 130		
gamma-BHC (Lindane)	B[D0815-BS1	LCS	0.0045622	0.0050676	mg/kg	90.0		60 - 140		
4,4'-DDT	B[D0815-BS1	LCS	0.0042064	0.0050676	mg/kg	83.0		60 - 140		
Dieldrin	B[D0815-BS1	LCS	0.0045294	0.0050676	mg/kg	89.4		70 - 130		
Endrin	B[D0815-BS1	LCS	0.0049307	0.0050676	mg/kg	97.3		60 - 140		
Heptachlor	B[D0815-BS1	LCS	0.0045358	0.0050676	mg/kg	89.5		60 - 140		
TCMX (Surrogate)	B[D0815-BS1	LCS	0.0073497	0.010135	mg/kg	72.5		20 - 130		
Decachlorobiphenyl (Surrogate)	B[D0815-BS1	LCS	0.015658	0.020270	mg/kg	77.2		40 - 130		

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Organochlorine Pesticides (EPA Method 8081A)

Quality Control Report - Precision & Accuracy

									Control Limits					
		Source	Source		Spike			Percent		Percent	Lab			
Constituent	Type	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals			
QC Batch ID: B[D0494	Use	d client sam	ple: N											
Aldrin	— MS	1708279-02	ND	0.0079347	0.0050505	mg/kg		157		50 - 140	Q03			
	MSD	1708279-02	ND	0.0039767	0.0050000	mg/kg	66.5	79.5	30	50 - 140	Q02			
gamma-BHC (Lindane)	MS	1708279-02	ND	0.0036886	0.0050505	mg/kg		73.0		50 - 140				
	MSD	1708279-02	ND	0.0041803	0.0050000	mg/kg	12.5	83.6	30	50 - 140				
4,4'-DDT	MS	1708279-02	0.00059495	0.0042717	0.0050505	mg/kg		72.8		50 - 140				
	MSD	1708279-02	0.00059495	0.0047873	0.0050000	mg/kg	11.4	83.8	30	50 - 140				
Dieldrin	MS	1708279-02	ND	0.0030562	0.0050505	mg/kg		60.5		40 - 140				
	MSD	1708279-02	ND	0.0035843	0.0050000	mg/kg	15.9	71.7	30	40 - 140				
 Endrin	MS	1708279-02	ND	0.0037330	0.0050505	mg/kg		73.9		50 - 150				
	MSD	1708279-02	ND	0.0044167	0.0050000	mg/kg	16.8	88.3	30	50 - 150				
Heptachlor	MS	1708279-02	ND	0.0037519	0.0050505	mg/kg		74.3		60 - 140				
	MSD	1708279-02	ND	0.0041333	0.0050000	mg/kg	9.7	82.7	30	60 - 140				
CMX (Surrogate)	MS	1708279-02	ND	0.0054242	0.010101	mg/kg		53.7		20 - 130				
	MSD	1708279-02	ND	0.0040360	0.010000	mg/kg	29.3	40.4		20 - 130				
	MS	1708279-02	ND	0.0087879	0.020202	mg/kg		43.5		40 - 130				
	MSD	1708279-02	ND	0.0091987	0.020000	mg/kg	4.6	46.0		40 - 130				
QC Batch ID: B[D0815	Use	d client sam	ple: Y - Des	cription: Co	mposite 1-0	-A,1-O-B,	03/30/2	2017 00:00						
Aldrin	— MS	1708436-01	ND	0.0045321	0.0050167	mg/kg		90.3		50 - 140				
	MSD	1708436-01	ND	0.0045543	0.0050000	mg/kg	0.5	91.1	30	50 - 140				
gamma-BHC (Lindane)	MS	1708436-01	ND	0.0046686	0.0050167	mg/kg		93.1		50 - 140				
	MSD	1708436-01	ND	0.0046160	0.0050000	mg/kg	1.1	92.3	30	50 - 140				
 4,4'-DDT	MS	1708436-01	ND	0.0046880	0.0050167	mg/kg		93.4		50 - 140				
	MSD	1708436-01	ND	0.0046643	0.0050000	mg/kg	0.5	93.3	30	50 - 140				
 Dieldrin	MS	1708436-01	ND	0.0046980	0.0050167	mg/kg		93.6		40 - 140				
	MSD	1708436-01	ND	0.0047153	0.0050000	mg/kg	0.4	94.3	30	40 - 140				
 Endrin	MS	1708436-01	ND	0.0053863	0.0050167	mg/kg		107		50 - 150				
	MSD	1708436-01	ND	0.0053213	0.0050000	mg/kg	1.2	106	30	50 - 150				
	MS	1708436-01	ND	0.0045050	0.0050167	mg/kg		89.8		60 - 140				
•	MSD	1708436-01	ND	0.0045993	0.0050000	mg/kg	2.1	92.0	30	60 - 140				
TCMX (Surrogate)	MS	1708436-01	ND	0.0073191	0.010033	mg/kg		73.0		20 - 130				
(/	MSD	1708436-01	ND	0.0071837	0.010000	mg/kg	1.9	71.8		20 - 130				
	MS	1708436-01	ND	0.016728	0.020067	mg/kg		83.4		40 - 130				
= ====================================	MSD	1708436-01	ND	0.015917	0.020007	mg/kg	5.0	79.6		40 - 130				

H.T. Harvey & Associates Reported: 04/14/2017 10:38 983 University Avenue, Building D Project: Alameda Point

Los Gatos, CA 95032 Project Number: 15284
Project Manager: Matt Pollock

PCB Analysis (EPA Method 8082)

Quality Control Report - Method Blank Analysis

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B[D0361						
PCB-1016	B[D0361-BLK1	ND	mg/kg	0.010	0.0039	
PCB-1221	B[D0361-BLK1	ND	mg/kg	0.010	0.0072	
PCB-1232	B[D0361-BLK1	ND	mg/kg	0.010	0.0074	
PCB-1242	B[D0361-BLK1	ND	mg/kg	0.010	0.0042	
PCB-1248	B[D0361-BLK1	ND	mg/kg	0.010	0.0070	
PCB-1254	B[D0361-BLK1	ND	mg/kg	0.010	0.0032	
PCB-1260	B[D0361-BLK1	ND	mg/kg	0.010	0.0029	
Total PCB's (Summation)	B[D0361-BLK1	ND	mg/kg	0.010	0.0050	
Decachlorobiphenyl (Surrogate)	B[D0361-BLK1	105	%	40 - 12	0 (LCL - UCL)	
QC Batch ID: B[D0798						
PCB-1016	B[D0798-BLK1	ND	mg/kg	0.010	0.0039	
PCB-1221	B[D0798-BLK1	ND	mg/kg	0.010	0.0072	
PCB-1232	B[D0798-BLK1	ND	mg/kg	0.010	0.0074	
PCB-1242	B[D0798-BLK1	ND	mg/kg	0.010	0.0042	
PCB-1248	B[D0798-BLK1	ND	mg/kg	0.010	0.0070	
PCB-1254	B[D0798-BLK1	ND	mg/kg	0.010	0.0032	
PCB-1260	B[D0798-BLK1	ND	mg/kg	0.010	0.0029	
Total PCB's (Summation)	B[D0798-BLK1	ND	mg/kg	0.010	0.0050	
Decachlorobiphenyl (Surrogate)	B[D0798-BLK1	71.7	%	40 - 12	0 (LCL - UCL)	

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

PCB Analysis (EPA Method 8082)

Quality Control Report - Laboratory Control Sample

	_		•		•		•				
								Control I	imits		
				Spike		Percent		Percent		Lab	
Constituent	QC Sample ID	Туре	Result	Level	Units	Recovery	RPD	Recovery	RPD	Quals	
QC Batch ID: B[D0361											
PCB-1016	B[D0361-BS1	LCS	0.092131	0.081967	mg/kg	112		60 - 120			
PCB-1260	B[D0361-BS1	LCS	0.083934	0.081967	mg/kg	102		60 - 120			
Decachlorobiphenyl (Surrogate)	B[D0361-BS1	LCS	0.018033	0.019672	mg/kg	91.7		40 - 120			
QC Batch ID: B[D0798											
PCB-1016	B[D0798-BS1	LCS	0.086557	0.081967	mg/kg	106		60 - 120			
PCB-1260	B[D0798-BS1	LCS	0.082951	0.081967	mg/kg	101		60 - 120			
Decachlorobiphenyl (Surrogate)	B[D0798-BS1	LCS	0.015738	0.019672	mg/kg	80.0		40 - 120			

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

PCB Analysis (EPA Method 8082)

									Cont	rol Limits	
		Source	Source		Spike			Percent		Percent	Lab
Constituent	Type	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals
QC Batch ID: B[D0361	Use	d client samp	le: N								
PCB-1016	MS	1708568-04	ND	0.090847	0.084746	mg/kg		107		60 - 120	
	MSD	1708568-04	ND	0.092256	0.084175	mg/kg	1.5	110	30	60 - 120	
PCB-1260	MS	1708568-04	ND	0.056271	0.084746	mg/kg		66.4		60 - 120	
	MSD	1708568-04	ND	0.054882	0.084175	mg/kg	2.5	65.2	30	60 - 120	
Decachlorobiphenyl (Surrogate)	MS	1708568-04	ND	0.0084746	0.020339	mg/kg		41.7		40 - 120	
	MSD	1708568-04	ND	0.0090909	0.020202	mg/kg	7.0	45.0		40 - 120	
QC Batch ID: B[D0798	Use	d client samp	le: Y - Des	scription: Co	mposite 3-W	/-A,3-W-B	, 03/30/	2017 00:00)		
PCB-1016	 MS	1708436-06	ND	0.086242	0.083893	mg/kg		103		60 - 120	
	MSD	1708436-06	ND	0.083333	0.083333	mg/kg	3.4	100	30	60 - 120	
PCB-1260	MS	1708436-06	ND	0.066107	0.083893	mg/kg		78.8		60 - 120	
	MSD	1708436-06	ND	0.072000	0.083333	mg/kg	8.5	86.4	30	60 - 120	
Decachlorobiphenyl (Surrogate)	MS	1708436-06	ND	0.010738	0.020134	mg/kg		53.3		40 - 120	
	MSD	1708436-06	ND	0.010333	0.020000	mg/kg	3.8	51.7		40 - 120	



Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B[D0904						
Acenaphthene	B[D0904-BLK1	ND	mg/kg	0.0030	0.0010	
Acenaphthylene	B[D0904-BLK1	ND	mg/kg	0.0030	0.0010	
Anthracene	B[D0904-BLK1	ND	mg/kg	0.0030	0.0010	
Benzo[a]anthracene	B[D0904-BLK1	ND	mg/kg	0.0030	0.0013	
Benzo[b]fluoranthene	B[D0904-BLK1	ND	mg/kg	0.0030	0.0010	
Benzo[k]fluoranthene	B[D0904-BLK1	ND	mg/kg	0.0030	0.0010	
Benzo[a]pyrene	B[D0904-BLK1	ND	mg/kg	0.0030	0.0010	
Benzo[g,h,i]perylene	B[D0904-BLK1	ND	mg/kg	0.0030	0.0010	
Chrysene	B[D0904-BLK1	ND	mg/kg	0.0030	0.0010	
Dibenzo[a,h]anthracene	B[D0904-BLK1	ND	mg/kg	0.0030	0.0010	
Fluoranthene	B[D0904-BLK1	ND	mg/kg	0.0030	0.0011	
Fluorene	B[D0904-BLK1	ND	mg/kg	0.0030	0.0010	
Indeno[1,2,3-cd]pyrene	B[D0904-BLK1	ND	mg/kg	0.0030	0.0010	
Naphthalene	B[D0904-BLK1	ND	mg/kg	0.0030	0.0010	
Phenanthrene	B[D0904-BLK1	ND	mg/kg	0.0030	0.0010	
Pyrene	B[D0904-BLK1	ND	mg/kg	0.0030	0.0016	
Benzo[e]pyrene	B[D0904-BLK1	ND	mg/kg	0.0050	0.0020	
1,1-Biphenyl	B[D0904-BLK1	ND	mg/kg	0.0050	0.0020	
2,6-Dimethylnaphthalene	B[D0904-BLK1	ND	mg/kg	0.0050	0.0020	
1-Methylnaphthalene	B[D0904-BLK1	ND	mg/kg	0.0030	0.0010	
2-Methylnaphthalene	B[D0904-BLK1	ND	mg/kg	0.0030	0.0010	
2-Methylphenanthrene	B[D0904-BLK1	ND	mg/kg	0.0050	0.0020	
3-Methylphenanthrene	B[D0904-BLK1	ND	mg/kg	0.0050	0.0020	
Perylene	B[D0904-BLK1	ND	mg/kg	0.0050	0.0020	
2,3,5-Trimethylnaphthalene	B[D0904-BLK1	ND	mg/kg	0.0050	0.0020	
Total Low (MW) PAHs	B[D0904-BLK1	ND	mg/kg	0.0050	0.0020	
Total High (MW) PAHs	B[D0904-BLK1	ND	mg/kg	0.0050	0.0020	
Total PAHs	B[D0904-BLK1	ND	mg/kg	0.0050	0.0020	
Nitrobenzene-d5 (Surrogate)	B[D0904-BLK1	81.0	%	30 - 110	(LCL - UCL)	
2-Fluorobiphenyl (Surrogate)	B[D0904-BLK1	88.5	%	40 - 120	(LCL - UCL)	
p-Terphenyl-d14 (Surrogate)	B[D0904-BLK1	92.3	%	30 - 120	(LCL - UCL)	
QC Batch ID: B[D0908						
Acenaphthene	B[D0908-BLK1	ND	mg/kg	0.0030	0.0010	



Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B[D0908						
Acenaphthylene	B[D0908-BLK1	ND	mg/kg	0.0030	0.0010	
Anthracene	B[D0908-BLK1	ND	mg/kg	0.0030	0.0010	
Benzo[a]anthracene	B[D0908-BLK1	ND	mg/kg	0.0030	0.0013	
Benzo[b]fluoranthene	B[D0908-BLK1	ND	mg/kg	0.0030	0.0010	
Benzo[k]fluoranthene	B[D0908-BLK1	ND	mg/kg	0.0030	0.0010	
Benzo[a]pyrene	B[D0908-BLK1	ND	mg/kg	0.0030	0.0010	
Benzo[g,h,i]perylene	B[D0908-BLK1	ND	mg/kg	0.0030	0.0010	
Chrysene	B[D0908-BLK1	ND	mg/kg	0.0030	0.0010	
Dibenzo[a,h]anthracene	B[D0908-BLK1	ND	mg/kg	0.0030	0.0010	
Fluoranthene	B[D0908-BLK1	ND	mg/kg	0.0030	0.0011	
Fluorene	B[D0908-BLK1	ND	mg/kg	0.0030	0.0010	
Indeno[1,2,3-cd]pyrene	B[D0908-BLK1	ND	mg/kg	0.0030	0.0010	
Naphthalene	B[D0908-BLK1	ND	mg/kg	0.0030	0.0010	
Phenanthrene	B[D0908-BLK1	ND	mg/kg	0.0030	0.0010	
Pyrene	B[D0908-BLK1	ND	mg/kg	0.0030	0.0016	
Benzo[e]pyrene	B[D0908-BLK1	ND	mg/kg	0.0050	0.0020	
1,1-Biphenyl	B[D0908-BLK1	ND	mg/kg	0.0050	0.0020	
2,6-Dimethylnaphthalene	B[D0908-BLK1	ND	mg/kg	0.0050	0.0020	
1-Methylnaphthalene	B[D0908-BLK1	ND	mg/kg	0.0030	0.0010	
2-Methylnaphthalene	B[D0908-BLK1	ND	mg/kg	0.0030	0.0010	
2-Methylphenanthrene	B[D0908-BLK1	ND	mg/kg	0.0050	0.0020	
3-Methylphenanthrene	B[D0908-BLK1	ND	mg/kg	0.0050	0.0020	
Perylene	B[D0908-BLK1	ND	mg/kg	0.0050	0.0020	
2,3,5-Trimethylnaphthalene	B[D0908-BLK1	ND	mg/kg	0.0050	0.0020	
Total Low (MW) PAHs	B[D0908-BLK1	ND	mg/kg	0.0050	0.0020	
Total High (MW) PAHs	B[D0908-BLK1	ND	mg/kg	0.0050	0.0020	
Total PAHs	B[D0908-BLK1	ND	mg/kg	0.0050	0.0020	
Nitrobenzene-d5 (Surrogate)	B[D0908-BLK1	85.0	%	30 - 110		
2-Fluorobiphenyl (Surrogate)	B[D0908-BLK1	79.3	%	40 - 120 (LCL - UCL)		
p-Terphenyl-d14 (Surrogate)	B[D0908-BLK1	69.8	%	30 - 120	(LCL - UCL)	



Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

Constituent	QC Sample ID	Type	Result	Spike Level	Units	Percent Recovery	RPD	Control L Percent Recovery	 Lab Quals
Γ	QO Gample ID	Турс	resuit	Level	Office	Recovery	10111	Recovery	 Quais
QC Batch ID: B[D0904	DIDOOM BOA		0.000750	0.000005		400		00 400	
Acenaphthene	B[D0904-BS1	LCS	0.033750	0.032895	mg/kg	103		60 - 130	
Acenaphthylene	B[D0904-BS1	LCS	0.035312	0.032895	mg/kg	107		60 - 130	
Anthracene	B[D0904-BS1	LCS	0.035000	0.032895	mg/kg	106		60 - 130	
Benzo[a]anthracene	B[D0904-BS1	LCS	0.041562	0.032895	mg/kg	126		60 - 130	
Benzo[b]fluoranthene	B[D0904-BS1	LCS	0.039062	0.032895	mg/kg	119		50 - 130	
Benzo[k]fluoranthene	B[D0904-BS1	LCS	0.039375	0.032895	mg/kg	120		60 - 130	
Benzo[a]pyrene	B[D0904-BS1	LCS	0.035938	0.032895	mg/kg	109		60 - 130	
Benzo[g,h,i]perylene	B[D0904-BS1	LCS	0.029062	0.032895	mg/kg	88.3		50 - 130	
Chrysene	B[D0904-BS1	LCS	0.035938	0.032895	mg/kg	109		50 - 130	
Dibenzo[a,h]anthracene	B[D0904-BS1	LCS	0.031250	0.032895	mg/kg	95.0		50 - 130	
Fluoranthene	B[D0904-BS1	LCS	0.040938	0.032895	mg/kg	124		60 - 130	
Fluorene	B[D0904-BS1	LCS	0.035312	0.032895	mg/kg	107		50 - 130	
Indeno[1,2,3-cd]pyrene	B[D0904-BS1	LCS	0.030938	0.032895	mg/kg	94.0		50 - 130	
Naphthalene	B[D0904-BS1	LCS	0.032812	0.032895	mg/kg	99.7		50 - 130	
Phenanthrene	B[D0904-BS1	LCS	0.033125	0.032895	mg/kg	101		50 - 130	
Pyrene	B[D0904-BS1	LCS	0.045938	0.032895	mg/kg	140		50 - 130	L21
Nitrobenzene-d5 (Surrogate)	B[D0904-BS1	LCS	0.12312	0.13158	mg/kg	93.6		30 - 110	
2-Fluorobiphenyl (Surrogate)	B[D0904-BS1	LCS	0.12281	0.13158	mg/kg	93.3		40 - 120	
p-Terphenyl-d14 (Surrogate)	B[D0904-BS1	LCS	0.12406	0.13158	mg/kg	94.3		30 - 120	
QC Batch ID: B[D0908									
Acenaphthene	B[D0908-BS1	LCS	0.029137	0.033445	mg/kg	87.1		60 - 130	
Acenaphthylene	B[D0908-BS1	LCS	0.032117	0.033445	mg/kg	96.0		60 - 130	
Anthracene	B[D0908-BS1	LCS	0.030462	0.033445	mg/kg	91.1		60 - 130	
Benzo[a]anthracene	B[D0908-BS1	LCS	0.038077	0.033445	mg/kg	114		60 - 130	
Benzo[b]fluoranthene	B[D0908-BS1	LCS	0.036753	0.033445	mg/kg	110		50 - 130	
Benzo[k]fluoranthene	B[D0908-BS1	LCS	0.032117	0.033445	mg/kg	96.0		60 - 130	
Benzo[a]pyrene	B[D0908-BS1	LCS	0.031455	0.033445	mg/kg	94.1		60 - 130	
Benzo[g,h,i]perylene	B[D0908-BS1	LCS	0.034435	0.033445	mg/kg	103		50 - 130	
Chrysene	B[D0908-BS1	LCS	0.028144	0.033445	mg/kg	84.2		50 - 130	
Dibenzo[a,h]anthracene	B[D0908-BS1	LCS	0.039732	0.033445	mg/kg	119		50 - 130	
Fluoranthene	B[D0908-BS1	LCS	0.037084	0.033445	mg/kg	111		60 - 130	
Fluorene	B[D0908-BS1	LCS	0.032117	0.033445	mg/kg	96.0		50 - 130	
Indeno[1,2,3-cd]pyrene	B[D0908-BS1	LCS	0.033773	0.033445	mg/kg	101		50 - 130	
F 1 1 2 2 2					- J J	•			



Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

								Control L	<u>imits</u>	
				Spike		Percent		Percent		Lab
Constituent	QC Sample ID	Type	Result	Level	Units	Recovery	RPD	Recovery	RPD	Quals
QC Batch ID: B[D0908										
Naphthalene	B[D0908-BS1	LCS	0.027813	0.033445	mg/kg	83.2		50 - 130		
Phenanthrene	B[D0908-BS1	LCS	0.032448	0.033445	mg/kg	97.0		50 - 130		
Pyrene	B[D0908-BS1	LCS	0.031786	0.033445	mg/kg	95.0		50 - 130		
Nitrobenzene-d5 (Surrogate)	B[D0908-BS1	LCS	0.10132	0.13378	mg/kg	75.7		30 - 110		
2-Fluorobiphenyl (Surrogate)	B[D0908-BS1	LCS	0.10595	0.13378	mg/kg	79.2		40 - 120		
p-Terphenyl-d14 (Surrogate)	B[D0908-BS1	LCS	0.097344	0.13378	mg/kg	72.8		30 - 120		

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Project Number: 15284
Project Manager: Matt Pollock

Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

Constituent	Type	Source	Source		Spike			Percent		Percent	1 -1-
Constituent	Type				-			reicent		reicent	Lab
	71.	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals
QC Batch ID: B[D0904	Use	d client samp	le: N								
Acenaphthene	┛ MS	1705207-41	ND	0.031250	0.032895	mg/kg		95.0		50 - 130	
·	MSD	1705207-41	ND	0.032859	0.033557	mg/kg	5.0	97.9	30	50 - 130	
Acenaphthylene	MS	1705207-41	ND	0.034688	0.032895	mg/kg		105		50 - 130	
, isomaphic, joine	MSD	1705207-41	ND	0.035114	0.033557	mg/kg	1.2	105	30	50 - 130	
Anthracene	MS	1705207-41	ND	0.033438	0.032895	mg/kg		102		50 - 130	
7 414 114 435 115	MSD	1705207-41	ND	0.034792	0.033557	mg/kg	4.0	104	30	50 - 130	
Benzo[a]anthracene	MS	1705207-41	ND	0.043750	0.032895	mg/kg		133		50 - 130	Q03
Denizo[a]antinacene	MSD	1705207-41	ND	0.040268	0.032557	mg/kg	8.3	120	30	50 - 130	QUJ
Benzo[b]fluoranthene	MS	1705207-41	ND	0.040625	0.032895	mg/kg		124		40 - 130	
Den Zojoji dorana iche	MSD	1705207-41	ND	0.037369	0.033557	mg/kg	8.3	111	30	40 - 130	
Benzo[k]fluoranthene	MS	1705207-41	ND	0.036562	0.032895	mg/kg		111		40 - 130	
Denzo[k]nuoranmene	MSD	1705207-41	ND	0.030302	0.032693	mg/kg	3.0	112	30	40 - 130	
Dannelalaurana											
Benzo[a]pyrene	MS	1705207-41 1705207-41	ND ND	0.036250 0.037691	0.032895 0.033557	mg/kg mg/kg	3.9	110 112	30	40 - 130 40 - 130	
	MSD						3.5		30		
Benzo[g,h,i]perylene	MS	1705207-41	ND	0.030312	0.032895	mg/kg	0.0	92.1	20	40 - 130	
	MSD	1705207-41	ND	0.027705	0.033557	mg/kg	9.0	82.6	30	40 - 130	
Chrysene	MS	1705207-41	ND	0.033750	0.032895	mg/kg		103		40 - 130	
	MSD	1705207-41	ND	0.035114	0.033557	mg/kg	4.0	105	30	40 - 130	
Dibenzo[a,h]anthracene	MS	1705207-41	ND	0.032188	0.032895	mg/kg		97.8		40 - 130	
	MSD	1705207-41	ND	0.028349	0.033557	mg/kg	12.7	84.5	30	40 - 130	
Fluoranthene	MS	1705207-41	ND	0.040312	0.032895	mg/kg		123		40 - 130	
	MSD	1705207-41	ND	0.040913	0.033557	mg/kg	1.5	122	30	40 - 130	
Fluorene	MS	1705207-41	ND	0.034375	0.032895	mg/kg		104		40 - 130	
	MSD	1705207-41	ND	0.034470	0.033557	mg/kg	0.3	103	30	40 - 130	
Indeno[1,2,3-cd]pyrene	MS	1705207-41	ND	0.031250	0.032895	mg/kg		95.0		30 - 130	
	MSD	1705207-41	ND	0.027705	0.033557	mg/kg	12.0	82.6	30	30 - 130	
Naphthalene	MS	1705207-41	ND	0.031250	0.032895	mg/kg		95.0		50 - 130	
•	MSD	1705207-41	ND	0.031570	0.033557	mg/kg	1.0	94.1	30	50 - 130	
Phenanthrene	MS	1705207-41	ND	0.032188	0.032895	mg/kg		97.8		40 - 130	
	MSD	1705207-41	ND	0.032859	0.033557	mg/kg	2.1	97.9	30	40 - 130	
Pyrene	MS	1705207-41	ND	0.047188	0.032895	mg/kg		143		40 - 130	Q03
- y v	MSD	1705207-41	ND	0.046067	0.033557	mg/kg	2.4	137	30	40 - 130	Q03
Nitrobenzene-d5 (Surrogate)	MS	1705207-41	ND	0.11594	0.13158	mg/kg		88.1		30 - 110	
(-4	MSD	1705207-41	ND	0.11372	0.13423	mg/kg	1.9	84.7		30 - 110	
2-Fluorobiphenyl (Surrogate)	MS	1705207-41	ND	0.11375	0.13158	mg/kg		86.4		40 - 120	
2 i ladiobiphenyi (danogate)		1705207-41	ND	0.11984	0.13136		5.2	89.3		40 - 120	
	MSD	1100201-41	IND	0.11904	0.13423	mg/kg	J.Z	08.3		70 - 120	

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Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

									Cont	rol Limits	
		Source	Source		Spike			Percent		Percent	Lab
Constituent	Туре	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals
QC Batch ID: B[D0904	Use	d client sam	ple: N								
p-Terphenyl-d14 (Surrogate)	MS	1705207-41	ND	0.11781	0.13158	mg/kg		89.5		30 - 120	
	MSD	1705207-41	ND	0.12370	0.13423	mg/kg	4.9	92.2		30 - 120	
QC Batch ID: B[D0908	Use	d client sam	ole: Y - Des	cription: Co	mposite 11-0	O-A,11-O-	B, 03/3	0/2017 00:0	00		
Acenaphthene	─ MS	1708436-21	ND	0.027060	0.033333	mg/kg		81.2		50 - 130	
	MSD	1708436-21	ND	0.022442	0.033003	mg/kg	18.7	68.0	30	50 - 130	
Acenaphthylene	MS	1708436-21	ND	0.030030	0.033333	mg/kg		90.1		50 - 130	
• ,	MSD	1708436-21	ND	0.025083	0.033003	mg/kg	18.0	76.0	30	50 - 130	
Anthracene	MS	1708436-21	ND	0.029040	0.033333	mg/kg		87.1		50 - 130	
,	MSD	1708436-21	ND	0.024092	0.033003	mg/kg	18.6	73.0	30	50 - 130	
Benzo[a]anthracene	MS	1708436-21	0.0028896	0.037950	0.033333	mg/kg		105		50 - 130	
Denzo[a]antinacene	MSD	1708436-21	0.0028896	0.037353	0.033003	mg/kg	19.0	86.2	30	50 - 130	
Don-ofh Iffuoronth on o		1708436-21	0.0073846		0.033333						
Benzo[b]fluoranthene	MS MSD	1708436-21	0.0073846	0.037620 0.030363	0.033333	mg/kg mg/kg	21.3	90.7 69.6	30	40 - 130 40 - 130	
							21.0		30		
Benzo[k]fluoranthene	MS	1708436-21	0.0025686	0.027060	0.033333	mg/kg	00.4	73.5		40 - 130	
	MSD	1708436-21	0.0025686	0.022112	0.033003	mg/kg	20.1	59.2	30	40 - 130	
Benzo[a]pyrene	MS	1708436-21	0.0061003	0.030360	0.033333	mg/kg		72.8		40 - 130	
	MSD	1708436-21	0.0061003	0.025083	0.033003	mg/kg	19.0	57.5	30	40 - 130	
Benzo[g,h,i]perylene	MS	1708436-21	0.0057793	0.033660	0.033333	mg/kg		83.6		40 - 130	
	MSD	1708436-21	0.0057793	0.024092	0.033003	mg/kg	33.1	55.5	30	40 - 130	Q02
Chrysene	MS	1708436-21	0.0025686	0.026400	0.033333	mg/kg		71.5		40 - 130	
	MSD	1708436-21	0.0025686	0.021782	0.033003	mg/kg	19.2	58.2	30	40 - 130	
Dibenzo[a,h]anthracene	MS	1708436-21	ND	0.032010	0.033333	mg/kg		96.0		40 - 130	
	MSD	1708436-21	ND	0.023102	0.033003	mg/kg	32.3	70.0	30	40 - 130	Q02
Fluoranthene	MS	1708436-21	0.0048161	0.039930	0.033333	mg/kg		105		40 - 130	
	MSD	1708436-21	0.0048161	0.033003	0.033003	mg/kg	19.0	85.4	30	40 - 130	
Fluorene	MS	1708436-21	ND	0.029700	0.033333	mg/kg		89.1		40 - 130	
	MSD	1708436-21	ND	0.024752	0.033003	mg/kg	18.2	75.0	30	40 - 130	
Indeno[1,2,3-cd]pyrene	MS	1708436-21	0.0051371	0.030030	0.033333	mg/kg		74.7		30 - 130	
	MSD	1708436-21	0.0051371	0.021782	0.033003	mg/kg	31.8	50.4	30	30 - 130	Q02
Naphthalene	MS	1708436-21	ND	0.026400	0.033333	mg/kg		79.2		50 - 130	
	MSD	1708436-21	ND	0.022112	0.033003	mg/kg	17.7	67.0	30	50 - 130	
Phenanthrene	MS	1708436-21	ND	0.032340	0.033333	mg/kg		97.0		40 - 130	
i nonantinene	MSD	1708436-21	ND	0.032340	0.033333	mg/kg	19.0	81.0	30	40 - 130	
Durana											
Pyrene	MS	1708436-21	0.0057793	0.035640	0.033333	mg/kg	10.2	89.6	20	40 - 130	
	MSD	1708436-21	0.0057793	0.029373	0.033003	mg/kg	19.3	71.5	30	40 - 130	
Nitrobenzene-d5 (Surrogate)	MS	1708436-21	ND	0.10758	0.13333	mg/kg		80.7		30 - 110	
	MSD	1708436-21	ND	0.087459	0.13201	mg/kg	20.6	66.3		30 - 110	

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Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Polynuclear Aromatic Hydrocarbons (EPA Method 8270C-SIM)

									Contr		
		Source	Source		Spike			Percent		Percent	Lab
Constituent	Type	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals
QC Batch ID: B[D0908	Use	d client samp	le: Y - Des	scription: Co	mposite 11-0	O-A,11-O-	B, 03/3	0/2017 00:0	00		
2-Fluorobiphenyl (Surrogate)	— MS	1708436-21	ND	0.098010	0.13333	mg/kg	•	73.5		40 - 120	
	MSD	1708436-21	ND	0.083498	0.13201	mg/kg	16.0	63.3		40 - 120	
p-Terphenyl-d14 (Surrogate)	MS	1708436-21	ND	0.079860	0.13333	mg/kg		59.9		30 - 120	
	MSD	1708436-21	ND	0.071287	0.13201	mg/kg	11.3	54.0		30 - 120	

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Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Purgeable Aromatics and Total Petroleum Hydrocarbons

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B[D0037						
Gasoline Range Organics (C4 - C12)	B[D0037-BLK1	ND	mg/kg	1.0	0.28	
a,a,a-Trifluorotoluene (FID Surrogate)	B[D0037-BLK1	97.5	%	70 - 13	0 (LCL - UCL)	
QC Batch ID: B[D0061						
Gasoline Range Organics (C4 - C12)	B[D0061-BLK1	ND	mg/kg	1.0	0.28	
a,a,a-Trifluorotoluene (FID Surrogate)	B[D0061-BLK1	100	%	70 - 13	0 (LCL - UCL)	
QC Batch ID: B[D0399						
Gasoline Range Organics (C4 - C12)	B[D0399-BLK1	ND	mg/kg	1.0	0.28	
a,a,a-Trifluorotoluene (FID Surrogate)	B[D0399-BLK1	100	%	70 - 13	0 (LCL - UCL)	

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Purgeable Aromatics and Total Petroleum Hydrocarbons

								Control L	imits	Lab
Constituent	QC Sample ID	Туре	Result	Spike Level	Units	Percent Recovery	RPD	Percent Recovery	RPD	Quals
QC Batch ID: B[D0037										
Gasoline Range Organics (C4 - C12)	B[D0037-BS1	LCS	5.5440	5.0000	mg/kg	111		85 - 115		
a,a,a-Trifluorotoluene (FID Surrogate)	B[D0037-BS1	LCS	0.037000	0.040000	mg/kg	92.5		70 - 130		
QC Batch ID: B[D0061										
Gasoline Range Organics (C4 - C12)	B[D0061-BS1	LCS	5.3420	5.0000	mg/kg	107		85 - 115		
a,a,a-Trifluorotoluene (FID Surrogate)	B[D0061-BS1	LCS	0.042000	0.040000	mg/kg	105		70 - 130		
QC Batch ID: B[D0399										
Gasoline Range Organics (C4 - C12)	B[D0399-BS1	LCS	5.0390	5.0000	mg/kg	101		85 - 115		
a,a,a-Trifluorotoluene (FID Surrogate)	B[D0399-BS1	LCS	0.039000	0.040000	mg/kg	97.5		70 - 130		

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Project Manager: Matt Pollock

Purgeable Aromatics and Total Petroleum Hydrocarbons

								_	Cont	rol Limits	
		Source	Source		Spike			Percent		Percent	Lab
Constituent	Type	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals
QC Batch ID: B[D0037	Use	d client samp	ole: N								
Gasoline Range Organics (C4 - C12)	MS	1705207-44	ND	4.7720	5.0000	mg/kg		95.4		70 - 130	
	MSD	1705207-44	ND	4.6880	5.0000	mg/kg	1.8	93.8	20	70 - 130	
a,a,a-Trifluorotoluene (FID Surrogate)	MS	1705207-44	ND	0.034000	0.040000	mg/kg		85.0		70 - 130	
	MSD	1705207-44	ND	0.034000	0.040000	mg/kg	0	85.0		70 - 130	
QC Batch ID: B[D0061	Use	d client samp	ole: N								
Gasoline Range Organics (C4 - C12)	MS	1705207-43	ND	5.0850	5.0000	mg/kg		102		70 - 130	
	MSD	1705207-43	ND	5.4040	5.0000	mg/kg	6.1	108	20	70 - 130	
a,a,a-Trifluorotoluene (FID Surrogate)	MS	1705207-43	ND	0.039000	0.040000	mg/kg		97.5		70 - 130	
	MSD	1705207-43	ND	0.034000	0.040000	mg/kg	13.7	85.0		70 - 130	
QC Batch ID: B[D0399	Use	d client samp	ole: N								
Gasoline Range Organics (C4 - C12)	MS	1705207-42	ND	5.2860	5.0000	mg/kg		106		70 - 130	
	MSD	1705207-42	ND	4.9870	5.0000	mg/kg	5.8	99.7	20	70 - 130	
a,a,a-Trifluorotoluene (FID Surrogate)	MS	1705207-42	ND	0.038000	0.040000	mg/kg		95.0		70 - 130	
	MSD	1705207-42	ND	0.038000	0.040000	mg/kg	0	95.0		70 - 130	

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Total Petroleum Hydrocarbons

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B[D0338						
TPH - Light Naptha	B[D0338-BLK1	ND	mg/kg	50	20	
TPH - Aviation Gas	B[D0338-BLK1	ND	mg/kg	50	20	
TPH - Stoddard Solvent	B[D0338-BLK1	ND	mg/kg	20	5.0	
TPH - Heavy Naptha	B[D0338-BLK1	ND	mg/kg	10	5.0	
TPH - Gasoline	B[D0338-BLK1	ND	mg/kg	20	5.0	
TPH - Jet Fuel (JP4)	B[D0338-BLK1	ND	mg/kg	10	5.0	
TPH - Jet Fuel (JP5)	B[D0338-BLK1	ND	mg/kg	10	4.6	
TPH - Jet Fuel (JP8)	B[D0338-BLK1	ND	mg/kg	10	5.0	
TPH - Kerosene	B[D0338-BLK1	ND	mg/kg	10	1.4	
TPH - Diesel (FFP)	B[D0338-BLK1	ND	mg/kg	10	1.2	
TPH - Fuel Oil #6	B[D0338-BLK1	ND	mg/kg	10	5.0	
TPH - Crude Oil	B[D0338-BLK1	ND	mg/kg	20	2.8	
TPH - Hydraulic Oil / Motor Oil	B[D0338-BLK1	ND	mg/kg	20	6.5	
TPH - WD-40	B[D0338-BLK1	ND	mg/kg	10	5.0	
Tetracosane (Surrogate)	B[D0338-BLK1	109	%	30 - 130	(LCL - UCL)	
QC Batch ID: B[D0817						
TPH - Light Naptha	B[D0817-BLK1	ND	mg/kg	50	20	
TPH - Aviation Gas	B[D0817-BLK1	ND	mg/kg	50	20	
TPH - Stoddard Solvent	B[D0817-BLK1	ND	mg/kg	20	5.0	
TPH - Heavy Naptha	B[D0817-BLK1	ND	mg/kg	10	5.0	
TPH - Gasoline	B[D0817-BLK1	ND	mg/kg	20	5.0	
TPH - Jet Fuel (JP4)	B[D0817-BLK1	ND	mg/kg	10	5.0	
TPH - Jet Fuel (JP5)	B[D0817-BLK1	ND	mg/kg	10	4.6	
TPH - Jet Fuel (JP8)	B[D0817-BLK1	ND	mg/kg	10	5.0	
TPH - Kerosene	B[D0817-BLK1	ND	mg/kg	10	1.4	
TPH - Diesel (FFP)	B[D0817-BLK1	ND	mg/kg	10	1.2	
TPH - Fuel Oil #6	B[D0817-BLK1	ND	mg/kg	10	5.0	
TPH - Crude Oil	B[D0817-BLK1	ND	mg/kg	20	2.8	
TPH - Hydraulic Oil / Motor Oil	B[D0817-BLK1	ND	mg/kg	20	6.5	
TPH - WD-40	B[D0817-BLK1	ND	mg/kg	10	5.0	
Tetracosane (Surrogate)	B[D0817-BLK1	101	%	30 - 130	(LCL - UCL)	

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Total Petroleum Hydrocarbons

								Control L	imits	
				Spike		Percent		Percent		Lab
Constituent	QC Sample ID	Type	Result	Level	Units	Recovery	RPD	Recovery	RPD	Quals
QC Batch ID: B[D0338										
TPH - Diesel (FFP)	B[D0338-BS1	LCS	96.266	83.333	mg/kg	116		64 - 124		
Tetracosane (Surrogate)	B[D0338-BS1	LCS	3.9473	3.3333	mg/kg	118		30 - 130		
QC Batch ID: B[D0817										
TPH - Diesel (FFP)	B[D0817-BS1	LCS	80.930	84.459	mg/kg	95.8		64 - 124		
Tetracosane (Surrogate)	B[D0817-BS1	LCS	3.7120	3.3784	mg/kg	110		30 - 130		

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Total Petroleum Hydrocarbons

									Cont	rol Limits	
		Source	Source		Spike			Percent		Percent	Lab
Constituent	Туре	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals
QC Batch ID: B[D0338	Use	d client samp	le: N								
TPH - Diesel (FFP)	MS	1705207-42	ND	83.902	84.746	mg/kg		99.0		52 - 131	
	MSD	1705207-42	ND	86.935	82.237	mg/kg	3.6	106	30	52 - 131	
Tetracosane (Surrogate)	MS	1705207-42	ND	3.5332	3.3898	mg/kg		104		30 - 130	
	MSD	1705207-42	ND	3.7128	3.2895	mg/kg	5.0	113		30 - 130	
QC Batch ID: B[D0817	Use	d client samp	le: Y - Des	cription: Co	mposite 4-0	-A,4-O-B,	03/30/2	2017 00:00			
TPH - Diesel (FFP)	MS	1708436-07	ND	72.233	82.237	mg/kg		87.8		52 - 131	
	MSD	1708436-07	ND	77.267	83.056	mg/kg	6.7	93.0	30	52 - 131	
Tetracosane (Surrogate)	MS	1708436-07	ND	3.1086	3.2895	mg/kg		94.5		30 - 130	
	MSD	1708436-07	ND	3.4246	3.3223	mg/kg	9.7	103		30 - 130	

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Project Manager: Matt Pollock

Chemical Analysis

									Cont	rol Limits	
		Source	Source		Spike			Percent		Percent	Lab
Constituent	Type	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals
QC Batch ID: B[D0990	Use	d client samp	le: Y - Des	scription: Con	nposite 1-0	-A,1-O-B,	03/30/2	2017 00:00			
Solids	DUP	1708436-01	86.820	86.310		%	0.6		20		
QC Batch ID: B[D1084	Use	d client samp	le: N								
Solids	DUP	1709059-01	84.220	83.860		%	0.4		20		
QC Batch ID: B[D1238	Use	d client samp	le: Y - Des	cription: Con	nposite 2-W	/-A,2-W-B,	03/30/	2017 00:00			
Solids	DUP	1708436-04	85.310	84.010		%	1.5		20		

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Total Concentrations (TTLC)

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: B[D0146						
Mercury	B[D0146-BLK1	ND	mg/kg	0.16	0.019	
QC Batch ID: B[D0216						
Mercury	B[D0216-BLK1	ND	mg/kg	0.16	0.019	
QC Batch ID: B[D0341						
Arsenic	B[D0341-BLK1	ND	mg/kg	0.50	0.17	
Cadmium	B[D0341-BLK2	ND	mg/kg	0.25	0.048	
Chromium	B[D0341-BLK2	ND	mg/kg	0.75	0.25	
Copper	B[D0341-BLK1	ND	mg/kg	0.50	0.099	
Lead	B[D0341-BLK1	ND	mg/kg	0.25	0.12	
Nickel	B[D0341-BLK1	0.34075	mg/kg	0.50	0.11	J
Selenium	B[D0341-BLK2	ND	mg/kg	0.50	0.11	
Silver	B[D0341-BLK1	ND	mg/kg	0.25	0.051	
Zinc	B[D0341-BLK1	0.55075	mg/kg	1.3	0.50	J
QC Batch ID: B[D0469						
Arsenic	B[D0469-BLK2	ND	mg/kg	0.50	0.17	
Cadmium	B[D0469-BLK1	ND	mg/kg	0.25	0.048	
Chromium	B[D0469-BLK1	ND	mg/kg	0.75	0.25	
Copper	B[D0469-BLK1	ND	mg/kg	0.50	0.099	
ead	B[D0469-BLK1	ND	mg/kg	0.25	0.12	
Nickel	B[D0469-BLK1	0.13650	mg/kg	0.50	0.11	J
Selenium	B[D0469-BLK1	ND	mg/kg	0.50	0.11	
Silver	B[D0469-BLK2	ND	mg/kg	0.25	0.051	
Zinc	B[D0469-BLK2	0.92325	mg/kg	1.3	0.50	J
QC Batch ID: BZJ1708						
Arsenic	BZJ1708-BLK1	ND	mg/kg	0.50	0.17	
Cadmium	BZJ1708-BLK1	ND	mg/kg	0.25	0.048	
Chromium	BZJ1708-BLK1	0.51200	mg/kg	0.75	0.25	J
Copper	BZJ1708-BLK1	ND	mg/kg	0.50	0.099	
ead	BZJ1708-BLK1	ND	mg/kg	0.25	0.12	
Nickel	BZJ1708-BLK1	0.11425	mg/kg	0.50	0.11	J
Selenium	BZJ1708-BLK1	ND	mg/kg	0.50	0.11	
Silver	BZJ1708-BLK1	ND	mg/kg	0.25	0.051	

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Total Concentrations (TTLC)

Constituent	QC Sample ID	MB Result	Units	PQL	MDL	Lab Quals
QC Batch ID: BZJ1708						
Zinc	BZJ1708-BLK1	0.57775	mg/kg	1.3	0.50	J

Reported: 04/14/2017 10:38 Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Total Concentrations (TTLC)

	Quality 0							Onut!!	lua ! 4 =	
				Spike		Percent		Control L Percent	<u>.imits</u>	Lab
Constituent	QC Sample ID	Туре	Result	Level	Units	Recovery	RPD	Recovery	RPD	Quals
QC Batch ID: B[D0146										
Mercury	B[D0146-BS1	LCS	0.85840	0.80000	mg/kg	107		80 - 120		
QC Batch ID: B[D0216										
Mercury	B[D0216-BS1	LCS	0.83104	0.80000	mg/kg	104		80 - 120		
QC Batch ID: B[D0341										
Arsenic	B[D0341-BS1	LCS	25.529	25.000	mg/kg	102		75 - 125		
Cadmium	B[D0341-BS2	LCS	10.353	10.000	mg/kg	104		75 - 125		
Chromium	B[D0341-BS2	LCS	11.310	10.000	mg/kg	113		75 - 125		
Copper	B[D0341-BS1	LCS	27.537	25.000	mg/kg	110		75 - 125		
Lead	B[D0341-BS1	LCS	27.650	25.000	mg/kg	111		75 - 125		
Nickel	B[D0341-BS1	LCS	27.738	25.000	mg/kg	111		75 - 125		
Selenium	B[D0341-BS2	LCS	23.489	25.000	mg/kg	94.0		75 - 125		
Silver	B[D0341-BS1	LCS	10.919	10.000	mg/kg	109		75 - 125		
Zinc	B[D0341-BS1	LCS	25.893	25.000	mg/kg	104		75 - 125		
QC Batch ID: B[D0469										
Arsenic	B[D0469-BS2	LCS	26.015	25.000	mg/kg	104		75 - 125		
Cadmium	B[D0469-BS1	LCS	10.436	10.000	mg/kg	104		75 - 125		
Chromium	B[D0469-BS1	LCS	11.394	10.000	mg/kg	114		75 - 125		
Copper	B[D0469-BS1	LCS	27.732	25.000	mg/kg	111		75 - 125		
Lead	B[D0469-BS1	LCS	27.797	25.000	mg/kg	111		75 - 125		
Nickel	B[D0469-BS1	LCS	27.876	25.000	mg/kg	112		75 - 125		
Selenium	B[D0469-BS1	LCS	24.650	25.000	mg/kg	98.6		75 - 125		
Silver	B[D0469-BS2	LCS	11.248	10.000	mg/kg	112		75 - 125		
Zinc	B[D0469-BS2	LCS	26.130	25.000	mg/kg	105		75 - 125		
QC Batch ID: BZJ1708										
Arsenic	BZJ1708-BS1	LCS	24.791	25.000	mg/kg	99.2		75 - 125		
Cadmium	BZJ1708-BS1	LCS	10.141	10.000	mg/kg	101		75 - 125		
Chromium	BZJ1708-BS1	LCS	11.162	10.000	mg/kg	112		75 - 125		
Copper	BZJ1708-BS1	LCS	26.821	25.000	mg/kg	107		75 - 125		
Lead	BZJ1708-BS1	LCS	26.068	25.000	mg/kg	104		75 - 125		
Nickel	BZJ1708-BS1	LCS	25.472	25.000	mg/kg	102		75 - 125		
Selenium	BZJ1708-BS1	LCS	24.448	25.000	mg/kg	97.8		75 - 125		
Silver	BZJ1708-BS1	LCS	10.964	10.000	mg/kg	110		75 - 125		
Zinc	BZJ1708-BS1	LCS	25.926	25.000	mg/kg	104		75 - 125		

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Total Concentrations (TTLC)

Quality Control Report - Precision & Accuracy

		<u> </u>		<u> </u>					Cont	rol Limits	
		Source	Source		Spike			Percent		Percent	Lab
Constituent	Туре	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals
	Lloo	d aliant came	No: V Doc	arintian: Ca	mposito 1 O	1 1 1 D B	02/20/2	2017 00:00			
QC Batch ID: B[D0146		d client samp		-	inposite i-O		03/30/2	2017 00.00	00		
Mercury	DUP	1708436-01	ND	ND		mg/kg			20		
	MS	1708436-01	ND	0.83938	0.76923	mg/kg		109		80 - 120	
-	MSD	1708436-01	ND	0.81462	0.76923	mg/kg	3.0	106	20	80 - 120	
QC Batch ID: B[D0216	Use	d client samp	ole: Y - Des	scription: Co	mposite 8-O	-A,8-O-B,	03/30/2	2017 00:00			
Mercury	DUP	1708436-15	ND	ND		mg/kg			20		
	MS	1708436-15	ND	0.86311	0.81967	mg/kg		105		80 - 120	
	MSD	1708436-15	ND	0.87738	0.81967	mg/kg	1.6	107	20	80 - 120	
QC Batch ID: B[D0341	Use	d client samp	ole: N								
Arsenic	 DUP	1708239-01	ND	ND		mg/kg			20		
	MS	1708239-01	ND	27.805	25.000	mg/kg		111		75 - 125	
	MSD	1708239-01	ND	28.258	25.000	mg/kg	1.6	113	20	75 - 125	
Cadmium	DUP	1708239-01	ND	ND		mg/kg			20		
	MS	1708239-01	ND	10.508	10.000	mg/kg		105		75 - 125	
	MSD	1708239-01	ND	10.994	10.000	mg/kg	4.5	110	20	75 - 125	
Chromium	DUP	1708239-01	1.4558	1.3052		mg/kg	10.9		20		
Chioman	MS	1708239-01	1.4558	12.556	10.000	mg/kg	10.5	111	20	75 - 125	
	MSD	1708239-01	1.4558	12.720	10.000	mg/kg	1.3	113	20	75 - 125	
Copper	DUP	1708239-01	4.2198	4.0025		mg/kg	5.3		20		
Соррег	MS	1708239-01	4.2198	30.446	25.000	mg/kg	5.5	105	20	75 - 125	
	MSD	1708239-01	4.2198	30.739	25.000	mg/kg	1.0	106	20	75 - 125 75 - 125	
Lead	DUP	1708239-01	ND	ND		mg/kg			20		
Leau	MS	1708239-01	ND	27.165	25.000	mg/kg		109	20	75 - 125	
	MSD	1708239-01	ND	28.082	25.000	mg/kg	3.3	112	20	75 - 125 75 - 125	
Ni-al-al										10 120	
Nickel	DUP	1708239-01 1708239-01	0.48125 0.48125	0.41550 27.110	25.000	mg/kg	14.7	107	20	75 - 125	J
	MS	1708239-01	0.48125	27.110	25.000	mg/kg mg/kg	2.0	107	20	75 - 125 75 - 125	
0.1	MSD				25.000			109		75 - 125	
Selenium	DUP	1708239-01	0.18200	0.22925	25 000	mg/kg	23.0	442	20	75 405	J,A02
	MS	1708239-01 1708239-01	0.18200 0.18200	28.383 28.139	25.000	mg/kg	0.0	113 112	20	75 - 125 75 - 125	
	MSD				25.000	mg/kg	0.9	112		75 - 125	
Silver	DUP	1708239-01	ND	ND		mg/kg		40-	20		
	MS	1708239-01	ND	10.794	10.000	mg/kg		108		75 - 125	
	MSD	1708239-01	ND	11.091	10.000	mg/kg	2.7	111	20	75 - 125	
Zinc	DUP	1708239-01	13.302	15.849		mg/kg	17.5		20		
	MS	1708239-01	13.302	37.731	25.000	mg/kg		97.7		75 - 125	
	MSD	1708239-01	13.302	37.981	25.000	mg/kg	0.7	98.7	20	75 - 125	

QC Batch ID: B[D0469

Used client sample: N

Reported: 04/14/2017 10:38
Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Total Concentrations (TTLC)

									Cont	rol Limits	
		Source	Source		Spike			Percent		Percent	Lab
Constituent	Type	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals
QC Batch ID: B[D0469	Use	ed client samp	le: N								
Arsenic	 DUP	707594-06RE1	ND	ND		mg/kg			20		
	MS	707594-06RE	ND	26.994	25.000	mg/kg		108		75 - 125	
	MSD	707594-06RE ²	ND	28.420	25.000	mg/kg	5.1	114	20	75 - 125	
 Cadmium	DUP	707594-06RE ²	ND	ND		mg/kg			20		
	MS	707594-06RE	ND	9.9745	10.000	mg/kg		99.7		75 - 125	
	MSD	707594-06RE	ND	10.536	10.000	mg/kg	5.5	105	20	75 - 125	
 Chromium	DUP	707594-06RE ²	1.2615	1.1080		mg/kg	13.0		20		
Silioniani	MS	707594-06RE	1.2615	11.245	10.000	mg/kg	10.0	99.8		75 - 125	
	MSD	707594-06RE	1.2615	11.845	10.000	mg/kg	5.2	106	20	75 - 125	
 Copper	DUP	707594-06RE ²	3.5528	3.1342		mg/kg	12.5		20	-	
ooppo!	MS	707594-06RE	3.5528	29.277	25.000	mg/kg	12.0	103	20	75 - 125	
	MSD	707594-06RE	3.5528	30.612	25.000	mg/kg	4.5	103	20	75 - 125 75 - 125	
							7.0			.0 120	
_ead	DUP	707594-06RE	0.33225	ND	25.000	mg/kg		400	20	75 405	
	MS	707594-06RE	0.33225	25.886	25.000	mg/kg	4.0	102	20	75 - 125	
	MSD	707594-06RE ²	0.33225	26.947	25.000	mg/kg	4.0	106	20	75 - 125	
Nickel	DUP	707594-06RE ²	0.37700	0.31425		mg/kg	18.2		20		J
	MS	707594-06RE ²	0.37700	25.807	25.000	mg/kg		102		75 - 125	
	MSD	707594-06RE ²	0.37700	27.010	25.000	mg/kg	4.6	107	20	75 - 125	
Selenium	DUP	707594-06RE ²	ND	ND		mg/kg			20		
	MS	707594-06RE1	ND	27.000	25.000	mg/kg		108		75 - 125	
	MSD	707594-06RE [*]	ND	28.608	25.000	mg/kg	5.8	114	20	75 - 125	
Silver	DUP	707594-06RE1	ND	ND		mg/kg			20		
	MS	707594-06RE [*]	ND	10.273	10.000	mg/kg		103		75 - 125	
	MSD	707594-06RE [*]	ND	10.664	10.000	mg/kg	3.7	107	20	75 - 125	
 Zinc	DUP	707594-06RE ²	12.892	12.250		mg/kg	5.1		20		
	MS	707594-06RE ²	12.892	35.747	25.000	mg/kg		91.4		75 - 125	
	MSD	707594-06RE ²	12.892	38.514	25.000	mg/kg	7.5	102	20	75 - 125	
QC Batch ID: BZJ1708	Use	ed client samp	le: N								
Arsenic	DUP	1709129-03	ND	ND		mg/kg			20		
	MS	1709129-03	ND	27.288	25.000	mg/kg		109		75 - 125	
	MSD	1709129-03	ND	28.114	25.000	mg/kg	3.0	112	20	75 - 125	
Cadmium	DUP	1709129-03	ND	ND		mg/kg			20		
	MS	1709129-03	ND	10.030	10.000	mg/kg		100		75 - 125	
	MSD	1709129-03	ND	9.7860	10.000	mg/kg	2.5	97.9	20	75 - 125	
Chromium	DUP	1709129-03	1.4370	1.3622		mg/kg	5.3		20		
	MS	1709129-03	1.4370	10.926	10.000	mg/kg	5.0	94.9	_0	75 - 125	
	MSD	1709129-03	1.4370	11.153	10.000	mg/kg	2.1	97.2	20	75 - 125 75 - 125	

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Project: Alameda Point

Project Number: 15284
Project Manager: Matt Pollock

Total Concentrations (TTLC)

									Con	trol Limits	
		Source	Source		Spike			Percent		Percent	Lab
Constituent	Type	Sample ID	Result	Result	Added	Units	RPD	Recovery	RPD	Recovery	Quals
QC Batch ID: BZJ1708	Use	d client samp	ole: N								
Copper	D UP	1709129-03	5.5535	5.8122		mg/kg	4.6		20		
	MS	1709129-03	5.5535	31.616	25.000	mg/kg		104		75 - 125	
	MSD	1709129-03	5.5535	31.828	25.000	mg/kg	0.7	105	20	75 - 125	
Lead	DUP	1709129-03	ND	ND		mg/kg			20		
	MS	1709129-03	ND	25.487	25.000	mg/kg		102		75 - 125	
	MSD	1709129-03	ND	25.936	25.000	mg/kg	1.7	104	20	75 - 125	
Nickel	DUP	1709129-03	0.28825	0.29150		mg/kg	1.1		20		J
	MS	1709129-03	0.28825	24.364	25.000	mg/kg		96.3		75 - 125	
	MSD	1709129-03	0.28825	23.878	25.000	mg/kg	2.0	94.4	20	75 - 125	
Selenium	DUP	1709129-03	ND	ND		mg/kg			20		
	MS	1709129-03	ND	28.227	25.000	mg/kg		113		75 - 125	
	MSD	1709129-03	ND	29.462	25.000	mg/kg	4.3	118	20	75 - 125	
Silver	DUP	1709129-03	ND	ND		mg/kg			20		
	MS	1709129-03	ND	10.258	10.000	mg/kg		103		75 - 125	
	MSD	1709129-03	ND	10.278	10.000	mg/kg	0.2	103	20	75 - 125	
Zinc	DUP	1709129-03	13.453	13.256		mg/kg	1.5		20		
	MS	1709129-03	13.453	37.450	25.000	mg/kg		96.0		75 - 125	
	MSD	1709129-03	13.453	38.500	25.000	mg/kg	2.8	100	20	75 - 125	

Reported: 04/14/2017 10:38

Project: Alameda Point

Project Number: 15284 Project Manager: Matt Pollock

Los Gatos, CA 95032

H.T. Harvey & Associates

983 University Avenue, Building D

Notes And Definitions

Estimated Value (CLP Flag) MDL Method Detection Limit ND Analyte Not Detected Practical Quantitation Limit **PQL**

A02 The difference between duplicate readings is less than the quantitation limit. A10 Detection and quantitation limits were raised due to matrix interference.

L21 The Laboratory Control Sample Soil (LCSS) recovery is not within laboratory established control limits.

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.

Attachment C.

Summary Table of Horticultural Analysis



4741 East Hunter Ave. Suite A Anaheim, CA 92807 Main 714-282-8777 ° Fax 714-282-8575 www.waypointanalytical.com

Project : Alameda Point Alameda

Job #3898-03

COMPREHENSIVE SOIL ANALYSIS

Report No : **17-110-0122** Purchase Order : 17-1409 Date Recd : 04/20/2017

> Date Printed : 04/26/2017 Page : 1 of 1

Comple Description Comple ID	Half Sat %	рН	ECe	NO ₃ -N ppm	NH ₄ -N ppm	PO ₄ -P ppm	K ppm	Ca ppm	Mg ppm	Cu ppm	Zn ppm	Mn ppm	Fe ppm	Organic	Lab No.
Sample Description - Sample ID	TEC	Qual Lime	dS/m				Suf	ficiency Fa	actors					% dry wt.	Lab No.
Northern Overburden	12	8.0	0.4		4	6	34	520	170	0.3	0.2	1	13		00074
	44	None			0.3		0.4	0.7	1.7	0.5	0.1	0.2	0.6	0.5	20974
Southern Wetland	12	7.6	0.0	2	4	1	64	427	110	0.6	0.3	2	20		20975
	32	None	one 0.9		0.3		0.9	0.8	1.4	1.5	0.2	0.6	1.3	0.4	20975
Northern Wetland	11	7.9	0.5	2	3	2	58	396	122	0.6	0.3	2	20	0.5	20976
	33	None	0.5	0	.2	0.2	0.9	0.7	1.6	1.4	0.2	0.6	1.2	0.5	20976
Central Overburden	12	7.6	0.3	2	3	4	34	386	105	0.4	0.3	1	11	0.6	20977
	29	None	0.3	0	.2	0.3	0.5	0.8	1.5	1.1	0.2	0.4	0.8	0.6	20977
Central Wetland	12	7.9	0.4	2	4	4	49	338	95	0.5	0.4	5	20		20978
	27	Low	0.4	0	.3	0.3	0.8	0.7	1.4	1.4	0.3	1.7	1.5	0.5	20976
Southern Overburden	12	7.1	0.5	3	4	0	68	372	92	0.7	0.4	3	50		20979
	30 Low	0.5	0	.3	0	1.0	0.7	1.3	1.8	0.3	0.9	3.4	0.4	20313	

	Saturation Extract Values						Grav	ol %	Pe	ercent of S	ample Passing 2 mm				
Ca meq/L	Mg meq/L	Na meq/L	K meq/L	B ppm	SO ₄ meq/L	SAR	Coarse 5 - 12	Fine 2 - 5	Very Coarse 1 - 2	Sa Coarse 0.5 - 1	and Med. to Very Fine 0.05 - 0.5	Silt .00205	Clay 0002	USDA Soil Classification	Lab No.
0.6	0.4	3.8	0.2	0.07	0.8	5.5	0	0.1	0.4	10.0	87.1	1.9	0.5	Sand	20974
2.8	1.7	4.3	0.4	0.15	4.6	2.8	0.1	0.2	0.2	5.6	91.7	1.9	0.5	Sand	20975
0.8	0.6	3.2	0.3	0.05	1.6	3.9	0	0	0	12.2	83.3	1.9	2.5	Sand	20976
0.9	0.7	1.1	0.2	0.04	0.6	1.3	0.4	0.4	0.6	7.2	87.7	1.9	2.5	Sand	20977
0.8	0.6	3.2	0.3	0.06	2.7	3.9	0	0.1	0	7.0	90.5	1.9	0.5	Sand	20978
0.8	0.7	4.4	0.3	0.10	0.7	5.1	0.1	0.3	0	14.0	83.5	1.9	0.5	Sand	20979

Sufficiency factor (1.0=sufficient for average crop) below each nutrient value. N factor based on 200 ppm constant feed. SAR = Sodium adsorption ratio. Half Saturation %=approx field moisture capacity. Nitrogen(N), Potassium(K), Calcium(Ca) and Magnesium(Mg) by sodium chloride extraction. Phosphorus(P) by sodium bicarbonate extraction. Copper(Cu), Zinc(Zn), Manganese(Mn) & Iron(Fe) by DTPA extraction. Sat. ext. method for salinity (ECe as dS/m),Boron (B), Sulfate(SO 4), Sodium(Na). Gravel fraction expressed as percent by weight of oven-dried sample passing a 12mm(1/2 inch) sieve. Particle sizes in millimeters. Organic percentage determined by Walkley-Black or Loss on Ignition.

Appendix C.	Preconstruction Photodocumentation

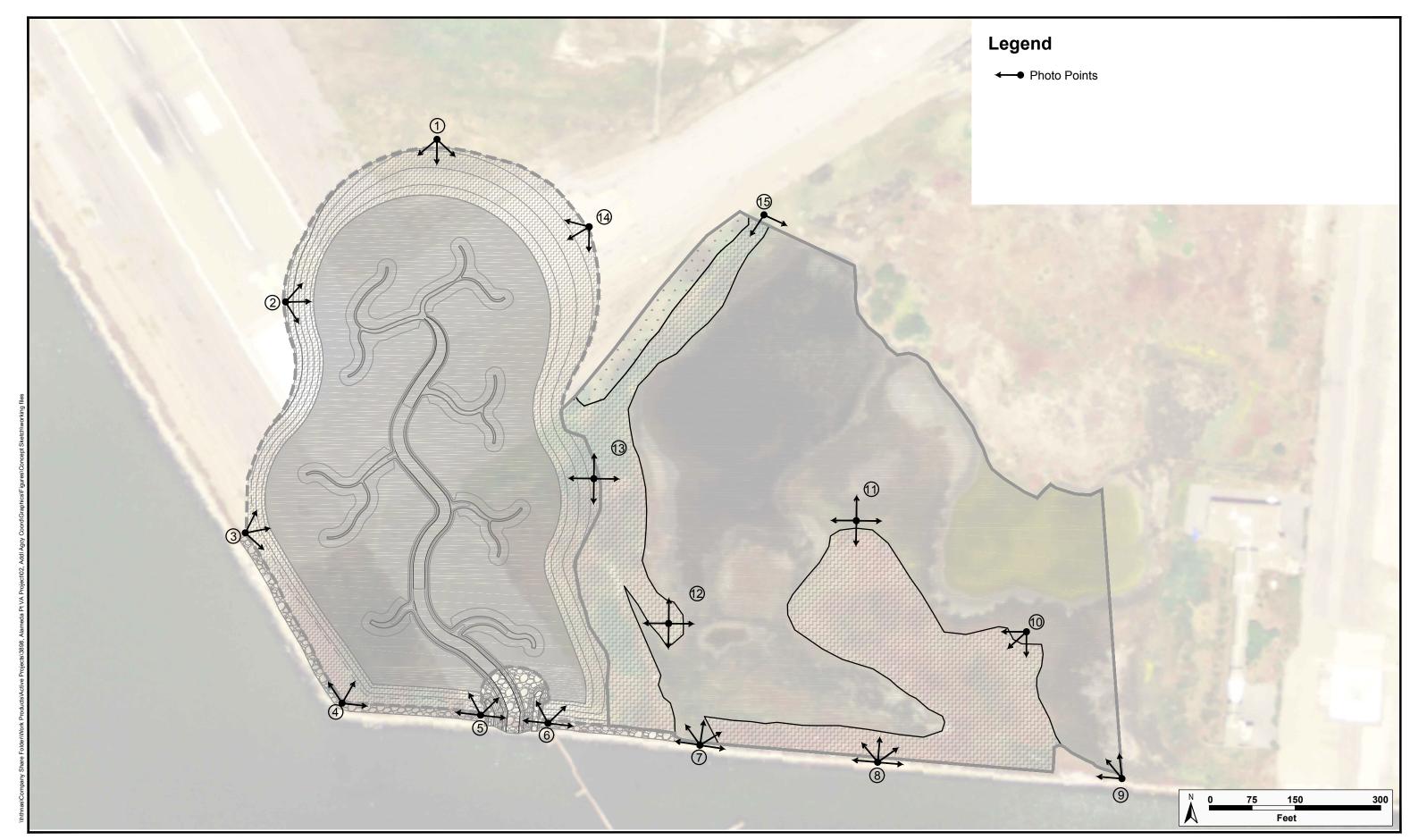






Photo Point 1. From left to right, facing southeast, south, and southwest, respectively.



Photo Point 2. From left to right, facing northeast, east, and southeast, respectively.



Photo Point 3. From left to right, facing northeast, east, and southeast, respectively.



Photo Point 4. From left to right, facing northwest, northeast, and east, respectively.



Photo Point 5. From left to right, facing west, northwest, northeast, and east, respectively.



Photo Point 6. From left to right, facing west, northwest, northeast, and east, respectively.

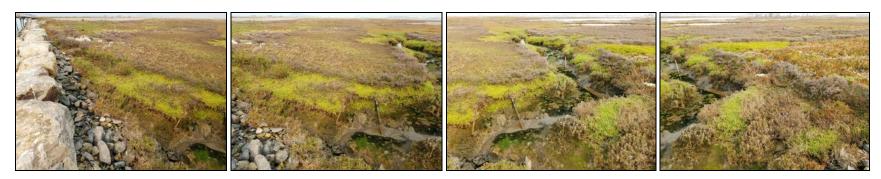


Photo Point 7. From left to right, facing west, northwest, northeast, and east, respectively.



Photo Point 8. From left to right, facing west, northwest, northeast, and east, respectively.



Photo Point 9. From left to right, facing west, northwest, north, respectively.



Photo Point 10. From left to right, facing west, southwest, and south, respectively.

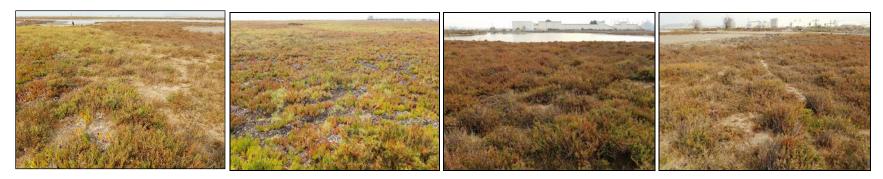


Photo Point 11. From left to right, facing west, south, east, and north, respectively.



Photo Point 12. From left to right, facing west, south, east, and north, respectively.



Photo Point 13. From left to right, facing west, south, east, and north, respectively.



Photo Point 14. From left to right, facing south, southwest, and northwest, respectively.



Photo Point 15. From left to right, facing southeast and southwest, respectively.